
Submissions on behalf of Blue Ireland Coalition CLG in respect of North Irish Sea Array Offshore Wind Farm (An Coimisiún Pleanála Case Reference: OA29N.319866) Response to Request for Further Information

From Blue Ireland <info@blueireland.org>

Date Wed 10/21/2026 9:05 AM

To Marine <marine@pleanala.ie>

 2 attachments (1 MB)

Cover Letter Blue Ireland Submission on NISA RFI.pdf; Blue Ireland NISA FI Observation_Final.pdf;

Caution: This is an **External Email** and may have malicious content. Please take care when clicking links or opening attachments. When in doubt, contact the ICT Helpdesk.

RE: Submissions on behalf of Blue Ireland Coalition CLG in respect of North Irish Sea Array Offshore Wind Farm (An Coimisiún Pleanála Case Reference: OA29N.319866) Response to Request for Further Information

Dear An Coimisiún Pleanála,

Please find attached a submission on behalf of Blue Ireland Coalition CLG (T/A Blue Ireland) in respect of North Irish Sea Array (NISA) Offshore Wind Farm (An Coimisiún Pleanála Case Reference: OA29N.319866) Response to Request for Further. Details of which are found at <https://www.pleanala.ie/en-ie/case/319866>)

Please confirm receipt of this request (to info@blueireland.org) at your earliest convenience and, please keep us informed of any updates with respect to this development proposal.

Best Regards,

Owen Clarkin



Avada Energy

Garadice House, 3-4 Fairview, Dublin 3, Ireland D03 X0Y5

www.blueireland.org



Blue Ireland Coalition CLG,
Garadice House,
3-4 Fairview,
Dublin 3,
Ireland.

21th October 2026

RE: Submissions on behalf of Blue Ireland Coalition CLG in respect of North Irish Sea Array Offshore Wind Farm (An Coimisiún Pleanála Case Reference: OA29N.319866) Response to Request for Further Information

Dear An Coimisiún Pleanála Officers,

Please find attached a submission on behalf of Blue Ireland Coalition CLG (T/A Blue Ireland) in respect of North Irish Sea Array (NISA) Offshore Wind Farm (An Coimisiún Pleanála Case Reference: OA29N.319866) Response to Request for Further. Details of which are found at <https://www.pleanala.ie/en-ie/case/319866>

Please confirm receipt of this request (to info@blueireland.org) at your earliest convenience and, please keep us informed of any updates with respect to this development proposal.

Best Regards,

A handwritten signature in blue ink that reads "Owen Clarkin". The signature is written in a cursive style. Below the signature is a horizontal line.

Owen Clarkin



Observation submitted on behalf of Blue Ireland CLG.

Response to Further Information

North Irish Sea Array (NISA) Offshore Wind Farm

An Coimisiún Pleanála - Case reference: OA29N.319866

20 October 2026.

Contents

Introduction and Approach	7
Executive Summary	9
Principal Issue 1: Marine Physical Processes, Sediment Transport and Long-Term Morphodynamics	11
1.1 Overview	11
1.2 FIR 7(e) - the complete requested extreme-event range has not been demonstrated	11
1.3 FIR 7(p)(ii) - operational suspended-sediment and deposition outputs were expressly requested but not modelled	12
1.4 FIR 7(q) - the requested 40+ year developed-versus-undeveloped morphodynamic assessment is not demonstrated	12
1.5 FIR 7(r) - dependent ecological conclusions cannot resolve modelling that was not undertaken	13
1.6 Benthic ecology - the OSPAR receptor has now been recognised, but the 2022 and 2025 baselines require reconciliation	13
1.7 Permanent habitat loss - the low-magnitude conclusion should be demonstrated for the high-sensitivity OSPAR receptor itself	14
1.8 Sandeel substrate demonstrates why long-term sediment evolution is an ecological, not merely modelling, issue	14
1.8A Foundation redesign: permanent footprint, Nephrops habitat and grout	15
1.8B Fish-noise modelling: stationary receptors, sensitive life stages and retained sound sources	16
1.9 Combined consequence for EIA, ecosystem function and Natura assessment	16
1.10 Matters to be resolved before the physical-process and dependent ecological conclusions are relied upon	17
1.11 Conclusion	17
Principal Issue 2: Offshore Ornithology, the North-West Irish Sea SPA and Site Selection	18
2.1 Overview	18
2.2 Migratory birds: the alternative evidence does not yet demonstrate equivalence to the survey information requested by the Commission	18
2.2.1 The new field surveys principally cover autumn migration	19
2.2.2 Passive Acoustic Monitoring (PAM) does not provide several of the quantitative variables sought by the Commission	19
2.2.3 Consequence for the collision assessment	19
2.3 Common Guillemot: breeding-season definition and SPA attribution	20
2.3.1 The July population may be mixed, but that does not establish that it is wholly non-breeding ...	20
2.3.2 The seasonal classification materially determines whose birds are affected	20
2.3.3 NISA's own sensitivity assessment demonstrates material consequence	21
2.3.4 The Article 6(3) chain must explicitly resolve the Furness sensitivity	21
2.4 Red-throated Diver: the assessment has improved materially, but the Article 6(3) question is spatial and functional	22
2.4.1 The contemporary lower density does not itself demonstrate loss of historic habitat function ..	22
2.4.2 The 10 km boundary requires justification as the complete ecological envelope	22

2.4.3 Mortality expressed against a regional denominator does not answer all SPA conservation-objective attributes	23
2.5 Red-throated Diver: the updated in-combination pathway is not presently traceable.....	23
2.6 Common Guillemot displacement: redistribution within a large SPA is not itself proof of ecological capacity	24
2.7 Relationship with the Phase 1 cumulative assessment.....	24
2.7A Designated Manx Seabird Sites: regional population assessment is not a substitute for receptor-specific assessment	25
2.7B Rockabill tern populations: revised collision predictions and conservation objectives.....	25
2.7C Kittiwake population projections for the North-West Irish Sea SPA.....	26
2.8 Consequence for FIR 6: Site Selection	26
2.8A Avoidance and reasonable scale or layout alternatives.....	27
2.9 Article 6(3): the final conclusion must resolve the scientific uncertainty rather than merely record it	28
2.10 Matters Blue Ireland submits should be resolved before the ornithological no-AEoI conclusion is relied upon	28
2.11 Conclusion	29
Principal Issue 3: Marine Mammals: Temporary Threshold Shift, Sequential Exposure, High-Order UXO, Operational Noise and Strict Species Protection	30
3.1 Overview	30
3.2 FIR 10(o): TTS has been addressed, but the substantive question identified by the Commission remains unresolved.....	30
3.3 Cumulative acoustic dose is not the same question as sequential auditory recovery	31
3.4 Drilled pin piles should be represented by the actual proposed installation sequence	32
3.5 Auditory-injury mitigation does not resolve behavioural disturbance	32
3.6 The project-specific cetacean baseline is stronger on occurrence than ecological function.....	33
3.6A Regulation 51(2)(d): ecological functionality of cetacean breeding sites and resting places.....	34
3.6B Earlier site investigations and the limits of operational marine-mammal observations.....	34
3.6C Scope of the proposed development: ancillary site investigations and project splitting	35
3.7 High-order UXO remains the principal acute residual noise pathway	36
3.7A Predicted UXO auditory-injury exposure and the population denominator	36
3.8 Temporal mitigation should be reconsidered for the remaining UXO pathway	37
3.9 Operational underwater noise must be assessed as an array soundscape	37
3.10 Individual encounter duration is not the same as duration of the pressure	38
3.11 Harbour porpoise conservation status requires a precautionary population context	38
3.11A Rockabill to Dalkey Island SAC: adequacy of the site-specific conservation-objective baseline	39
3.11B Geophysical sources: biological effect range and survey-day habitat exposure	40
3.12 Strict species protection must be resolved independently of population-level significance	40
3.12A No satisfactory alternative is a separate Article 16 question	41
3.13 Updated population-consequences modelling is warranted	42
3.14 Matters which should be resolved before the marine-mammal conclusions are relied upon.....	43

Principal Issue 4: Incomplete Baselines, Monitoring and Post-Consent Determination.....	45
4.1 Overview	45
4.2 FIR 1(d): the Operational Monitoring Plan remains a framework rather than a fully specified programme.....	45
4.3 The relevant distinction is verification versus determination.....	45
4.4 FIR 9(c): the nearshore Annex I reef question remains partly dependent on post-consent ecological identification	46
4.5 FIR 9(b): the revised benthic assessment was not accompanied by an identified revised monitoring programme.....	47
4.6 Offshore bats: operational monitoring is proposed to determine an exposure pathway which remains material to the collision conclusion	47
4.6A Rockabill bats: rotor clearance, lighting and operational response	48
4.7 Commercial fisheries: monitoring redistribution is not the same as demonstrating receiving-ground capacity before consent	48
4.8 Blue Ireland does not object to legitimate post-consent verification within an assessed envelope....	49
4.9 Adaptive mitigation requires sufficiently defined triggers and responses	49
4.10 Matters to be resolved before reliance is placed on post-consent monitoring and adaptive management	49
4.11 Conclusion	50
Cross-Cutting Issue A: Phase 1 Cumulative and In-Combination Assessment, Kittiwake Mortality and the Strategic Assessment Framework	51
A.1 Overview	51
A.2 The relevant question is total mortality upon the protected population, not the label attached to the pathway.....	51
A.3 NISA now quantifies kittiwake displacement, but does not combine it with collision mortality in the PVA	52
A.4 The problem becomes clearer when the five Phase 1 projects are compared	52
A.5 A pathway which is not carried through is not equivalent to zero mortality	53
A.6 Individually small contributions should not disappear before aggregation	53
A.7 The Codling comparison demonstrates why a common endpoint is necessary	53
A.8 The Commission should require one Phase 1 kittiwake reconciliation	54
A.9 There is also a currency issue within NISA’s cumulative assessment	54
A.9A North-West Irish Sea SPA and Rockabill SPA: screening should follow the population beyond the site boundary	55
A.9B Concurrent construction disturbance and accuracy of cumulative input tables.....	55
A.9C Migratory-bird barriers must be considered across the route and the combined arrays	56
A.10 The kittiwake inconsistency illustrates a wider strategic problem	57
A.11 The OREDP did undergo SEA and Appropriate Assessment: the issue is that it is not an updated assessment of the present Phase 1 programme	57
A.12 The strategic environmental conclusions depended upon mitigation and monitoring	57
A.13 The OREDP Appropriate Assessment itself recognised unresolved strategic uncertainty	58

A.14 The present Phase 1 programme has not been tested through an equivalent updated strategic exercise.....	58
A.15 The original OREDP cumulative assessment also warrants caution at the present scale.....	59
A.16 This is why the Phase 1 inconsistency is environmentally material.....	59
A.16A Sequential marine-mammal displacement across the regional construction programme	60
A.17 Article 6(3) requires the combined effect to be resolved, not merely described as individually small	60
A.18 Requested resolution	61
A.19 Conclusion	61
Commercial Fisheries: Cumulative Displacement and Receiving-Ground Capacity.....	62
5.1 Overview	62
5.2 Practical co-existence and the amount of effort actually displaced	62
5.3 Alternative ground is not the same as receiving capacity.....	62
5.4 Phase 1 cumulative assessment must follow the redistribution mechanism	63
5.5 Mitigation which reduces displacement should be distinguished from monitoring or management after displacement	63
5.6 Matters to be resolved	64
5.7 Conclusion	64
Ecosystem Functions, Cultural Services and Cumulative Assessment	64
6.1 Overview	64
6.2 Ecosystem function is a relationship between receptors, not merely a list of receptor effects.....	65
6.3 Provisioning and human-use services are also spatially connected.....	65
6.4 Cultural ecosystem services and community sense of place	66
6.4A Seascape magnitude and community significance	66
6.5 Cumulative assessment should follow the function or service being affected.....	66
6.6 Monitoring, adaptive management and decommissioning	67
6.7 Matters to be resolved	67
6.8 Conclusion	67
Brú na Bóinne: Outstanding Universal Value and Integrity	68
7.1 Overview	68
7.2 The World Heritage endpoint is OUV and integrity, not visibility alone	68
7.3 Absence of visibility from one monument cannot determine the whole World Heritage question	69
7.4 The 2026 response must make the attribute-based assessment traceable	69
7.5 Cumulative technological change must also be assessed against the World Heritage attributes.....	69
7.6 Matters to be resolved	70
7.7 Conclusion	70
Gas Interconnector 2: Major-Accident Risk Classification	70
8.1 Overview	70
8.2 The revised assessment introduces three IC2 major-accident events.....	71

8.3 The stated consequence description corresponds to a different rating.....	71
8.4 The discrepancy is potentially significance-determinative under NISA's own matrix	71
8.5 The existing interconnector assessment reinforces the need for a transparent explanation	71
8.6 The DNV assessment and GNI response should be traceable.....	72
8.7 Matters to be resolved	72
8.8 Conclusion	72
Further Supporting Matters: Onshore Effects, Decommissioning and Navigational Evidence.....	73
9.1 Onshore receptors at Bremeore and Balbriggan	73
9.2 Decommissioning and security for seabed rehabilitation.....	73
9.3 Navigation through the Rockabill Gap.....	73
9.4 Migratory fish and electromagnetic fields: sensitive-species consequences	74
Consolidated Requests to the Commission.....	74
Evidence References	77
Appendix A: FIR Compliance Register	83
Appendix B: Detailed Residual and Verification Schedule	85

Members



Introduction and Approach

Blue Ireland CLG makes this observation on the Significant Further Information submitted in respect of the North Irish Sea Array (“NISA”). The observation is directed to matters that remain material after review of the Applicant’s responses to the Further Information Request (“FIR”) issued by An Coimisiún Pleanála (“the Commission”), rather than to points that have been substantially answered or rendered obsolete by design change. Blue Ireland reserves its right to rely on any points raised in original observations that remain of concern.

The Significant Further Information is substantial. Blue Ireland acknowledges, in particular, the removal of impact pile-driving for wind turbine generator (“WTG”) foundations, the expanded ornithological and marine-mammal material, the revised cumulative-effects assessment, further benthic and fish survey evidence, additional offshore-bat work, the expanded commercial-fisheries material and the correction of a number of documentary issues. The purpose of this observation is therefore not to characterise the Further Information as generally non-responsive. It is to identify the remaining evidential, methodological and legal questions that may still affect the Commission’s ability to reach the required Environmental Impact Assessment (“EIA”), Article 6(3), strict-species-protection and planning conclusions.

The approach adopted throughout is to distinguish between: (i) an issue which has genuinely been resolved; (ii) a remaining technical or documentary verification point; and (iii) a residual capable of affecting a statutory environmental conclusion. Particular emphasis is placed on whether the Applicant has assessed the environmental pathway actually identified by the Commission, whether apparently separate effects have been combined where they act upon the same receptor, and whether monitoring is being used to verify an effect already assessed or instead to determine a receptor, exposure pathway, environmental response or mitigation requirement after consent.

Blue Ireland also distinguishes the different legal and ecological endpoints involved. Population-level significance is not automatically equivalent to absence of an Article 12 disturbance or injury issue; avoidance of permanent threshold shift (“PTS”) is not equivalent to avoidance of behavioural disturbance; a broad regional population denominator is not a substitute for assessment of Special Protection Area (“SPA”) or Special Area of Conservation (“SAC”) conservation objectives; and the inclusion of another project in a cumulative-project list is not necessarily equivalent to assessing the mechanism by which the projects interact.

For Article 6(3), the central question remains whether the Commission can reach its conclusion on the basis of complete, precise and definitive findings capable of dispelling all reasonable scientific doubt as to the effects of the development on the relevant European sites. Where a conclusion depends upon a materially uncertain baseline, an unmodelled pathway, inconsistent cross-project assumptions or post-consent investigation of a fundamental exposure mechanism, Blue Ireland submits that the matter should be resolved before that conclusion is relied upon.^[25]

Citation convention. Superscript bracketed numbers refer to the Evidence References section near the end of this observation. Pinpoint page, section, table and paragraph references are included where they can be fixed reliably against the cited published material; otherwise the reference identifies the relevant source document and assessment component.

Executive Summary

The principal findings of this observation are summarised below. The detailed sections that follow set out the evidence and the particular matters Blue Ireland asks the Commission to resolve.

- Marine physical processes and dependent ecology. The Commission requested a defined extreme-event series, operational suspended-sediment/deposition outputs and a long-term developed-versus-undeveloped morphodynamic assessment. Blue Ireland has not identified the complete requested analyses. That matters because dependent benthic, sandeel, prey and Natura conclusions cannot reliably address the consequences of physical pathways that have not themselves been modelled or demonstrated.
- **Offshore ornithology and the North-West Irish Sea SPA.** NISA has substantially expanded the bird assessment, but material residuals remain concerning spring migratory-passage evidence, the treatment of July as wholly post-breeding for Guillemot despite the Commission-requested March to July sensitivity, the spatial and functional treatment of Red-throated Diver displacement, the updated in-combination pathway, and the ecological capacity of receiving habitat within the SPA.
- Marine mammals and strict species protection. The removal of impact WTG piling is a significant improvement. Residual questions nevertheless remain concerning the exclusion of temporary threshold shift (“TTS”) from the operative injury criterion, sequential exposure and incomplete auditory recovery, whether the drilled Offshore Substation Platform (“OSP”) pin-pile scenario is represented by project-specific cumulative sound exposure level (SELcum) inputs, the ecological consequences of displacement, high-order UXO, operational array sound, and the separate strict-protection analysis under Article 12 / Regulation 51 and, where engaged, the derogation regime under Article 16 / Regulation 54. ^[11,12,15]
- **Incomplete baselines and post-consent determination.** The Operational Monitoring Plan remains a framework whose specific measures, timings and methodologies are to be developed later. That is particularly important where nearshore Annex I reef status remains to be ground-truthed, revised benthic monitoring was expressly requested, and offshore-bat monitoring is proposed to determine whether established migration routes pass through the operating wind farm and whether operation changes bat activity.
- **Phase 1 cumulative and in-combination assessment.** The kittiwake evidence provides a concrete example of inconsistent Phase 1 treatment: collision and displacement mortality are combined by some projects, separated by others, screened out or not carried through by others. Blue Ireland submits that the Commission requires a common receptor-level reconciliation and combined demographic endpoint rather than assuming that the presence of each project in a cumulative table resolves the in-combination question.
- **Strategic context.** Blue Ireland does not suggest that the OREDP lacked SEA or Appropriate Assessment. The concern is that the present Phase 1 programme has not been subjected to an equivalent updated strategic SEA/plan-level AA reflecting the current projects, environmental baseline and cumulative pressures, while the earlier OREDP framework itself depended upon monitoring, filling data gaps, review and an incremental “deploy and monitor” approach. This increases the importance of coherent project-level in-combination assessment.

- **Commercial fisheries.** The revised fisheries material is extensive, but Blue Ireland has not identified a transparent fleet-specific pathway from retained versus displaced effort, through realistic receiving grounds and their existing capacity, to the combined additional pressure and competition generated by the Phase 1 projects, especially for smaller vessels with restricted operational range.
- **Ecosystem functions and cultural services.** The Commission expressly requested an EIAR assessment of ecosystem functions and services. NISA instead relies substantially upon receptor-level conclusions and a standalone synopsis. The unresolved issue is whether that approach captures connected functional pathways, including substrate-dependent prey systems, fisheries use, community sense of place and cumulative cultural ecosystem services.
- **Brú na Bóinne and Gas Interconnector 2.** For Brú na Bóinne the issue is whether the revised material contains a traceable UNESCO-style chain from Outstanding Universal Value (“OUV”) and its attributes to project change and consequence for integrity, rather than only additional viewpoint or Seascape, Landscape and Visual Impact Assessment (“SLVIA”) material. For Gas Interconnector 2, the revised major-accident assessment contains an internal consequence-rating inconsistency capable of changing the Applicant’s own risk classification from green/low to amber/medium.

Further examination of NISA’s revised tables also identifies specific questions concerning Rockabill terns, SPA-wide in-combination screening, the revised seabed footprint and foundation grout, Bottlenose Dolphin population denominators, the treatment of concurrent Phase 1 construction, and the adequacy of decommissioning and financial security. These matters are addressed within the existing principal and supporting issues, rather than being advanced as separate unsupported objections.

These issues are developed below as four principal issues, one cross-cutting Phase 1 issue and additional supporting matters. Blue Ireland’s requested outcome is not that every remaining uncertainty must be eliminated. It is that the Commission should resolve, before determination, those uncertainties that bear upon the existence, magnitude, spatial extent or legal character of the environmental effect, and should not leave such matters to post-consent investigation where the consent conclusion itself depends upon them.

Principal Issue 1: Marine Physical Processes, Sediment Transport and Long-Term Morphodynamics

1.1 Overview

Blue Ireland acknowledges that the Significant Further Information materially expands the Applicant's marine geology, oceanography and physical-process evidence. Additional calibration and sensitivity work has been supplied; wind-wake effects have been considered; the Western Irish Sea Gyre is now expressly treated as a receptor; and the revised foundation design has removed several earlier dredging and seabed-levelling concerns. Blue Ireland does not therefore maintain that the physical-process assessment is generally unanswered.

The remaining concern is narrower. The Commission expressly requested several analyses directed to the temporal and spatial envelope of physical change: a defined series of extreme-event scenarios, operational suspended-sediment and deposition outputs, and a developed-versus-undeveloped long-term morphodynamic assessment extending through operation and decommissioning. Blue Ireland has not identified those analyses in the form requested.

These matters are environmentally important because Chapter 10 supplies the physical exposure term for later conclusions concerning benthic habitats, substrate-dependent fish habitat, prey resources, ornithology and the Natura assessment. The issue is therefore not simply whether additional modelling has been undertaken, but whether the modelling undertaken is capable of resolving the long-term environmental pathways identified by the Commission.

1.2 FIR 7(e) - the complete requested extreme-event range has not been demonstrated

FIR 7(e) required a coupled treatment of wind, wave, hydrodynamic and sediment processes and expressly identified extreme-event scenarios of 10%, 5%, 2%, 1%, 0.5% and 0.2% annual exceedance probability (AEP), together with joint tidal, surge and wave probabilities and climate-change considerations. ^[2]

NISA has responded with a substantial sensitivity-testing programme. The material identified by Blue Ireland describes an annual 50th-percentile condition and 1-year, 10-year and 50-year return-period events. The response itself associates the relevant return-period cases principally with approximately 100%, 10% and 2% AEP. For coupled hydrodynamic/wave sensitivity, four scenarios are described using a 1-in-50-year wave event, two wave directions and contrasting northerly and southerly flows.

That work is responsive in part and should be acknowledged. It does not, however, demonstrate the full event-frequency series specified by the Commission. In particular, Blue Ireland has not identified equivalent modelled 5%, 1%, 0.5% and 0.2% AEP cases in the Further Information reviewed.

The distinction matters because the requested series was not merely a request to model one severe event. It was directed to testing the sensitivity and non-linearity of the coupled system over a defined range of event frequencies. The Commission should therefore identify where the complete requested forcing envelope has been assessed, or require that information before relying on the conclusion that extreme-event effects are fully bounded.

1.3 FIR 7(p)(ii) - operational suspended-sediment and deposition outputs were expressly requested but not modelled

The distinction between construction and operation is particularly clear under FIR 7(p). The Commission separately requested suspended-sediment concentration and sediment-deposition heatmaps for the entire operational campaign, analogous to the construction outputs. ^[2]

NISA has provided construction-phase sediment modelling. Blue Ireland therefore does not contend that construction suspended-sediment and deposition effects have been omitted.

For operation, however, the Applicant states that sediment deposition depths and suspended-sediment concentrations are modelled for the construction phase rather than the operational phase, explaining that operational disturbance is expected to be less frequent and smaller in scale.

That explanation is a reason for considering the operational effect smaller; it is not the operational-campaign analysis requested by the Commission. The request expressly distinguished the two phases and nevertheless sought operational outputs.

This is important because operational sediment disturbance can arise repeatedly from the developed seabed configuration and from intervention, maintenance and scour-related processes across the project lifetime. Even where each individual event is smaller than construction, frequency, spatial recurrence and interaction with the altered hydrodynamic environment may be relevant to long-term substrate condition. Blue Ireland therefore submits that the Commission should identify where the requested operational SSC and deposition footprint has been demonstrated.

1.4 FIR 7(q) - the requested 40+ year developed-versus-undeveloped morphodynamic assessment is not demonstrated

FIR 7(q) is the central physical-process residual. The Commission stated that the longer-term morphodynamic impact of the development, including cable armouring, scour protection and wind-turbine foundations, had not been assessed. It required coupled wind, wave, hydrodynamic and sediment-transport modelling over longer timescales encompassing operation and decommissioning - more than 40 years - with comparison against the equivalent non-developed scenario. ^[2]

NISA refers to Appendix A10.3 as addressing this matter. That appendix contains meaningful additional work: coupled wind/wave sensitivity modelling, coupled wave/hydrodynamic testing, selected return-period conditions, alternative wave directions and longshore sediment-transport calculations at selected locations.

Blue Ireland has not, however, identified a 40+ year morphodynamic simulation in which seabed and/or coastline evolution is modelled through time for a developed case and directly compared with the corresponding undeveloped trajectory.

The distinction is substantive. The sensitivity work principally asks whether selected forcing conditions produce small changes in waves, currents or sediment transport and then infers that long-term morphological change should therefore also be small. The analysis requested by the Commission is a different exercise: the altered structures and seabed protections

affect hydrodynamics and sediment transport; erosion, entrainment, deposition and remobilisation alter the seabed; those changes in turn alter subsequent hydrodynamics and sediment transport; and the resulting morphology evolves through decades. The developed trajectory must then be compared with the morphology that would have evolved without the project.

Short-duration sensitivity simulations may be relevant evidence within such an assessment. They are not obviously a substitute for the coupled long-term morphodynamic comparison expressly requested.

1.5 FIR 7(r) - dependent ecological conclusions cannot resolve modelling that was not undertaken

FIR 7(r) required the consequences of the additional physical-process work to be propagated into the dependent benthic, fish and shellfish, marine-mammal, ornithological and Natura assessments where the significance of effects changed. ^[2]

NISA states that the additional physical-process modelling has been considered in the dependent chapters and in the SISAA/NIS. Blue Ireland accepts that the results of modelling actually undertaken can properly be propagated in this way.

The logical difficulty is different where an analysis expressly requested by the Commission has not itself been demonstrated. Propagation of the completed modelling cannot establish the consequences of the omitted operational or long-term analysis.

Put shortly: a conclusion that the modelling which was undertaken did not increase the predicted significance of an effect does not answer what the requested but unperformed analysis might have shown. This is why the residual physical-process issues matter beyond Chapter 10.

1.6 Benthic ecology - the OSPAR receptor has now been recognised, but the 2022 and 2025 baselines require reconciliation

The Commission specifically identified the extensive 2022 classification of "Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud", associated with the OSPAR threatened and/or declining habitat "Sea-pen and Burrowing Megafauna Communities", and required the Applicant to confirm and map its presence as a valued ecological receptor. ^[3]

NISA has responded. The revised assessment records the *Maxmuelleria* biotope at 10 of the 11 array sampling sites in 2022, maps that distribution and carries the receptor into the assessment as a high-sensitivity receptor. Blue Ireland therefore does not maintain that the OSPAR habitat has been ignored.

The updated 2025 validation survey, however, produces a materially different classification across substantially the same sampling network. Ten of the 11 array sites are instead assigned to "*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud" (MD6217), a biotope which NISA notes was not recorded in 2022, although it considers the underlying fauna broadly similar.

Blue Ireland does not submit that the 2025 classification disproves the 2022 record. Benthic assemblages can vary and biotope assignment can change with sampling and classification. The assessment question is instead which spatial and ecological baseline is being relied upon

to establish the extent and condition of the high-sensitivity OSPAR receptor, and how the materially different classifications have been reconciled.

That reconciliation is particularly important because the extent of the receptor is the denominator against which permanent conversion and ecological significance should be evaluated.

1.7 Permanent habitat loss - the low-magnitude conclusion should be demonstrated for the high-sensitivity OSPAR receptor itself

The Commission required NISA to reconsider the magnitude of permanent habitat loss specifically for the Maxmuelleria/OSPAR receptor. NISA has made a real change: the magnitude has been increased from negligible to low, producing a moderate effect for a high-sensitivity receptor which the Applicant concludes is not significant in EIA terms. ^[3]

The revised assessment identifies approximately 0.58 km² of permanent or long-term habitat change for Option 1 and expresses that footprint as approximately 0.46% of the combined array area and export cable corridor, together with reasoning that the affected habitats and biotopes occur widely in the wider region.

The remaining issue is the denominator. The Commission was not simply asking what proportion of the overall development study area would be permanently occupied. It was asking about the magnitude of loss to the particular high-sensitivity OSPAR receptor.

Blue Ireland has not identified a spatial calculation which overlays the permanent turbine, scour-protection, OSP, rock-berm and cable-protection footprint against the mapped extent of the Maxmuelleria receptor and quantifies the area and proportion of that receptor which would be permanently converted. That is material because the 2022 survey identified the relevant biotope at 10 of 11 array sites, while most of the permanent infrastructure footprint lies within the array area.

The Commission should therefore be satisfied that the "low" magnitude classification has been derived from the ecological extent of the receptor actually identified by FIR 9(b), rather than primarily from permanent footprint divided by the combined array and cable-corridor area.

1.8 Sandeel substrate demonstrates why long-term sediment evolution is an ecological, not merely modelling, issue

The ecological significance of the unresolved long-term physical-process assessment is illustrated particularly clearly by the Applicant's revised sandeel evidence. ^[4]

NISA records that sandeels have strong site fidelity and specific substrate requirements through juvenile and adult life and assigns low tolerance to long-term sedimentary habitat loss. Yet the project-specific substrate evidence changes materially between survey years.

The 2023 survey identified areas of the export cable corridor as Suitable or Sub-Prime sandeel substrate. In 2025, the sampled corridor was classified as largely unsuitable, with the Applicant attributing the difference to the high mobility of the seabed and changes in sediment composition. NISA nevertheless retains the 2023 evidence in the assessment and recognises that some potentially suitable spawning habitat may be exposed to increased suspended sediment and smothering during construction.

Blue Ireland does not submit that NISA has ignored the 2023 substrate or that contemporary sandeel occurrence proves spawning. The importance of the evidence is different: NISA's own surveys show that the ecological suitability of the seabed can change materially over a period of only two years.

That makes the missing long-term morphodynamic pathway environmentally consequential. The relevant chain is: project structures, scour protection and cable protection alter local hydrodynamics and sediment transport; seabed composition changes through erosion, deposition and remobilisation; those changes determine whether sand, gravel, mud or fines occupy particular areas; substrate condition determines sandeel spawning and burrowing suitability; and that habitat function has consequences for fish and wider prey/ecosystem relationships.

Where the empirical baseline itself demonstrates rapid substrate variability, a conclusion about habitat condition over a multi-decadal operational period requires a defensible account of the developed and undeveloped sediment trajectories. The 2023-2025 change therefore strengthens, rather than weakens, the need to resolve FIR 7(q).

1.8A Foundation redesign: permanent footprint, Nephrops habitat and grout

The switch to suction-bucket jackets substantially reduces underwater noise, but it also changes the permanent and temporary seabed disturbance envelope. Revised Chapters 6, 12 and 13 contain figures for the suction-bucket foundations, scour protection and habitat loss which need to be reconciled. For Option 1, the revised design tables identify approximately 526,898 m² of permanent habitat loss, compared with approximately 276,296 m² in the original design. The further information also gives differing option-specific footprint figures in the explanatory text and tables. This is material where the Commission has expressly questioned the magnitude of permanent loss of high-sensitivity sea-pen and burrowing-megafauna habitat. [27]

A particular point requiring checking is the Option 2 scour-protection figure in Chapter 6, Table A6.6. One entry gives 142,503 m², while revised Chapters 12 and 13 use approximately 264,004 m² for WTG scour protection. These figures cannot both represent the complete equivalent foundation footprint without a further explanation of what is included in each calculation. Blue Ireland requests a reconciled design-envelope table for each option showing foundation occupation, rock armour, cable protection and other permanent habitat loss, both separately and in aggregate. [27]

The benthic and fish assessment should also quantify the local loss of Nephrops habitat rather than rely exclusively on the percentage of the wider Western Irish Sea Mud Belt affected. Revised Chapter 13 identifies Nephrops burrow evidence across the sampled array stations. The consequence for burrow density, productive fishing ground and any combination with the other Phase 1 projects should be explained, particularly where the loss is concentrated in a habitat of locally high ecological and fisheries value. [27]

Revised Chapter 6 also specifies substantial under-lid grout requirements for suction-bucket installation, including approximately 173,180 m³ for the 49-turbine option, while the final grout composition remains a detailed-design matter. The revised fish assessment recognises the potential for seawater abstraction during grout mixing to injure pelagic fish and shellfish

eggs and larvae. The Commission should establish the maximum seawater abstraction volume and rate, intake screening, seasonal timing, grout constituents, and the treatment of unsuccessful foundation placements or relocation before concluding that all consequential effects of the revised construction methodology have been assessed. [27]

1.8B Fish-noise modelling: stationary receptors, sensitive life stages and retained sound sources

A further receptor-level issue arises when the fish and shellfish conclusions are read with the revised construction methodology. The earlier NISA underwater-noise modelling calculated cumulative fish exposure using both fleeing and stationary receptors. It acknowledged that the response to underwater sound may differ between species and that some fish may remain in or near the affected area. It also recognised eggs and larvae as a distinct exposure category. Blue Ireland does not suggest that stationary fish calculations were never undertaken, or that the former impact-piling scenarios remain part of the revised development. [46]

The question for the revised project is whether fish and shellfish effects from the sound-producing activities which remain, including drilled OSP pin-pile installation where selected, relevant geophysical work and high-order UXO clearance, have been interpreted using biologically justified receptor behaviour for the particular species and life stages concerned. Fish eggs, larvae and attached or substrate-associated developmental stages cannot simply be assumed to swim away from the source at the speed attributed to mobile adult fish. For fish and invertebrates detecting particle motion, reliance upon sound-pressure estimates alone also requires an explanation of whether it captures the biologically relevant exposure. [46]

The Commission should therefore be satisfied that the revised fish and shellfish assessment carries the appropriate stationary or non-escaping exposure case, together with relevant particle-motion and life-stage considerations, through to the ecological significance conclusion for each retained source. This request should not be read as reintroducing the removed WTG impact-piling scenario.

1.9 Combined consequence for EIA, ecosystem function and Natura assessment

The remaining physical-process and ecological issues are linked.

The requested extreme-event envelope is incomplete; operational-campaign SSC/deposition outputs have not been identified; and a 40+ year developed-versus-undeveloped morphodynamic trajectory has not been demonstrated. This leaves uncertainty as to the long-term physical exposure and, in turn, the dependent habitat, fish, prey, bird and designated-site conclusions.

The 2022/2025 benthic classifications and the 2023/2025 sandeel-substrate changes show why those downstream questions are not hypothetical. Both demonstrate that ecological receptor condition can depend upon the spatial and temporal state of a mobile seabed.

Accordingly, Blue Ireland submits that the Commission should not treat the absence of a predicted significant effect in the modelling already undertaken as proof that the omitted operational and long-term analyses would reach the same result. The environmental

consequences of those analyses need to be known before they can be propagated into the dependent assessments.

1.10 Matters to be resolved before the physical-process and dependent ecological conclusions are relied upon

Blue Ireland therefore submits that the Commission should require or establish:

1. where the complete 10%, 5%, 2%, 1%, 0.5% and 0.2% AEP extreme-event series requested under FIR 7(e) has been modelled, including the relevant joint wave, surge and tidal assumptions and climate-change treatment;
2. where the operational-campaign suspended-sediment and deposition heatmaps requested under FIR 7(p)(ii) have been provided, or why an equivalent quantitative assessment is sufficient;
3. whether Appendix A10.3 contains a true long-term developed-versus-undeveloped coupled morphodynamic assessment extending through operation and decommissioning, and, if not, how FIR 7(q) is otherwise satisfied;
4. how the consequences of any additional operational and long-term physical-process modelling are propagated into benthic ecology, fish and shellfish, prey, ornithology and Natura conclusions;
5. how the materially different 2022 and 2025 benthic biotope classifications have been reconciled to define the current spatial extent and condition of the Maxmuelleria-linked OSPAR receptor;
6. the area and proportion of that high-sensitivity receptor directly and permanently converted by the project, rather than only the proportion of the overall array and cable-corridor study area affected; and
7. how the demonstrated temporal variability of sandeel substrate has been incorporated into the assessment of long-term substrate-dependent habitat function.

1.11 Conclusion

NISA has supplied substantial additional physical-process and benthic evidence and Blue Ireland does not suggest that the Further Information leaves those topics generally unassessed. The residual concern is more precise: several analyses expressly requested by the Commission have not been demonstrated in the form requested, and those analyses concern the very processes by which a mobile sedimentary environment may evolve through the lifetime of the development.

The sandeel and benthic evidence gives that concern a direct ecological consequence. Project-specific surveys already demonstrate material temporal changes in substrate suitability and biotope classification. The Commission should therefore be satisfied that the long-term physical environment against which the ecological conclusions are made has itself been adequately modelled before relying upon those conclusions for EIA or Appropriate Assessment purposes.

Principal Issue 2: Offshore Ornithology, the North-West Irish Sea SPA and Site Selection

2.1 Overview

Blue Ireland acknowledges that the Applicant has undertaken substantial further ornithological work in response to the Commission's Further Information Request. The revised material includes additional Digital Aerial Survey ("DAS") work, revised migratory-bird assessment, updated displacement modelling, revised population modelling and expanded cumulative assessment. Several of the matters originally raised by the Commission have therefore been materially addressed and Blue Ireland does not seek to reopen issues merely because they appeared in the Further Information Request.

Four matters nevertheless remain material to the Article 6(3) and site-selection conclusions:

1. the adequacy of the empirical migratory-bird evidence supplied in place of the site-specific radar or similar evidence requested by the Commission;
2. the treatment of July as wholly post-breeding for Common Guillemot, notwithstanding the Commission's requested March to July breeding-season assessment and the material consequences of that choice for SPA attribution and population viability analysis ("PVA");
3. the spatial and functional assessment of Red-throated Diver displacement within the North-West Irish Sea SPA, including the absence of a presently traceable updated species-specific in-combination displacement pathway; and
4. the assumption that birds displaced from the project area can redistribute elsewhere within the SPA without compromising habitat function or carrying capacity.

Those matters bear directly upon FIR 6 because the Applicant's justification for retaining the selected site notwithstanding its location within the North-West Irish Sea SPA relies substantially upon the proposition that Appropriate Assessment demonstrates that the development can proceed without adverse effect on site integrity.

2.2 Migratory birds: the alternative evidence does not yet demonstrate equivalence to the survey information requested by the Commission

FIR 8(a)(iv) arose from a specific evidential concern. The Commission recorded that the existing evidence provided insufficient spatially relevant field information during the principal spring and autumn migration periods and that the existing vantage-point information provided limited quantitative evidence concerning birds actually passing through the proposed array.^[5]

It therefore requested horizontal and vertical radar, "or similar", at the array during peak migration periods, directed towards obtaining quantitative site-specific passage information capable of informing collision assessment. Where radar was not used, the Commission expressly required a comprehensive justification for the alternative approach.

Blue Ireland does not submit that radar itself was mandatory. The Commission expressly permitted an equivalent method.

NISA has responded using a combination of migratory collision modelling, GIS-derived migration pathways, vantage-point observations, boat-based observations and passive acoustic monitoring. The response is substantive, but it must be tested against the information sought by the Commission.

In particular, the evidence needs to address spring and autumn passage through the proposed array.

2.2.1 The new field surveys principally cover autumn migration

Appendix A15.7 records new survey information from November 2024 and from approximately mid-September to mid-December 2025 and expressly identifies those surveys as covering the post-breeding/autumn migratory season.

Blue Ireland has not identified an equivalent project-specific spring migration survey programme capable of answering the corresponding part of the Commission's request.

That is significant because the Commission expressly identified both spring and autumn passage as evidential gaps.

2.2.2 Passive Acoustic Monitoring (PAM) does not provide several of the quantitative variables sought by the Commission

The Applicant's own survey documentation acknowledges important limitations in the acoustic data. For acoustically detected birds:

- abundance can only be estimated through professional judgement;
- flight direction cannot be determined;
- flight height cannot realistically be estimated; and
- some high-flying birds may not be detected.

The Applicant also states that the PAM information will not itself provide a data-informed assessment but instead supplies context for the modelled assessment.

Those limitations align closely with the variables the Commission wished to establish:

how many birds are passing, in which direction, at what height, and through which part of the array during peak migration.

Accordingly, Blue Ireland does not submit that the substitute methodology is valueless. The narrower issue is whether it has been demonstrated to be functionally equivalent to the spatially explicit empirical passage evidence requested by the Commission.

That equivalence is particularly difficult to establish for spring migration where the additional field programme itself appears principally to concern autumn passage.

2.2.3 Consequence for the collision assessment

Modelled migration routes and generic flight-height information can be scientifically useful. They do not necessarily determine the actual density, directional flow or vertical distribution of birds crossing this particular array during the relevant migration windows.

Where collision-risk modelling depends upon those parameters, the Commission should therefore identify expressly:

- what empirical site-specific information supports the spring-passage inputs;

- how passage direction through the proposed array has been established;
- how rotor-height exposure has been validated; and
- why the alternative dataset is considered equivalent to the radar or similar evidence originally requested.

Blue Ireland submits that this remains a material evidential residual rather than a simple disagreement over survey technology.

2.3 Common Guillemot: breeding-season definition and SPA attribution

The Common Guillemot issue is substantially stronger because NISA's own sensitivity modelling demonstrates that the disputed methodological choice materially affects the SPA-level result. ^[6]

The Commission expressly questioned NISA's use of an April to June breeding season and requested application of the Furness March to July period. It noted that evidence relied upon by NISA itself indicated breeding activity extending to approximately 10 July, while relevant aerial surveys had been undertaken on 5 July 2021 and 4 July 2022.

NISA has not ignored the Furness approach. It has commendably modelled it as a sensitivity.

The difficulty is that NISA continues to use April to June as its operative breeding season, treating the whole of July as post-breeding for its primary abundance, impact and SPA-apportionment assessment.

That choice is not environmentally neutral.

2.3.1 The July population may be mixed, but that does not establish that it is wholly non-breeding

NISA's evidence indicates that July contains a large mixed assemblage, including birds from numerous colonies and birds already engaged in post-breeding dispersal.

Blue Ireland accepts that this provides a reasonable scientific basis for rejecting the proposition that every July bird should automatically be apportioned as a breeding bird.

But that does not establish the converse:

every July bird is non-breeding and none remains connected to nearby breeding colonies.

That distinction is particularly important for the surveys on 4 and 5 July because the breeding information identified by the Commission extended to approximately 10 July.

The evidential problem is therefore not simply "Furness is right and NISA is wrong". It is that evidence that July contains a mixed post-breeding assemblage does not itself identify what proportion of early-July birds remains breeding-connected to nearby SPA populations.

Blue Ireland has not identified a quantitative separation of that component.

2.3.2 The seasonal classification materially determines whose birds are affected

This is consequential because breeding and non-breeding apportionment produce very different SPA attribution.

NISA's bespoke non-breeding methodology attributes approximately 10.56% to Lambay Island SPA and 0.78% to Ireland's Eye SPA. By contrast, its breeding-season theoretical colony-connectivity approach produces approximately a 93.8% Lambay weighting within the PFI.

Therefore, assigning an early-July bird to "breeding" or "non-breeding" does substantially more than move the same mortality between seasonal rows. It determines which protected SPA population receives the mortality attribution.

That is an Article 6(3) question.

2.3.3 NISA's own sensitivity assessment demonstrates material consequence

The difference is also reflected in breeding-season abundance. Within the PFI +2 km area, NISA's primary approach gives a breeding mean peak of approximately 988 birds, whereas the Furness March to July approach gives approximately 16,318 birds.

The PVA sensitivity similarly produces materially different results.

For Lambay Island SPA, under the high 60% displacement / 3% to 5% mortality project-alone scenario:

- NISA bio-season: CGR 0.999, CPS 0.964, approximately 3.557% lower population size after 35 years;
- Furness bio-season: CGR 0.995, CPS 0.838, approximately 16.185% lower.

In combination:

- NISA bio-season: CGR 0.991, CPS 0.714, approximately 28.638% lower;
- Furness bio-season: CGR 0.987, CPS 0.620, approximately 38.048% lower.

For Ireland's Eye SPA, the high project-alone case changes from approximately 2.708% lower population size under NISA's season to approximately 8.041% lower under Furness.

For the North-West Irish Sea SPA citation population, the difference is particularly pronounced:

- NISA season: CGR 0.993, CPS 0.779, approximately 22.108% lower;
- Furness season: CGR 0.986, CPS 0.602, approximately 39.789% lower.

Blue Ireland does not submit that any one of those figures automatically proves adverse effect on site integrity. NISA itself treats PVA outputs as requiring interpretation against population trend and ecological context. They do, however, demonstrate that the disputed bio-season is material to the result and cannot be dismissed as an inconsequential methodological preference.

2.3.4 The Article 6(3) chain must explicitly resolve the Furness sensitivity

The final Natura Impact Statement ("NIS") nevertheless reaches a conclusion of no adverse effect on site integrity ("no-AEol") for Guillemot.

The Commission must address the less favourable March-to-July sensitivity in reaching its integrity conclusion.

If those results are not adopted, the assessment should explain the scientific reasons why they do not alter the site-integrity conclusion.

The assessment should make each step explicit.

That includes the breeding-season definition, affected birds, SPA attribution, mortality assumptions, PVA results and the relevant conservation objectives.

The residual concern is that the assessment appears to model the Furness period as a sensitivity while retaining NISA's April to June / July to March division as the operative apportionment framework before reaching the final no-AEoI conclusion.

Blue Ireland submits that the Commission should therefore determine expressly whether the integrity conclusion remains valid under the March to July treatment it specifically requested.

2.4 Red-throated Diver: the assessment has improved materially, but the Article 6(3) question is spatial and functional

NISA has materially strengthened its Red-throated Diver assessment. It has undertaken a new 12-month DAS programme across the North-West Irish Sea SPA; the species is now screened into the array assessment; and quantitative displacement assessment has been extended from the original 4 km envelope to 10 km. ^[7]

Blue Ireland therefore does not maintain that RTD displacement from the array has simply been omitted.

The residual issue concerns whether the revised assessment answers the conservation-objective question for a non-breeding Special Conservation Interest ("SCI") whose protected ecological attributes are spatial and functional.

2.4.1 The contemporary lower density does not itself demonstrate loss of historic habitat function

The contemporary DAS records substantially lower local RTD use than the earlier HiDef/Gormanstown material incorporated into the SPA's conservation-objective evidence.

That difference is relevant and should be acknowledged. But a lower recent count does not itself establish that waters previously identified as important RTD habitat have ceased to perform that ecological function or that temporary or long-term displacement from them has become inconsequential.

That distinction matters because the conservation objective is not simply a requirement to maintain a regional headcount.

2.4.2 The 10 km boundary requires justification as the complete ecological envelope

The revised quantitative assessment terminates at 10 km. However, the evidence discussed in NISA's own material includes displacement beyond that distance, while the Joint SNCB formulation relied upon is expressed in terms of displacement extending at least, and potentially beyond, 10 km.

Blue Ireland does not suggest that an infinite buffer is required. The point is instead that a quantitative assessment boundary must be demonstrated to encompass the ecologically material effect. If the evidence recognises potential effects beyond 10 km, the Commission should determine whether those effects become immaterial beyond 10 km, have been captured qualitatively elsewhere, or whether the 10 km boundary truncates part of the displacement pathway.

2.4.3 Mortality expressed against a regional denominator does not answer all SPA conservation-objective attributes

NISA's principal significance calculation converts predicted displacement into approximately 2.11 annual mortalities and compares this against regional and biogeographic population mortality.

That is relevant population information. It does not by itself answer whether the SPA continues to satisfy conservation-objective attributes concerning spatial distribution, availability of suitable habitat, forage resources, intensity, frequency and duration of disturbance, and connectivity.

For Red-throated Diver, mortality estimates need to be read alongside the spatial effects of displacement.

The assessment should identify the waters affected by displacement, the expected redistribution of birds and whether suitable, sufficiently productive receiving habitat is available.

The assessment should therefore demonstrate spatially where displaced RTDs are expected to redistribute and why the receiving habitat provides sufficient functionally suitable area and forage throughout the operational period.

2.5 Red-throated Diver: the updated in-combination pathway is not presently traceable

This project-alone issue becomes stronger in combination. NISA now uses a PFI +10 km exposure envelope for the project-alone RTD assessment. ^[7,8]

However, Blue Ireland has not identified an equivalent updated species-specific RTD cumulative-displacement calculation in the revised Chapter 15/Chapter 38 material. The updated cumulative disturbance/displacement matrices expressly address several other seabird species, including Guillemot, Razorbill, Puffin, Manx Shearwater, Gannet and Kittiwake, but RTD is not identified in an equivalent quantitative pathway.

That is difficult to reconcile with the fact that the revised NIS nevertheless reaches an express in-combination no-AEoI conclusion for RTD.

The concern is therefore one of traceability:

The Commission should be able to identify the quantitative or spatial analysis connecting the revised NISA RTD exposure evidence with the total in-combination effect from NISA, Dublin Array, Oriel and the other relevant developments on the same SPA population and functional habitat.

That question is particularly important because earlier Dublin Array cumulative work relied upon an earlier NISA RTD input, whereas NISA's new FI now presents materially different contemporary abundance and spatial-exposure information.

Before reaching the Article 6(3) conclusion, the Commission should be able to identify clearly the revised NISA contribution, each other relevant project's contribution, the common spatial displacement envelope, the amount and location of functional SPA habitat affected, and the resulting combined conservation-objective consequence.

A final no-AEoI matrix is not a substitute for an identifiable scientific pathway to that conclusion.

2.6 Common Guillemot displacement: redistribution within a large SPA is not itself proof of ecological capacity

A separate issue arises from the treatment of Guillemot displacement within the North-West Irish Sea SPA. ^[6,7]

The broad proposition that displaced birds may remain elsewhere within a very large SPA can be relevant, but it is not sufficient by itself.

NISA should demonstrate, using spatially explicit ecological evidence, that the parts of the SPA expected to receive displaced Guillemots have sufficient habitat and prey capacity at the relevant times to absorb those birds without compromising the conservation objectives.

That distinction matters because suitable habitat is not necessarily distributed uniformly throughout the SPA. A calculation showing that the physically occupied wind-farm footprint represents only a small percentage of the total designated area does not establish that an equivalent proportion of ecological function is lost.

Birds may aggregate preferentially where prey availability, bathymetry, hydrography or other ecological conditions are favourable.

Likewise, the fact that birds are mobile does not demonstrate that alternative habitat exists in sufficient quantity, is ecologically equivalent, has sufficient prey, is not itself already occupied at or near carrying capacity, or is not subject to overlapping displacement from other developments.

For the SPA integrity conclusion, the redistribution assumption should therefore be supported by the ecology of the receiving habitat rather than merely by the total area remaining available.

2.7 Relationship with the Phase 1 cumulative assessment

Blue Ireland has addressed the wider inconsistency in Phase 1 kittiwake collision and displacement assessment separately in the cross-cutting section. ^[8]

For Principal Issue 2, the important point is that the same general requirement applies to Guillemot and RTD: the Commission must be able to identify a common, current, species-specific route from project-level effects to the combined consequence upon the relevant protected population and its habitat.

The revised cumulative effects assessment (“CEA”) has substantially responded to the Commission’s cumulative request: the Phase 1 projects are treated as Tier 1 and seasonal cumulative assessment is generally provided.

The remaining issues are narrower: the disputed Guillemot bio-season propagates into abundance, mortality and PVA; the exact versions of revised Phase 1 FI evidence incorporated into the CEA require verification; and, most importantly, the updated RTD cumulative displacement pathway remains untraceable in the material identified by Blue Ireland.

The Commission should therefore avoid treating the mere presence of a project in a cumulative-effects matrix as demonstrating that the revised species-specific ecological pathway has been assessed.

2.7A Designated Manx Seabird Sites: regional population assessment is not a substitute for receptor-specific assessment

FIR 18 required the Applicant to address the Isle of Man Territorial Sea Committee concerns regarding potential effects upon designated Manx sites. Blue Ireland acknowledges that the revised ornithological material considers connectivity and regional population context. The residual issue is narrower: NISA itself records that the particular Manx designated sites identified by the consultation response have not been specifically assessed as receptor populations. ^[10]

A comparison showing that a Manx breeding population forms only a small component of a wider regional or biogeographic population does not, without the further calculation, identify the magnitude or significance of the apportioned NISA effect relative to the designated-site population itself. Blue Ireland does not suggest that a site-specific denominator will necessarily demonstrate a significant effect. The point is one of traceability: the Commission should be able to follow the pathway from the designated site and species, through connectivity and apportioned project effect, to the receptor-specific transboundary EIA conclusion.

The Isle of Man sites are not Natura 2000 sites and Blue Ireland does not seek to apply the Article 6(3) test to them. The issue arises under transboundary EIA and from the Commission's express requirement to address the designated Manx receptors identified in consultation. The final transboundary conclusion should therefore not rely solely upon the site population's small contribution to a much larger regional denominator.

2.7B Rockabill tern populations: revised collision predictions and conservation objectives

The revised ornithological material raises an additional concern for Rockabill SPA which is not confined to the matters previously identified for Guillemot and Red-throated Diver. Rockabill supports breeding Roseate, Common and Arctic Terns, and its conservation objectives include breeding population and productivity, availability of prey and barriers to connectivity. The fact that the turbine boundary lies outside the SPA does not, by itself, exclude impacts on the protected birds as they move between the colony and feeding grounds outside the designated boundary. ^[26]

The revised Chapter 15 assessment predicts approximately 1.2 Roseate Tern collision mortalities annually for NISA, while its cumulative Table A15.91 reports approximately 1.4 annually once published impacts from other projects are included. Appendix A15.1 records a pronounced increase in the estimated Roseate Tern occurrence during the 2025 surveys, including an August estimate of 308 within the array. The Commission should establish how that interannual variation has been represented in the collision-risk model, whether the use of a multi-year mean peak is precautionary for a colony which may use the array much more intensively in some years, and how the uncertainty is treated in the Rockabill-specific integrity conclusion. ^[26]

Further reconciliation is required of the flight-height evidence used for Roseate Tern and the distinction between adults, juveniles and other non-breeding birds. Where Common Tern flight-height data are used as a proxy for Roseate Tern, the suitability and sensitivity of that substitution should be demonstrated. Similarly, where predicted collisions are reduced to a breeding-adult component, the ecological consequences for non-breeding birds or fledglings attributable to Rockabill should not disappear without explanation. The breeding-colony assessment and the wider population assessment address related but different questions. [26]

The Rockabill conservation objectives require consideration of whether the wind farm, individually and in combination, obstructs or lengthens foraging movements, affects chick provisioning or reduces available prey biomass. The tracking evidence of foraging beyond the SPA boundary should be considered together with the revised distribution of turbines and the predicted changes to sandeel habitat. Blue Ireland requests an explicit, receptor-specific conclusion for all three Rockabill tern species, with collision, displacement, barrier effects and prey-mediated effects considered against the respective conservation objectives. [26]

2.7C Kittiwake population projections for the North-West Irish Sea SPA

The North-West Irish Sea SPA kittiwake assessment merits closer treatment than a comparison of annual growth rates alone. Table A5.30 of the NIS Addendum presents population-model outcomes using different population baselines. Those outcomes should be reported alongside the cumulative growth-rate results so that the Commission can identify the projected difference in population size over the 35-year model period. The submitted material has been identified as giving materially different projected population reductions, of approximately 15% and 23% under different population denominators, from NISA collision mortality alone. Those figures require confirmation and express reconciliation with the SPA conservation objective to restore the species to favourable condition. [28]

A small annual change in counterfactual growth rate is not necessarily a small cumulative change in the population after several decades. The Commission should state which demographic endpoint it considers determinative, why, and whether the combined collision and displacement scenario for the same protected population has been tested under the relevant precautionary assumptions. This adds a site-specific reason for the cross-project reconciliation requested in Cross-Cutting Issue A. [28]

2.8 Consequence for FIR 6: Site Selection

This brings the ornithological issues directly back to FIR 6. [9]

The Commission expressly noted that NISA lies within the North-West Irish Sea cSPA; avoidance of designated sites is normally an important site-selection consideration; Rockabill SPA lies approximately 150 m from the array; and numerous other SPAs and SACs occur within the wider ecological envelope. It therefore required NISA to revisit and justify its site-selection reasoning.

The Applicant's response is substantive. It argues, in essence, that SPA designation changes one site-selection criterion but does not automatically render the site unsuitable; that the design has been reduced; that the permanent physical footprint represents approximately

0.02% of the cSPA; and, critically, that Appropriate Assessment demonstrates that the development can proceed without adverse effect on site integrity.

Blue Ireland does not submit that SPA designation creates an automatic legal prohibition upon development.

However, there are two distinct questions:

The first question is whether the development can satisfy Article 6(3) at this location.

The second is whether this location was appropriately selected or retained once the SPA designation and the available alternatives were taken into account.

Those questions overlap, but they are not identical. Likewise, a 0.02% physical footprint is not necessarily an ecologically meaningful measure for an SPA designated for highly mobile birds where the principal effects include displacement, barrier effects, collision, functional habitat loss, redistribution, and prey-related effects.

If the Applicant relies heavily upon the no-AEol conclusion as justification for retaining the site, then that Article 6(3) conclusion must itself be especially robust.

The unresolved Guillemot and RTD matters therefore have a direct site-selection consequence. For Guillemot, the Commission expressly disputed the breeding-season treatment and NISA's own sensitivity analysis demonstrates materially different SPA-level population outcomes. For RTD, the assessment raises unresolved questions concerning functional habitat, the 10 km boundary and the quantitative in-combination pathway. For migratory birds, the alternative evidence has not yet been demonstrated to provide the spring/autumn quantitative passage information the Commission sought.

Those matters do not themselves prove that the site is incapable of development. They do mean that the no-AEol proposition cannot simply be assumed in order to answer the antecedent question of whether retaining a project inside the SPA remained the environmentally appropriate choice.

2.8A Avoidance and reasonable scale or layout alternatives

FIR 6 should also be considered against the avoidance hierarchy in the National Marine Planning Framework and the requirement to describe the reasonable alternatives studied under the EIA Directive. In its further observations, the Applicant explains the weight it gave to SPA avoidance among the site-selection criteria, but avoidance of sensitive foraging areas should not be treated merely as a matter of development risk or consenting cost. The Commission should establish whether practicable changes to the layout and scale would materially reduce exposure of Rockabill terns and other SPA species, independently of whether the submitted design can satisfy the Article 6(3) test. [29]

The distinction between the proposed 700 MW application envelope and the 500 MW figure associated with the project's earlier grid and support-scheme arrangements provides one identifiable reduced-scale scenario for consideration. Blue Ireland does not suggest that the support contract creates a statutory 500 MW cap, nor that a reduction in capacity would necessarily translate into a particular number of turbines removed. The point is whether a reduced configuration, including the removal or relocation of the turbines closest to Rockabill,

has been examined as a reasonable alternative and whether its comparative ecological effect is available to inform the planning and EIA determination. [29]

Earlier Maritime Area Consent or support-scheme decisions do not relieve the Commission of its current duties under Article 6(3). Conversely, the SPA designation does not impose an automatic prohibition on renewable development. The issue is whether a reasoned alternative-site, scale and layout comparison has been supplied, and whether the final chosen configuration can be authorised without adverse effect on European-site integrity. [29]

2.9 Article 6(3): the final conclusion must resolve the scientific uncertainty rather than merely record it

Blue Ireland's objection is therefore not a general contention that NISA's ornithological assessment is inadequate. Much of it has been substantially improved.

The narrower Article 6(3) concern is that several matters capable of materially altering the SPA-level outcome remain unresolved or insufficiently traceable:

- Guillemot: the Commission-requested March to July breeding season materially changes abundance, SPA attribution and PVA, but remains a sensitivity rather than the operative assessment framework.
- RTD: the conservation-objective question concerns spatial and functional habitat, not mortality against a broad regional population alone; the project-alone assessment terminates at 10 km while evidence recognises effects potentially beyond that distance.
- RTD in combination: the revised species-specific cumulative displacement pathway corresponding to the new PFI +10 km assessment has not presently been identified.
- Migratory birds: the alternative survey programme does not obviously provide equivalent project-specific spring and autumn passage rate, direction and rotor-height information.
- Guillemot redistribution: the assumption that displaced birds can be accommodated elsewhere within the SPA has not been demonstrated through spatially explicit receiving-habitat and prey-capacity evidence.

Under Article 6(3), these matters are material because the competent authority may authorise the project only where the appropriate assessment contains complete, precise and definitive findings capable of dispelling all reasonable scientific doubt as to effects on the site's conservation objectives. [25]

Where an Applicant has itself modelled a materially less favourable scientifically plausible sensitivity, the issue cannot be resolved merely by preferring another scenario without explaining why the less favourable outcome can safely be excluded for the purposes of the integrity determination. [25]

2.10 Matters Blue Ireland submits should be resolved before the ornithological no-AEol conclusion is relied upon

1. Migratory birds: whether the evidence supplied in place of radar provides equivalent project-specific quantitative spring and autumn passage, direction and flight-height information through the array;
2. Guillemot July attribution: what proportion of the early-July assemblage remains breeding-connected to Lambay Island SPA, Ireland's Eye SPA or other relevant colonies;

3. Furness sensitivity: whether the no-AEoI conclusion remains established under the March to July breeding season expressly requested by the Commission;
4. Guillemot PVA: why the materially less favourable Furness PVA outputs can be excluded or treated as non-determinative for the integrity conclusion;
5. RTD displacement envelope: whether 10 km captures the complete ecologically material displacement effect and, if not, how effects beyond that boundary are treated;
6. RTD functional habitat: where displaced birds are expected to redistribute and whether sufficient functionally equivalent habitat and prey remain available;
7. RTD in combination: where the updated species-specific cumulative assessment using the revised NISA evidence and the effects of the other Phase 1 projects is set out;
8. Guillemot receiving habitat: whether the parts of the North-West Irish Sea SPA relied upon as receiving habitat possess sufficient ecological capacity to accommodate displaced birds;
9. CEA currency: which versions of the Oriel, Arklow, Codling and Dublin Array evidence were imported into each relevant ornithological cumulative calculation; and
10. FIR 6: whether the site-selection conclusion remains justified once those unresolved SPA-level uncertainties are taken into account.

2.11 Conclusion

The central issue is not that NISA has failed to undertake ornithological assessment. It plainly has not.

The difficulty is that the remaining uncertainties concern precisely the variables which determine whose protected birds are affected, where protected habitat remains available, how displacement is distributed across the SPA, and what population consequence follows.

The Guillemot sensitivity shows that those choices can materially alter the result. The RTD assessment shows why a broad regional population denominator cannot substitute for assessment of spatial and functional SPA conservation objectives. The migratory-bird evidence raises a continuing question as to whether the Commission's requested site-specific passage information has actually been obtained.

Because NISA's site-selection response itself relies substantially upon the proposition that the project can be retained within the North-West Irish Sea SPA without adverse effect on site integrity, these unresolved ornithological matters are also material to FIR 6.

Principal Issue 3: Marine Mammals: Temporary Threshold Shift, Sequential Exposure, High-Order UXO, Operational Noise and Strict Species Protection

3.1 Overview

Blue Ireland acknowledges the material reduction in underwater-noise risk achieved by the Applicant's redesign of the proposed development. Impact pile-driving for the wind-turbine-generator foundations has been removed and the WTG foundations are now proposed as suction-bucket jackets. This substantially removes what had been the dominant repeated impulsive-noise pathway in the original application. The Offshore Substation Platform nevertheless retains an option for drilled pin piles, and construction noise associated with drilling therefore remains within the project envelope if that option is selected.

Accordingly, Blue Ireland does not maintain the objections previously directed at the very large impact-piling PTS and TTS contours as though that construction method remained proposed. The remaining marine-mammal issues are narrower, but in Blue Ireland's submission they remain material. They concern the Applicant's treatment of Temporary Threshold Shift ("TTS"), cumulative and sequential auditory exposure, the distinction between injury avoidance and disturbance, high-order UXO clearance, temporal mitigation, the functional ecological baseline for cetaceans, cumulative operational turbine noise, and the consequences of those matters for strict species protection and the Rockabill to Dalkey Island SAC.

These issues should not be collapsed into a single question of whether Permanent Threshold Shift ("PTS") is expected to occur. PTS, TTS, behavioural disturbance, interference with biologically important behaviour, effects upon SAC conservation objectives, and effects upon favourable conservation status are different environmental and legal endpoints.

3.2 FIR 10(o): TTS has been addressed, but the substantive question identified by the Commission remains unresolved

FIR 10(o) expressly required the Marine Mammal Mitigation Protocol ("MMMP") to address TTS because it may constitute injury under Irish legislation and guidance. The Applicant has responded substantively and has provided a dedicated Temporary Threshold Shift Position Statement and revised MMMP. TTS has therefore not been omitted. ^[11,12]

The difficulty is instead the conclusion reached. The revised MMMP states that, because the Developer does not regard the present TTS-onset criterion as an appropriate auditory-injury criterion, TTS is not considered as an injury criterion in the MMMP, whose primary injury-mitigation objective is instead directed towards PTS. ^[11]

That position is more categorical than the Applicant's own scientific discussion appears to justify. Appendix A14.4 acknowledges that there is no international legal or regulatory consensus as to the point at which TTS becomes biologically significant; it recognises different severities of TTS and acknowledges that higher-level TTS can involve physiological tissue effects and cellular damage and may potentially constitute auditory injury even where hearing thresholds subsequently recover. It nevertheless recommends concentrating the

injury assessment upon PTS because no generally accepted biologically meaningful TTS threshold presently exists. ^[11]

Blue Ireland does not submit that every measurable TTS event must automatically be treated as legal injury. That is not what the 2014 Irish guidance says. The relevant concern is the converse inference: the absence of an agreed threshold distinguishing minor TTS from biologically significant or physically injurious TTS does not establish that all TTS below PTS is non-injurious. ^[11,12]

That is particularly important because NISA's own original underwater-noise report describes TTS as a temporary reduction in hearing acuity which may arise either from high sound levels over short periods or lower sound levels over longer periods, recognises that temporary damage to sensory cells may occur, and notes that the duration of TTS depends upon the nature of the stimulus. ^[11]

The Commission should therefore be satisfied that the Applicant's decision to exclude TTS from the operative injury criterion does not effectively remove from the mitigation framework an uncertain intermediate range of auditory effects which the applicable Irish guidance and the Applicant's own evidence recognise may involve physical injury. ^[11,12]

3.3 Cumulative acoustic dose is not the same question as sequential auditory recovery

The distinction between sound-pressure level and cumulative sound exposure is also important. ^[11]

The original underwater-noise assessment uses an RMS source level of 169 dB re 1 µPa at 1 m for drilling, derived from datasets covering a range of drilling operations. That RMS figure is not itself a cumulative SEL value. For marine-mammal SELcum assessment, NISA integrates exposure over time and, for the generic continuous construction sources considered in that section, assumes continuous operation for 24 hours as a worst-case scenario. ^[11]

Blue Ireland therefore does not submit that cumulative sound exposure has been wholly ignored.

A 24-hour SELcum calculation does not, by itself, answer what happens where an animal experiences successive exposure periods before it has fully recovered from an earlier exposure.

The project may involve a sequence of underwater-noise sources rather than one isolated acoustic event. If the drilled-pin-pile OSP option is selected, the actual installation sequence may involve prolonged drilling over successive periods. That may in turn occur in the broader context of geophysical work, vessel activity, UXO clearance and other noise-producing operations.

Assessing each 24-hour acoustic dose is necessary but may not address repeated exposure.

The assessment should identify cumulative sound exposure within each relevant period.

It should then examine recovery between successive exposures.

This includes the possibility that residual threshold shift persists when the next exposure occurs, increasing the severity of TTS or the risk of PTS.

Blue Ireland has not identified an animal-history analysis which carries an existing threshold shift forward from one material project exposure to the next, applies an evidence-based recovery function, and tests the effect of subsequent exposure upon an animal whose auditory system has not necessarily returned to baseline. ^[11]

That distinction is important because a modelling approach which treats each assessment period as beginning with an acoustically unaffected receptor may give a different answer from one in which residual auditory impairment persists into a later exposure.

The Commission should therefore establish whether the revised assessment demonstrates sufficient recovery between reasonably foreseeable sequential sound-producing activities, rather than assuming that modelling cumulative energy within each assessment window resolves cumulative auditory condition across successive windows. ^[11]

3.4 Drilled pin piles should be represented by the actual proposed installation sequence

The issue is especially relevant to the retained drilled-pin-pile option for the OSP. ^[11]

The previous NISA modelling demonstrates that duration and sequential exposure can materially alter predicted SELcum results. In the original assessment, two sequentially installed piles were expressly modelled for the multi-leg foundation scenario, demonstrating that the Applicant itself recognised sequential pile installation as relevant to cumulative acoustic exposure.

The revised project is different because the OSP pin piles would be drilled rather than impact-driven. It would therefore be inappropriate simply to transplant the former impact-piling contours into the current project.

The proper question is instead whether the revised generic drilling assessment demonstrably represents the actual acoustic envelope of the proposed OSP pin-pile installation, including drilling power, pile dimensions and penetration depth, geology, drilling duration, duty cycle, number of piles and the temporal sequence in which those piles may be installed.

A generic RMS drilling source and a generic 24-hour exposure assumption may be precautionary in some respects. It does not automatically demonstrate that the actual pin-pile installation sequence, particularly if conducted over successive days or with limited recovery intervals, has been fully represented.

Blue Ireland therefore submits that the Commission should identify expressly the project-specific drilled-pin-pile installation scenario against which TTS and PTS have been tested.

3.5 Auditory-injury mitigation does not resolve behavioural disturbance

The MMMP is principally an injury-avoidance protocol. That is a legitimate and important function. It does not, however, follow that successful mitigation of PTS demonstrates that no prohibited or ecologically material disturbance occurs. ^[11,14]

This distinction is particularly apparent where mitigation uses Acoustic Deterrent Devices (“ADDs”). An ADD may reduce the risk of close-range auditory injury by causing an animal to leave the area before the principal sound event. But the mechanism by which that protection is achieved is itself behavioural displacement. Injury avoided by moving an animal and ecological disturbance avoided are therefore not equivalent conclusions.

The assessment must consequently distinguish the acoustic endpoint being mitigated from the ecological endpoint being protected. It should separately consider whether repeated avoidance or displacement interrupts foraging; affects prey capture or echolocation; interferes with communication; displaces animals from preferred habitat; increases swimming or energetic expenditure; affects animals during breeding, calving or rearing periods; or becomes cumulatively important when disturbance is repeated across successive activities.

The importance of that distinction is reinforced by new empirical evidence published after NISA's FI was prepared. Van Geel et al. (2026) reported substantially reduced harbour-porpoise occurrence and echolocation buzzes following the largest high-order UXO detonation studied, extending approximately 15 to 20 km from the event in that particular case. The study concerned unmitigated detonations at another wind farm and its numerical result cannot simply be transferred to NISA, but it provides empirical evidence that behavioural effects from high-order UXO can be spatially and temporally more substantial than a very short near-source response assumption.

3.6 The project-specific cetacean baseline is stronger on occurrence than ecological function

NISA has undertaken substantial marine-mammal baseline work. Blue Ireland does not suggest otherwise. The material characterises species presence, density, management units, seasonal occurrence, SAC relationships and known seal haul-outs. Seal breeding and haul-out areas have received comparatively spatially explicit treatment.^[11]

For cetaceans, however, Blue Ireland has not identified an equivalent spatially explicit characterisation of areas used for particular biologically important functions, including recurrent foraging, calving, breeding/social behaviour or resting. The baseline appears substantially stronger in answering where and in what numbers animals occur than in identifying what functions particular waters perform for those animals.

Blue Ireland recognises that cetacean breeding, feeding and resting functions do not necessarily form discrete terrestrial-style “sites”. Harbour-porpoise habitat use in particular may be diffuse and dynamic. That does not render ecological function irrelevant. It instead means that the assessment needs evidence capable of characterising temporal and behavioural use of the water column.

NISA itself acknowledges that Passive Acoustic Monitoring can provide information on species presence and fine temporal variation that aerial surveys do not necessarily provide in the same way.

Blue Ireland has not identified a long-duration, project-specific PAM programme designed to determine whether recurrent diel or seasonal acoustic activity, foraging-related behaviour or other biologically important patterns occur within particular parts of the development area.

PAM alone would not prove “breeding” or “mating”, and Blue Ireland does not suggest that it would. The concern is more limited: where the assessment concludes that temporary displacement is ecologically inconsequential because animals can move elsewhere and return later, the biological function of the habitat from which they are displaced becomes relevant to that conclusion.

3.6A Regulation 51(2)(d): ecological functionality of cetacean breeding sites and resting places

A further strict-protection question concerns Article 12(1)(d) of the Habitats Directive and Regulation 51(2)(d), which prohibit deterioration or destruction of breeding sites and resting places of Annex IV animals. That is a separate prohibition from deliberate disturbance. The former is not confined to intentional acts. In Case C-357/20, IE v Magistrat der Stadt Wien, the Court of Justice held that deterioration and destruction are distinguished by the progressive reduction and total loss, respectively, of the ecological functionality of a breeding site or resting place. The assessment must have regard to the ecological requirements of the species and the circumstances of the animals using the place. [15,36,37]

The Court considered the breeding sites of a terrestrial mammal. Its judgment does not establish that every area of sea used by a cetacean is necessarily a legally identifiable breeding site or resting place; neither does it establish that every change in underwater sound constitutes deterioration. Whether an acoustic or other pressure engages Regulation 51(2)(d) depends upon the identification of the relevant place, its ecological function and evidence that the activity could progressively reduce or eliminate that function. However, it would be equally unsatisfactory to exclude the pathway solely because the water column remains physically present or because no discrete breeding or resting site has been mapped.

NISA has provided evidence of cetacean occurrence but Blue Ireland has not identified a sufficiently explicit determination of whether the waters affected by the revised OSP drilling, UXO clearance, vessel activity and operational noise include places of recurrent breeding, rearing or resting use, or how the ecological functionality of any such places would be maintained. Relevant evidence could include seasonally resolved acoustic detection, repeated habitat use, feeding-related click activity, prey availability and return after disturbance, considered together with the limitations of each method. The Commission should request a reasoned Regulation 51(2)(d) assessment, separately from its consideration of deliberate disturbance under Regulation 51(2)(b). [11,12,15,37]

3.6B Earlier site investigations and the limits of operational marine-mammal observations

The NISA area has been subject to separately authorised site investigations, including FS007031 for the array area, FS007358 for the export cable corridor and Maritime Usage Licence LIC230001. The latter is expressly described by MARA as site investigation activities to inform the NISA wind farm and export cable. The Applicant also states that geophysical and geotechnical surveys undertaken in 2022 and 2023 informed the proposed foundation design and layout. The authorisations do not establish that every activity was completed, but they provide a clear basis for identifying which investigations formed part of the overall development process, what was undertaken and whether those activities have been addressed in the project-wide environmental assessment. [38,40,41]

Further evidence of the nature of the investigations appears in NISA Marine Notice No. 46 of 2024, which described a planned survey campaign using multibeam echosounders, sub-bottom profiling, side-scan sonar and high-resolution 3D multichannel seismic, with 24-hour vessel operations envisaged. The notice anticipated survey work from September to October 2024. It does not establish what equipment was ultimately operated, at what acoustic

settings, or for how long. That distinction makes the actual survey logs, source specifications, monitoring returns and completed works important to the cumulative acoustic-exposure and disturbance assessment. [39]

Where Marine Mammal Observer returns or other monitoring records from those investigations exist, they should be identified and assessed for what they can properly demonstrate. Operational MMO records primarily document detections and mitigation during particular operations. Sparse sightings cannot be treated, without appropriate consideration of survey effort, detectability, darkness, sea state and observation range, as proof of low cetacean abundance, absence of calving or resting functions, or complete recovery following an earlier activity. The relevant question is whether previous survey and monitoring evidence has been used to inform NISA's undisturbed functional baseline, the history of disturbance and the assumptions concerning mitigation effectiveness and recovery. [36,38]

3.6C Scope of the proposed development: ancillary site investigations and project splitting

There is a further question as to whether investigations undertaken expressly to establish the feasibility, layout, foundation design and export cable route of NISA have been treated merely as independent licensed activities, rather than assessed as part of the development as a whole. The functional relationship is identifiable: MARA describes LIC230001 as surveys to inform NISA and its export cable, and the Applicant itself states that the surveys were instrumental in refining its design. FS007031 and FS007358 relate respectively to the array and export cable corridor. The chronology and separate licensing routes do not determine whether the works are properly characterised as ancillary components of one project or as genuinely separate projects with effects requiring in-combination assessment. [38,40,41]

Article 5 and Annex IV of the EIA Directive require an environmental account of the physical characteristics of the whole project and its likely significant effects. In *Commission v Ireland*, Case C-392/96, paragraph 76, and *Ecologistas en Acción-CODA*, Case C-142/07, paragraphs 44 and 45, the Court of Justice made clear that the objectives of EIA cannot be circumvented by dividing a larger development into separately considered projects. The relevant questions include the activities' shared purpose, geographical and temporal relationship, functional dependence and ecological interactions. Those judgments do not establish that every preliminary scientific survey automatically becomes part of a later wind farm for EIA purposes. They do, however, require the Commission to address the substantive project boundary and cumulative effects rather than accepting separate licences as a sufficient answer. [42]

Blue Ireland therefore asks the Commission to identify which geophysical, geotechnical, benthic and associated vessel operations are included in the definition and assessment of the NISA project, which were assessed under separate statutory procedures, and how the resulting effects were integrated. The assessment should distinguish work completed before the present application, authorised work not yet undertaken and further project-specific investigation or construction-stage work. It should identify the actual source types, acoustic outputs, number of survey lines and boreholes, operating duration and timing, monitoring and mitigation records, seabed disturbance and any residual habitat or prey effects. Where activities form part of the overall project, their relevant environmental effects should be accounted for as such. Where they are genuinely separate activities, their existing and

foreseeable cumulative effects, including any persistence, repeated exposure and incomplete recovery, still require appropriate consideration. [38–42]

The same distinction is material under Article 6(3). A prior Appropriate Assessment of a survey licence does not, simply by having been undertaken, demonstrate that the implications of the wind farm and its ancillary activities have been assessed together, or that any continuing effects have been carried into the project-level NIS and its in-combination analysis. Nor does it follow that every completed survey has a continuing effect requiring reassessment: the Applicant should identify the effects that remain relevant and explain the basis upon which others can be excluded. Blue Ireland does not ask the Commission retrospectively to reauthorise completed investigations. It asks for a reasoned, evidence-based determination of the project boundary and a complete assessment of its consequences, without artificial segmentation. [40–42]

3.7 High-order UXO remains the principal acute residual noise pathway

Removal of impact WTG piling has materially altered the marine-mammal risk profile. High-order UXO clearance is now the remaining construction activity capable of generating the largest acute underwater-noise and disturbance footprint. [11,14]

NISA adopts a mitigation hierarchy under which removal, relocation or low-order deflagration is preferred and high-order detonation is a last resort. For high-order detonation it proposes at-source noise reduction, a 1 km pre-clearance monitoring zone and ADD use where required to move animals beyond the predicted injury range.

That is substantial mitigation.

However, NISA also accepts that the high-order UXO behavioural disturbance range and/or the applicable 10 km EDR may overlap the Rockabill to Dalkey Island SAC.

The relevant Article 6(3) question is therefore not answered solely by demonstrating that PTS can be mitigated.

The conservation-objective assessment must address the complete clearance operation and its effects upon harbour porpoise behaviour and habitat use, including any displacement caused by the ADD itself, the detonation, associated vessels and the period before animals return.

Where the NIS conclusion relies materially upon the disturbance being short-lived and reversible, the scientific basis for the assumed duration and ecological consequence is important. “Temporary” does not itself mean “ecologically inconsequential”.

3.7A Predicted UXO auditory-injury exposure and the population denominator

The revised marine-mammal tables provide a useful distinction between the area of potentially injurious sound and the further reduction in individual exposure which the mitigation protocol seeks to achieve. Tables A14.12 and A14.13 identify a PTS-onset exposure range and numbers of animals potentially at risk from high-order UXO, even after assumed at-source noise attenuation. Those figures are modelled pre-clearance exposure estimates, not a prediction that the same number of animals will necessarily suffer residual injury after the full protocol is implemented. Nevertheless, the Commission should identify the acoustic range which must actually be cleared, the detectability assumptions, and the evidence that the

MMO/ADD/clearance procedure is capable of moving animals beyond that range in the relevant conditions. [30]

A separate demographic inconsistency arises for Bottlenose Dolphin. Section 14.3.2.2 of the 2026 Chapter 14 Addendum gives an IAMMWG (2023) Irish Sea management-unit estimate of 293 animals, but also recognises that the SCANS-IV density surface is incompatible with that estimate and, for quantitative assessment, derives a much larger notional management-unit abundance of 8,225 animals. Table A14.15 then assesses approximately 52 Bottlenose Dolphins disturbed by one high-order UXO event against 8,225, giving about 0.63%. Those same 52 animals would represent approximately 18% of 293. Neither percentage alone resolves the inconsistency, because the density estimate affects the predicted animals exposed as well as the denominator. The Commission should require a consistent and justified treatment of the local density, management-unit size and population consequence, with sensitivity to both data sources rather than simply selecting the larger denominator. [30]

The estimated number of high-order clearance events also remains uncertain. If the magnitude conclusion depends on few detonations, the assessed upper limit, separation in time, effects of repeat detonations and binding limits or further assessment triggers should be made explicit. The location of the potentially higher UXO hazard within the inshore cable corridor warrants particular attention because of its proximity to the Rockabill to Dalkey Island SAC. [30]

3.8 Temporal mitigation should be reconsidered for the remaining UXO pathway

FIR 10(q) specifically asked the Applicant to consider temporal mitigation around sensitive periods, including harbour-porpoise calving and seal pupping. [11]

The removal of impact piling plainly reduces the need for seasonal restrictions directed at WTG foundation installation. Blue Ireland accepts that.

It does not, however, answer the corresponding question for the retained high-order UXO contingency. NISA's response appears principally to reason that piling has been removed and that the NIS predicts no adverse effect requiring additional temporal restrictions. Blue Ireland has not identified an equivalent analysis demonstrating why high-order UXO should not be temporally constrained where its behavioural footprint may overlap waters used by harbour porpoise during biologically sensitive periods.

The Commission should therefore determine specifically whether high-order detonation can occur during harbour-porpoise calving/rearing periods and, if so, whether the evidence is sufficient to exclude material disturbance during those periods.

3.9 Operational underwater noise must be assessed as an array soundscape

NISA now assesses operational WTG underwater noise. Blue Ireland therefore does not maintain that operational noise has been omitted. [11]

The revised assessment uses a precautionary 120 dB SPLrms behavioural criterion and predicts an approximately 150 m disturbance radius around an operational geared-drive turbine, with a smaller effect expected from direct-drive turbines. It nevertheless recognises that operational WTG sound may remain audible to marine mammals over considerably greater distances depending upon frequency, turbine design, receptor hearing and

propagation conditions. NISA concludes that operational effects are not significant and consequently proposes neither operational underwater-noise mitigation nor a committed project-specific marine-mammal underwater-noise monitoring programme.

The residual question is whether the approximately 150 m contour represents the actual acoustic environment experienced by an animal within a functioning wind farm.

A marine mammal positioned between turbines receives contributions from several operating WTGs. Those contributions do not cease because the animal lies outside the individual 150 m contour around each turbine. Independent acoustic sources combine energetically, so the relevant project-alone question is the combined received sound field at the receptor, ideally frequency resolved.

Blue Ireland has not identified a spatially resolved model which sums the simultaneous contribution of all 35 or 49 NISA turbines throughout the array. Comparison between a single NISA turbine's predicted range and the operational ranges of other offshore wind projects is not the same exercise as modelling the combined project-alone soundscape generated by NISA's own operating array.

This issue is especially relevant to masking. FIR 10(s) asked for quantitative treatment of masking and behavioural impacts. NISA explains that there are no established masking thresholds permitting explicit quantitative assessment and therefore reasons qualitatively that masking should not exceed the magnitude or significance of behavioural disturbance.

Uncertainty as to the appropriate threshold does not itself demonstrate absence of effect. The Commission should therefore establish whether the operational behavioural and masking conclusions are based upon the combined array soundscape, rather than individual-turbine propagation considered separately.

3.10 Individual encounter duration is not the same as duration of the pressure

A related issue concerns duration. The revised assessment describes operational disturbance as capable of occurring over many years while characterising an individual disturbance event as lasting less than a day.

That may be appropriate when describing the duration of one animal's encounter. It should not be used to characterise the duration of the environmental pressure itself.

An operating wind farm can remain an acoustic source throughout its operational life.

A short encounter by one animal does not establish that exposure of the habitat or its wider marine-mammal community is similarly short-lived.

This distinction matters where the environmental conclusion depends upon frequency, timing, duration and reversibility of disturbance, particularly if the same waters are used repeatedly for foraging or other biologically important functions.

3.11 Harbour porpoise conservation status requires a precautionary population context

The strict-protection and population-consequence assessment must also take account of the current conservation context.^[13]

Ireland's 2025 Article 17 assessment classifies harbour porpoise as Unfavourable-Inadequate. ObSERVE Phase II reported particularly low harbour-porpoise abundance in 2022 compared with Phase I, estimating approximately 7,500 animals in summer and 6,600 in winter, with the species occurring principally in the Irish Sea.

The evidence should nevertheless be described carefully. Individual SCANS blocks do not demonstrate a simple monotonic decline: the relevant SCANS-III and SCANS-IV block estimates increased from 8,320 to 9,773, but with broad and overlapping confidence intervals.

The appropriate conclusion is therefore not that every dataset demonstrates a uniform decline. It is that the relevant population cannot safely be treated as demonstrably robust or increasing. The national conservation assessment is Unfavourable-Inadequate; ObSERVE II reports very low recent abundance relative to Phase I; and local Rockabill to Dalkey Island SAC evidence records a substantial reduction in observed density between 2016 and 2021.

That uncertainty is directly relevant where the Applicant concludes that repeated disturbance is ecologically tolerable because effects are temporary or because only a small proportion of a broad management unit is predicted to be affected.

3.11A Rockabill to Dalkey Island SAC: adequacy of the site-specific conservation-objective baseline

A related question arises from the conservation objectives against which NISA assesses effects upon Harbour Porpoise in Rockabill to Dalkey Island SAC. The operative NPWS site-specific objectives remain Version 1 dated 7 May 2013. The two relevant attributes concern access to suitable habitat without artificial barriers and disturbance at levels which do not adversely affect the harbour-porpoise community at the site. The original NISA NIS itself records a 2021 pooled density of approximately 0.83 porpoises/km² within the SAC, compared with approximately 1.44 in 2013 and 1.55 in 2016. It cautions that lower site density may reflect redistribution or habitat use rather than an equivalent decline in the wider population. [43]

Blue Ireland does not contend that the 2013 objectives are automatically invalid because they are older, nor that the site is necessarily in unfavourable condition merely because the current national Article 17 assessment is Unfavourable-Inadequate. The concern is whether the general maintenance and disturbance targets, when applied in the light of the subsequent site-use evidence, provide a sufficiently current and specific scientific reference point to evaluate further displacement, repeated disturbance, access to productive foraging areas and recovery after disturbance. If the harbour-porpoise community has materially changed its use of the site, that ecological circumstance requires consideration even if the change cannot presently be attributed to a single cause. [43]

The Court of Justice judgment of 16 July 2026 in Joined Cases C-27/25 and C-356/25, Knocknamona and Massey, stresses the requirement for site-specific conservation objectives that are sufficiently precise to support the Article 6(3) assessment. Those cases concerned the absence of site-specific objectives, not the validity of an existing 2013 objective for Rockabill to Dalkey Island SAC, and Blue Ireland does not present the judgment as resolving that different question. It does, however, reinforce the need for the Commission to identify the

ecological benchmarks against which the NISA effects can be judged, rather than rely upon the mere existence of an objectives document. [43]

The Commission should therefore satisfy itself, with current NPWS input if necessary, that the Harbour Porpoise objectives remain scientifically appropriate in light of the 2021 site-density evidence and the 2025 Article 17 findings, and that the NIS provides complete, precise and definitive findings as to disturbance, habitat use and site integrity against those objectives. Where the applicable benchmark is materially uncertain, the necessary clarification should precede, not follow, the Article 6(3) determination.

3.11B Geophysical sources: biological effect range and survey-day habitat exposure

A distinction should be drawn between assigning a generic effective deterrence range to a geophysical source and demonstrating a biologically justified response range for the source actually used. The EU Technical Group on Underwater Noise describes the Level of Onset of Biologically adverse Effects (LOBE) as an evidence-based relationship between an acoustic metric and an adverse biological response for a selected indicator species. Its impulsive-noise framework considers the area of habitat exposed above the relevant biological threshold on a daily basis. This Marine Strategy Framework Directive methodology is not itself a substitute for, or an automatic legal threshold within, the project-specific Article 6(3) assessment. [44]

For NISA, the relevant question is whether the disturbance ranges used for high-resolution seismic sources, sparkers, sub-bottom profiling and other proposed or completed investigation equipment are justified for their actual acoustic characteristics, survey patterns and receiving environment. A circular range around a notional stationary vessel does not itself describe the swept footprint of a vessel surveying repeated lines over a day, or the possibility that the same SAC habitat is exposed on successive days. Similarly, a source-class range borrowed from guidance for another acoustic technology may not adequately represent a more powerful or differently operated source. [38,39,44]

Blue Ireland therefore requests source-specific identification of the acoustic assumptions and biological-response ranges, accompanied where feasible by mapped survey-day exposure of relevant Harbour Porpoise habitat and the treatment of repeated exposure. Where a quantitative LOBE-based calculation is not technically supported by available evidence, the Applicant should explain the alternative scientific basis for the range adopted and its relevance to the SAC conservation objectives, rather than treating a generic EDR as a demonstrated threshold of ecologically tolerable disturbance.

3.12 Strict species protection must be resolved independently of population-level significance

The Article 6(3) Natura assessment and the strict-species-protection regime answer different questions. Regulation 51(2) establishes the strict-protection prohibitions for Annex IV fauna, including deliberate disturbance particularly during breeding, rearing, hibernation and migration, notwithstanding another public-authority consent except in accordance with a Regulation 54 licence. ^[15]

Accordingly, a conclusion that the proposed development will not adversely affect the integrity of a SAC does not itself establish compliance with Regulation 51, and a population-

level conclusion of no significant or long-term effect does not determine whether prohibited disturbance of protected animals may occur. ^[15]

Population-consequences modelling can inform the favourable-conservation-status limb of any derogation analysis, but it does not replace the antecedent strict-protection question or the other Regulation 54 requirements. ^[15]

Regulation 63(7) is directly relevant to the consenting function: where a public authority is aware, from the environmental assessment, surveillance, Ministerial guidance or other available information, that granting consent would not comply with Regulations 51 to 53, it shall not grant the consent unless the Minister has granted the relevant derogation licence under Regulation 54 or 55. ^[15]

Blue Ireland therefore submits that the Commission should identify expressly whether the evidential record demonstrates that the consent can be granted consistently with Regulation 51. If the information before the Commission indicates that the proposed activities would not comply, that issue cannot be cured merely by describing the population-level effect as negligible or non-significant. A Regulation 54 derogation is a separate Ministerial process and requires, among other matters, no satisfactory alternative, no detriment to maintenance of the population at favourable conservation status in its natural range, and satisfaction of one of the purposes specified in Regulation 54(2). ^[15]

This is particularly important for harbour porpoise because the current Irish Article 17 conservation assessment is already Unfavourable-Inadequate. ^[13,15]

3.12A No satisfactory alternative is a separate Article 16 question

The distinction between the Environmental Impact Assessment and strict-species-protection regimes is also relevant to alternatives. Article 5(1)(d) of the EIA Directive requires a description of reasonable alternatives studied and the principal reasons for the option selected, taking account of environmental effects. It does not itself require a finding that no alternative exists. If a Regulation 54 derogation is necessary, however, Article 16 requires the separate and cumulative demonstration that there is no satisfactory alternative to the activity for which derogation is sought. These tests should not be treated as interchangeable. ^[15,36]

For NISA the analysis should be directed at the residual disturbance-generating activities of the revised design, not at a piling scenario that has been removed. It should consider whether the need for, or scale of, a derogation could be avoided or reduced through a different OSP foundation or installation method, the timing and sequencing of drilling, alternatives to high-order UXO detonation, the location or extent of activities and any practicable change in the project configuration. Site and scale alternatives may also be relevant where they are genuinely capable of meeting the legitimate project objective. The assessment must account for engineering feasibility and wider environmental consequences; Blue Ireland does not assert that every lower-noise option is necessarily satisfactory. It requests a transparent protected-species comparison where the Article 16 test is engaged. ^[15,36]

The alternatives inquiry should also extend to reasonably foreseeable future geophysical and geotechnical investigations where the proposed activity itself may present a risk of an offence under Regulation 51. Survey activities cannot properly be treated as having uniform acoustic consequences. Any relevant protected-species alternatives comparison should distinguish the

survey purpose, acoustic source type, frequency and energy, duty cycle, vessel passes, survey-line extent, operating hours, borehole or sampling intensity, and the timing of work relative to other activities. It should consider whether existing data, technically suitable lower-impact methods or equipment settings, reduced survey extent or repetition, or different scheduling would achieve the required investigative purpose with less risk to Annex IV species. These are not necessarily satisfactory substitutes in every case, but they should be evaluated where an Article 16 derogation test is engaged. [15,38,39]

Earlier completed investigations are not, merely because the present planning application is being determined, retrospectively subject to a new Article 16 alternatives decision for their historical execution. That separate point must not be confused with the EIA project-boundary question. Where investigations are functionally part of the NISA scheme, the Commission must establish that the relevant project-wide effects have been assessed; where already completed under separate authorisations, their actual effects may remain material to the existing environment, continuing effects and cumulative ecological assessment. Any further or not-yet-undertaken investigations must also be addressed as part of the appropriate project or in-combination assessment, with separate strict-species-protection compliance and alternatives scrutiny where the proposed activity may require a Regulation 54 derogation. An earlier licence alone neither proves a prohibited effect nor determines that an associated activity can be omitted from the present EIAR or NIS. [15,38–42]

3.13 Updated population-consequences modelling is warranted

The Applicant's revised project removes the impact-piling scenario which previously drove much of the marine-mammal interim Population Consequences of Disturbance ("iPCoD") assessment. That is a legitimate reason why the old piling model should not simply be rerun unchanged. [11,13]

However, the revised environmental conclusions continue to depend upon propositions that disturbance is temporary, animals recover or return, and the resulting effects upon survival or reproduction are insufficient to alter population trajectory.

Where those propositions remain material to the conclusion, Blue Ireland submits that the Commission should consider requiring an updated iPCoD assessment, or another appropriately validated population-consequences model, based upon the revised project.

Such an exercise should not be confined to asking how many animals are inside an effect radius on one isolated day. It should be capable of examining recovery assumptions, repeated exposure of the same animals, sequential construction activity, displacement from functionally valuable habitat, energetic consequences and the cumulative or sequential contribution of the other Phase 1 developments.

Nor should the model be presented as answering the Regulation 51 question. A favourable iPCoD output could inform population consequences and the favourable-conservation-status limb of any Regulation 54 assessment; it would not establish that the underlying activity complies with the strict-protection prohibitions. [15]

Any revised iPCoD or equivalent analysis should disclose not only its headline population trajectory but also the source populations, model structure and version, disturbance-to-vital-rate assumptions, the treatment of repeated exposure of the same animals, time needed for

recovery, and sensitivity to incomplete recovery or unsuccessful relocation. An assumed ability to move into alternative habitat should not simultaneously be presented as independent evidence that such habitat is available and ecologically equivalent. The analysis should distinguish the total number of exposure events from the number of distinct animals potentially affected, and should test the influence of uncertainty on any conservation-status conclusion. [13,36]

3.14 Matters which should be resolved before the marine-mammal conclusions are relied upon

1. whether the revised MMMP's exclusion of TTS as an injury criterion adequately addresses FIR 10(o), given that both Irish guidance and the Applicant's own evidence recognise that some TTS may involve physical injury;
2. whether the actual OSP drilled-pin-pile installation sequence has been assessed in SELcum terms using project-specific duration, number of piles, duty cycle and geology, and whether incomplete recovery between successive material exposures has been considered;
3. whether the ecological consequences of repeated behavioural disturbance, ADD-induced displacement, loss of foraging opportunity, masking and habitat exclusion have been assessed separately from PTS avoidance;
4. whether the baseline is sufficient to identify biologically important temporal and functional use of the development area by cetaceans, whether further PAM or equivalent evidence is needed, and whether breeding-site and resting-place functionality has been assessed expressly under Regulation 51(2)(d), separately from deliberate disturbance under Regulation 51(2)(b);
5. whether high-order UXO during harbour-porpoise calving/rearing periods requires temporal restriction or other additional mitigation;
6. whether operational-noise conclusions are based upon the combined sound field from the full NISA array rather than individual turbines considered separately;
7. whether an updated iPCoD or equivalent population-consequences assessment is needed, with transparent source populations, disturbance and recovery assumptions, repeat-exposure treatment, alternatives for displaced animals and sensitivity analyses; and
8. whether the evidential record establishes that the proposed activities can be consented consistently with Article 12 and Regulation 51, including the independent breeding-site/resting-place prohibition; and, where non-compliance is indicated, whether Regulation 63(7) is engaged and any required Regulation 54 derogation has been granted, with the separate no-satisfactory-alternative, permitted-purpose and favourable-conservation-status tests explicitly addressed. [15,36,37]
9. which earlier NISA investigation activities were actually undertaken under FS007031, LIC230001 and any other relevant authorisations; what usable acoustic, MMO or mitigation records resulted; and how those records have informed the baseline and assessment of sequential disturbance, without treating operational sightings as a systematic abundance or functional-habitat survey. [38]

10. whether further geophysical or geotechnical surveys are envisaged in connection with the revised development, what acoustic and intrusive methods would be used, how their combined effects and recovery intervals have been assessed, and whether technically satisfactory lower-impact alternatives and any necessary Regulation 54 authorisations have been examined. [15,38,39]

11. whether the array and export-cable investigations under FS007031, FS007358 and LIC230001, together with any additional NISA-related surveys, have been identified within a reasoned definition of the whole project or assessed as genuinely separate but interacting activities; and whether the EIAR and NIS account for all material direct, indirect and cumulative effects without project splitting. [40–42]

In Blue Ireland’s submission, those matters are not peripheral refinements to an otherwise closed issue. They concern the environmental and legal endpoints against which the Applicant’s mitigation and significance conclusions must be tested.

Principal Issue 4: Incomplete Baselines, Monitoring and Post-Consent Determination

4.1 Overview

Blue Ireland does not contend that post-consent monitoring, detailed design, micro-siting or adaptive management are inherently inappropriate. Major infrastructure projects will inevitably require some matters to be finalised after consent, and monitoring can perform an important role in verifying predictions and informing later decommissioning or management decisions.

The concern is narrower. There is a material distinction between post-consent work which verifies an environmental effect that has already been adequately characterised before consent, and post-consent work which is required to establish the receptor, exposure pathway, environmental response or mitigation upon which the consent conclusion itself depends.

That distinction emerges repeatedly in the NISA Further Information. FIR 1(d) provides the general documentary foundation, while the nearshore reef, benthic monitoring, offshore-bat and commercial-fisheries material provide concrete examples of why the distinction matters in practice.

4.2 FIR 1(d): the Operational Monitoring Plan remains a framework rather than a fully specified programme

The Commission required details of an operational monitoring programme, including appropriate intervals, monitoring periods and reporting, capable of informing future decommissioning and of justifying adaptive mitigation where required.^[1]

NISA has responded by providing Appendix A6.3, the Operational Monitoring Plan (“OMP”). Blue Ireland therefore does not submit that operational monitoring has been ignored. The difficulty is the level at which the programme remains defined.

The OMP describes itself as a framework for a final OMP. It states that the final detailed plan will be developed following consent through consultation with the Commission and relevant regulators, with exact timings and methodologies to be agreed later. It also states that specific monitoring measures have not been identified at this stage because their scope is to be determined after consent.^[1]

That is materially different from a programme in which the receptor, metric, method, frequency, reporting cycle, trigger and adaptive response have already been defined and only implementation details remain to be settled. The Commission should therefore determine whether FIR 1(d) has been answered with sufficient specificity to make any adaptive-mitigation function effective and enforceable before the project is authorised.

4.3 The relevant distinction is verification versus determination

A precautionary post-consent monitoring framework does not require every uncertainty to be eliminated before consent. The question is what the future monitoring is being asked to do.

Where the environmental effect has already been assessed against a defined worst-case envelope, the competent authority may legitimately require later monitoring to verify the prediction, confirm compliance and refine management within that assessed envelope.

The position is different where post-consent work is needed to answer questions such as whether the protected receptor is present, whether a migration or displacement pathway exists, where affected activity will relocate, whether the effect is materially greater than predicted, or what mitigation will be required if that occurs. In those circumstances monitoring is not simply validating an assessment; it is supplying information needed to complete the assessment itself. ^[15,25]

For Natura-related effects this distinction has a specific legal consequence. Holohan confirms that later determination of construction parameters is permissible only where the competent authority is certain that the consent conditions are strict enough to guarantee that those parameters will not adversely affect site integrity. The Irish Regulations likewise prohibit consent conditions which purport to defer the collection of information required for Appropriate Assessment, or completion of that assessment, until after consent. ^[15,25]

Blue Ireland therefore submits that each monitoring commitment should be examined by reference to four linked questions: what has already been established before consent; what remains unknown; what trigger would cause a management response; and what response is already committed if that trigger is reached.

4.4 FIR 9(c): the nearshore Annex I reef question remains partly dependent on post-consent ecological identification

FIR 9(c) identified uncertainty concerning potential reef around the landfall and shallow infralittoral export-cable corridor and required clarification of its extent and its interaction with the horizontal directional drilling (“HDD”) exit points and subsequent cable trenching. The Marine Institute advice recorded by the Commission was that circalittoral/infralittoral rock and biogenic reef should be avoided. ^[3]

NISA has undertaken relevant work. The 2023 geophysical survey mapped limited rocky habitat and the Applicant states that the indicative HDD exit pits do not impinge upon that mapped feature. Blue Ireland therefore does not submit that the nearshore seabed has been ignored.

However, revised Chapter 12 records that the shallow rocky habitat identified by the geophysical survey has not been ground-truthed for assessment as potential Annex I reef habitat. The embedded mitigation then relies upon further pre-construction survey to identify protected habitats, followed by micro-siting so that infrastructure avoids them wherever reasonably practicable.

The residual issue is therefore not merely the final centimetres of cable alignment. The ecological character of the receptor whose avoidance is relied upon remains to be established after consent. The Commission should be satisfied either that the existing evidence and enforceable design envelope are already sufficient to exclude a material effect on any Annex I reef, or that the ecological status and spatial extent of the potential receptor are established before a conclusion dependent upon its avoidance is reached.

4.5 FIR 9(b): the revised benthic assessment was not accompanied by an identified revised monitoring programme

The monitoring limb of FIR 9(b) provides a second, more specific example. The Commission expressly required NISA, following reconsideration of the permanent habitat-loss assessment, to reconsider pre-construction, construction and post-construction benthic monitoring requirements and plans. ^[1,3]

NISA did revise the effect assessment. The magnitude of permanent/long-term habitat loss was increased from negligible to low and, for the high-sensitivity OSPAR receptor, the resulting effect became moderate, although still assessed as not significant in EIA terms.

Yet revised Chapter 12 states that there are no changes to the mitigation and monitoring section. The Response Report identifies the addition of the Offshore Environmental Management Plan to the operational phase, but Blue Ireland has not identified a corresponding receptor-specific revision of the benthic monitoring programme following the changed effect assessment.

This does not establish that more monitoring is necessarily required. It does, however, require a reasoned answer to the question the Commission actually asked. If no additional pre-, during- or post-construction monitoring is necessary for a receptor which the Commission required to be reclassified and reassessed, the basis for that conclusion should be explicit. If monitoring is instead intended to be developed through the wider OMP after consent, the relevant methods, locations, frequency, ecological thresholds and management consequences should be sufficiently defined now to show what environmental conclusion that monitoring is verifying.

4.6 Offshore bats: operational monitoring is proposed to determine an exposure pathway which remains material to the collision conclusion

The offshore-bat material provides the clearest illustration of the distinction between verification and determination. The Significant Further Information materially improves the evidence base: additional Rockabill, headland and vessel-based surveys have been supplied, and a small transitional or stopover roost of Leisler's bat has been confirmed on Rockabill. ^[16]

At the same time, the Applicant acknowledges important limits in the project-specific evidence. The acoustic dataset cannot determine movement routes, flight height or attraction/avoidance behaviour. The 2024 monitoring nevertheless recorded Leisler's and Nathusius' pipistrelle within the array during recognised migration periods and discussed interpretations consistent with movement through or around the array. ^[16]

NISA now concludes that a significant bat collision/barotrauma effect is not predicted and therefore does not propose bat-specific operational mitigation such as curtailment or feathering. The Operational Monitoring Plan, however, identifies as potential operational questions whether the wind farm affects offshore bat presence and activity and whether established offshore migratory routes exist and pass through the operational wind farm. ^[16]

Those are not merely questions of checking whether an already-established prediction was accurate within a defined margin. The latter question substantially reproduces the exposure uncertainty raised by FIR 15(b). Blue Ireland has also not identified a predefined

migration/activity threshold linked to a committed operational response should monitoring show materially greater exposure than assumed. ^[16]

Blue Ireland does not submit that unconditional blanket curtailment must be imposed now. The narrower question is whether the evidential basis is sufficient to exclude the need for a defined conditional response before consent is granted. A genuine adaptive framework could identify the monitoring method, trigger conditions, mitigation response and subsequent verification of effectiveness. An open-ended commitment to investigate the migration pathway after the wind farm is operating does not perform the same function.

4.6A Rockabill bats: rotor clearance, lighting and operational response

The confirmed Leisler's bat roost on Rockabill provides a specific ecological basis for reconsidering the offshore-bat risk assessment. FIR 15(e) called attention to the tidal range and the resulting clearance between the sea surface and the turbine rotor. The collision-risk design appendix identifies lower blade-tip clearance values at higher water levels, including 34.4 m and, for certain turbines in Option 2, 29.4 m. The Commission should be satisfied that the exposure assessment reflects the relevant tidal condition and the actual turbine-specific rotor clearances rather than a nominal minimum measured from the lowest tidal level. [31]

FIR 15 also raised lighting and possible curtailment or feathering measures. If lux-based footprint modelling or bat-specific operational mitigation is considered unnecessary, the reasons should be linked explicitly to the confirmed roost, the limitations of acoustic detections for establishing flight height and route, and a defined monitoring trigger for further action. The absence of an agreed collision threshold does not justify deferring both the relevant exposure assessment and the determination of any necessary response until after operation begins. [31]

4.7 Commercial fisheries: monitoring redistribution is not the same as demonstrating receiving-ground capacity before consent

The same distinction arises, although more cautiously, in the commercial-fisheries assessment. The 2026 package contains substantial revised fisheries material and an extensive Fisheries Management and Mitigation Strategy. Blue Ireland does not submit that fisheries mitigation or cumulative displacement have been ignored. ^[17]

The residual mechanism identified by the Commission is displacement of fishing effort into neighbouring areas, with possible increases in fishing pressure and competition, particularly for smaller vessels with restricted operating ranges and in combination with the other Phase 1 projects.

Measures such as layout design, practical fishing corridors, coordination of works and maintenance of access can reduce displacement before it occurs. Liaison, research, economic support and monitoring can also be valuable, but they perform a different function. If future monitoring is required to discover where displaced effort actually relocates and whether pressure or competition on those receiving grounds becomes material, monitoring is doing more than verifying a quantified receiving-ground effect.

The Commission should therefore identify which committed measures reduce the displacement mechanism to the magnitude assumed in the assessment and which measures

principally observe, manage or respond to the consequences after displacement has occurred. The detailed receiving-ground and cumulative-capacity issue is addressed separately in the commercial-fisheries section of this observation.

4.8 Blue Ireland does not object to legitimate post-consent verification within an assessed envelope

The distinction above is important because Blue Ireland does not advance a general proposition that all post-consent design refinement or monitoring is impermissible.

For example, later selection of an onshore cable alignment can be compatible with a pre-consent ecological assessment where the maximum habitat or tree-loss envelope has already been quantified and the final route is constrained within that assessed worst case. Likewise, checking that the final turbine sound-power level remains within an airborne-noise envelope already modelled is a conventional verification exercise.

Those examples differ from the nearshore reef and offshore-bat examples because the latter involve questions about the receptor or exposure pathway itself. The distinction is therefore substantive rather than semantic: later verification of compliance with an assessed envelope is not the same as later evidence-gathering needed to establish the environmental premise on which the consent conclusion rests.

4.9 Adaptive mitigation requires sufficiently defined triggers and responses

Adaptive management can be a useful precautionary tool, but its environmental function depends upon the structure of the commitment. At minimum, the competent authority should be able to identify what will be monitored, by what method and frequency, what result constitutes a trigger, what mitigation follows, within what timescale, and how effectiveness will be verified and reported.

This does not mean that every numerical trigger must invariably be fixed at application stage. It does mean that an effect should not be downgraded on the assumption that future adaptive management will be available where neither the trigger nor the substantive management response has been sufficiently identified to demonstrate that the predicted environmental outcome will be achieved.

The bat example makes this especially clear: monitoring may be capable of supporting targeted, seasonal or weather-responsive measures, but the value of that monitoring as mitigation depends upon a defined route from evidence to action. The same logic applies to benthic receptors and other operational effects where future monitoring is relied upon as part of the environmental assurance.

4.10 Matters to be resolved before reliance is placed on post-consent monitoring and adaptive management

1. whether the Operational Monitoring Plan contains sufficient receptor-specific measures, methodologies, intervals, reporting arrangements and adaptive-management functions to answer FIR 1(d), rather than principally deferring those matters to post-consent consultation;

2. for each material monitoring commitment, whether the monitoring verifies an effect already adequately assessed before consent or is instead required to determine the receptor, exposure pathway, magnitude or mitigation upon which the consent conclusion depends;
3. whether the ecological character and spatial extent of the potential nearshore Annex I reef are sufficiently established before consent, or whether an enforceable worst-case avoidance envelope already excludes a material interaction without relying upon later ecological identification;
4. why no receptor-specific change to the benthic monitoring section was required after the Commission expressly requested reconsideration and the permanent habitat-loss assessment was revised upward;
5. whether offshore-bat migration, rotor-height exposure and operational interaction are sufficiently characterised to support the present negligible-effect conclusion, and, if operational monitoring is relied upon, what predefined trigger and mitigation response will apply if exposure proves materially greater than assumed;
6. in commercial fisheries, which measures actually prevent or reduce displacement and which merely monitor or manage redistribution after it occurs, and whether receiving-ground capacity has been demonstrated independently of future monitoring;
7. whether any adaptive-mitigation commitment relied upon in the EIA or Natura conclusions has a sufficiently defined evidence-to-trigger-to-response pathway; and
8. whether consent conditions can ensure that later detailed design and monitoring remain within environmental envelopes already assessed, rather than requiring post-consent work to complete a material part of the assessment.

4.11 Conclusion

NISA has supplied a substantial monitoring framework and Blue Ireland does not suggest that every operational detail must be fixed before consent. The material concern is the role assigned to future work in several of the Applicant's own documents.

Where monitoring is used to verify an effect which has already been adequately characterised and to confirm compliance with an assessed worst-case envelope, it is an appropriate part of environmental management. Where future survey or operational monitoring is needed to establish whether a protected receptor is present, whether an exposure pathway exists, where an affected activity will redistribute, or what mitigation will be required, the competent authority should be satisfied that the environmental conclusion is not being deferred until after the project has been authorised or constructed.

In Blue Ireland's submission, FIR 1(d), the unresolved nearshore reef status, the unchanged benthic monitoring response and the offshore-bat migration/mitigation framework provide sufficient concrete examples for this issue to be treated as a principal cross-cutting matter in the determination of the NISA Further Information.

Cross-Cutting Issue A: Phase 1 Cumulative and In-Combination Assessment, Kittiwake Mortality and the Strategic Assessment Framework

A.1 Overview

Blue Ireland acknowledges that the Applicant has materially expanded its cumulative-effects assessment in response to the Further Information Request. The revised Chapter 38 treats Oriel, Arklow Bank 2, Codling Wind Park and Dublin Array as Tier 1 projects, and the Applicant states that it consulted the other Phase 1 developers and incorporated information from their planning applications. The Commission's request in this respect has therefore not been ignored.

The residual concern is more fundamental than the mere inclusion of the names of the other Phase 1 projects.

The five Phase 1 projects do not consistently assess the same ecological impact pathways using the same assumptions, screening rules, apportionment methods or population endpoints. As a result, project-specific assessments which may each appear internally complete do not necessarily aggregate into a scientifically coherent in-combination assessment of the total pressure upon the same protected population.

The treatment of kittiwake provides a particularly clear example.

A.2 The relevant question is total mortality upon the protected population, not the label attached to the pathway

For a breeding population associated with Wicklow Head SPA, mortality resulting from collision and mortality resulting from displacement are different causal pathways but the same demographic endpoint: an additional bird lost from the population. ^[23]

For the purposes of assessing the resulting population consequence, the relevant quantity is therefore conceptually the sum, across all relevant projects, of collision mortality plus displacement mortality and any other relevant mortality pathway, subject to appropriate and consistently applied apportionment, age-class, seasonal and mortality assumptions.

Blue Ireland does not suggest that collision and displacement must be treated as scientifically identical mechanisms. They should not. Collision is direct mortality risk; displacement mortality is an inferred consequence of habitat exclusion or reduced fitness and carries different uncertainty.

Those pathways must be brought together for the demographic assessment.

The combined assessment should estimate additional annual mortality affecting the same SPA population across the relevant Phase 1 projects.

The available Phase 1 material indicates that this question is not presently answered on a common basis. The available assessments instead contain a mixture of collision-only estimates, combined collision-and-displacement estimates, projects which calculate displacement but do not carry it through, projects which reject the pathway, differing mortality assumptions and differing apportionment methods.

A.3 NISA now quantifies kittiwake displacement, but does not combine it with collision mortality in the PVA

This issue is directly relevant to NISA itself. ^[23]

The Commission disagreed with NISA's original screening-out of kittiwake displacement and required the Applicant to undertake the displacement-matrix exercise. NISA has complied in the sense that its 2026 material now calculates displacement using the Commission-requested 30% displacement rate with 1% to 3% mortality sensitivities. Those calculations produce non-zero predicted mortality.

The important point, however, is what happens afterwards.

NISA's PVA treatment considers separately displacement at 30% displacement / 1% mortality, displacement at 30% / 3%, and collision mortality. It does not then run a scenario combining collision mortality plus displacement mortality.

The PVA outputs preserve those pathways as separate scenarios. Blue Ireland has identified no Wicklow Head SPA kittiwake PVA within NISA's kittiwake PVA material.

That is a material distinction. Separate findings that collision alone does not produce an unacceptable population consequence, and displacement alone does not produce an unacceptable population consequence, do not necessarily demonstrate that collision plus displacement together do not produce an unacceptable population consequence. That conclusion has to be tested.

A.4 The problem becomes clearer when the five Phase 1 projects are compared

The inconsistency is not confined to NISA. ^[23]

The current Phase 1 evidence shows materially different treatment of the same kittiwake impact pathway.

Codling calculates a Wicklow Head SPA displacement contribution of approximately 0.221 breeding adults per annum under its selected 30% displacement / 1% mortality scenario, yet its revised in-combination kittiwake PVA is based upon collision mortality rather than a combined collision-and-displacement total.

Dublin Array expressly assesses combined collision and displacement scenarios.

Arklow Bank 2 was asked by the Commission to assess 30% displacement with 1% to 3% mortality and to consider displacement in conjunction with collision risk. It produced displacement matrices showing non-zero mortality but then stated that, because it considered kittiwake displacement scientifically inappropriate, those outputs were not carried through into its EIAR/NIS analysis.

Oriel's revised material similarly produces small but non-zero Wicklow Head displacement contributions, but applies project-alone screening criteria before deciding which SPA contributions enter its in-combination assessment.

NISA now also produces non-zero kittiwake displacement mortality, but its collision and displacement PVAs remain separate and no Wicklow Head kittiwake PVA has been identified.

The result is that the Phase 1 projects are not presently presenting one consistently defined kittiwake mortality endpoint.

A.5 A pathway which is not carried through is not equivalent to zero mortality

The distinction is particularly important where a developer disagrees with the ecological pathway.

Arklow's displacement matrices produce positive mortality values before SPA apportionment, but those results are not carried through because that applicant disputes the scientific applicability of displacement to kittiwake.

For the in-combination assessment, the distinction is important.

An effect omitted from the final population calculation should not be treated as zero without a scientific reason for its exclusion.

Where another project has generated evidence of a positive impact pathway affecting the same protected population, the competent authority cannot simply treat that contribution as absent because the originating developer ultimately disagreed with the pathway.

The relevant Article 6(3) question is whether, on the best scientific evidence available, the pathway can be excluded beyond reasonable scientific doubt. That question must be determined consistently across the combined assessment.

A.6 Individually small contributions should not disappear before aggregation

A related problem arises where small project-alone contributions are screened out before the combined effect is calculated.

Oriel's material, for example, predicts a small but positive Wicklow Head kittiwake displacement contribution and then excludes it from its in-combination displacement assessment because it falls below specified project-alone thresholds.

Such a screening approach may be proportionate in some EIA contexts, but particular caution is required under Article 6(3). The very purpose of an in-combination assessment is to determine whether individually small pressures become material when combined.

If project A removes a small positive contribution because it is individually small, project B removes another, project C separately removes another small value, and so forth, there is a risk that no assessment ever evaluates their sum against the protected population.

Blue Ireland therefore submits that a positive mortality contribution should not be excluded from the final aggregation solely because it is small when the originating project is viewed in isolation, where the same population is simultaneously subject to mortality from several major developments.

A.7 The Codling comparison demonstrates why a common endpoint is necessary

The current Codling assessment provides a useful illustration. Its revised Wicklow Head collision table imports annual contributions from Arklow, NISA, Dublin Array and Codling and produces a total of approximately 8.04 adult kittiwakes per annum. That collision-only input is then used in its population modelling.^[23]

But the underlying projects do not all treat displacement consistently.

The cross-project comparison presently shows:

- Codling: collision plus a separately quantified displacement contribution;
- Dublin: combined collision and displacement assessment;
- Arklow: non-zero displacement matrices but the pathway is not carried through;
- NISA: non-zero displacement mortality, but collision and displacement modelled separately;
- Oriel: non-zero displacement contribution, some of which is screened before in-combination analysis.

Accordingly, the figure labelled as cumulative collision mortality cannot by itself be taken to represent the complete Phase 1 mortality pressure upon the Wicklow Head population.

Blue Ireland also notes a reconciliation issue concerning the precise provenance of some imported figures. The numerical correspondence between Dublin Array's combined collision/displacement scenario and the Dublin figure used elsewhere is suggestive, but Blue Ireland does not presently state that this proves the cumulative table already contains Dublin displacement. That should be reconciled expressly rather than assumed.

A.8 The Commission should require one Phase 1 kittiwake reconciliation

Blue Ireland therefore submits that the Commission should require a single reconciliation across the Phase 1 projects. ^[23]

For each relevant SPA kittiwake population the reconciliation should identify, on a common basis:

- collision mortality;
- displacement/barrier-effect mortality at the Commission-requested sensitivities;
- seasonal treatment;
- adult/non-adult correction;
- breeding/non-breeding attribution;
- SPA apportionment factor;
- population denominator and census vintage;
- whether any positive contribution has been screened out and why;
- whether the imported figure represents collision only or collision plus another pathway; and
- the total annual mortality carried into the final PVA.

The resulting PVA should then test the summed annual effect without prior exclusion of positive contributions merely because each one is individually small.

For NISA specifically, this should include a combined collision-plus-displacement kittiwake scenario wherever both pathways affect the same population.

A.9 There is also a currency issue within NISA's cumulative assessment

A subsidiary question concerns the versions of the other Phase 1 projects used in NISA's June 2026 CEA. ^[8]

The Commission specifically required NISA not merely to identify Oriel, Arklow, Codling and Dublin Array as Tier 1, but to incorporate their published application documentation. NISA states that it has done so.

However, by the time NISA lodged its FI, Oriel's FI had already been submitted, Arklow's FI had already been submitted, and Codling's FI had been submitted earlier in June.

Blue Ireland has not identified a clear demonstration that all materially revised FI assumptions from those projects were incorporated into every relevant NISA cumulative calculation.

Blue Ireland would therefore not allege generally that NISA has failed to include those projects. It plainly has included them.

The more precise request is that the Commission verify the data vintage and exact source document used for each imported Phase 1 input. That is particularly important where the FI processes themselves changed assumptions concerning displacement, collision, marine mammals and cumulative effects.

A.9A North-West Irish Sea SPA and Rockabill SPA: screening should follow the population beyond the site boundary

The NIS Addendum screening table, Table A6.9, requires particular scrutiny. For a number of North-West Irish Sea SPA species, the stated basis for excluding in-combination effects appears to be that other offshore wind farms do not place turbines within the SPA itself. A protected bird does not cease to belong to the relevant SPA population when it travels outside the designated boundary. If that reasoning has been used to remove collision or displacement occurring elsewhere on the movement range of the same birds, it is not a sufficient assessment of the relevant population-level in-combination pathway. [28]

Blue Ireland therefore requests a receptor-by-receptor reconciliation of all 21 North-West Irish Sea SPA special conservation interests showing which impact pathways are taken forward, which are excluded, and the ecological reason for exclusion. Red-throated Diver appears to receive a different cross-boundary treatment. The Commission should explain that difference, particularly for Kittiwake, Guillemot and the other wide-ranging qualifying seabirds for which project-alone impacts or connectivity are acknowledged. The appropriate conclusion may differ between species, but it cannot rest solely upon a finding that no other turbines stand inside the SPA boundary. [28]

The same concern arises for the Roseate, Common and Arctic Terns of Rockabill SPA. Chapter 15, Table A15.91, lists Roseate Tern contributions for a substantial number of other Irish Sea projects as "Unknown", while others are entered as zero. The cumulative table also identifies a Dublin Array contribution and a NISA contribution. Before those totals are used to support a Rockabill no-adverse-effect conclusion, unknown effects should be dealt with through a justified evidence and uncertainty assessment, and any published effect on the same Rockabill birds from other Phase 1 projects should be reconciled. The absence of a published colony-specific figure is not equivalent to proof of zero mortality. [26,28]

A.9B Concurrent construction disturbance and accuracy of cumulative input tables

A further point arises from the removal of impact piling within NISA itself. The Applicant is entitled to remove NISA impact-piling disturbance from its cumulative assessment, since that

activity is no longer proposed. It does not automatically follow that pile driving at other Phase 1 projects is irrelevant to the total disturbance experienced while NISA undertakes UXO clearance, drilling, surveys and vessel operations. The Commission's requests concerning concurrent construction, masking and behavioural effects should be answered using plausible overlapping schedules and the combined pressures affecting the same marine-mammal receptors and SACs. [30]

The NIS Addendum is also reported to model simultaneous low-order UXO activity at NISA and Codling against the area of the Rockabill to Dalkey Island SAC exposed to disturbance. That scenario should be verified, including whether its modelled overlap is approximately 24% and what measures would prevent an ecologically significant overlap. Any reliance on the JNCC 2020 harbour-porpoise SAC guidance should identify the status and applicability of its daily and longer-term disturbance benchmarks. A statement that coincidence is unlikely should not substitute for a binding coordination measure if the integrity conclusion depends upon avoiding it. [28,30]

The Commission should also require a short reconciliation schedule for apparent transcription and summation issues in the cumulative ornithology tables, including Tables A15.50, A15.52 and A15.77 of revised Chapter 15. Discrepancies raised include repeated project rows, annual totals which may not equal the visible component values, and projects with reported annual mortality but no seasonal breakdown being excluded from seasonal sums. These are matters for verification against the underlying project data, not findings by Blue Ireland that a particular corrected cumulative value has already been established. [26]

A.9C Migratory-bird barriers must be considered across the route and the combined arrays

A further cumulative pathway concerns migratory-bird barrier effects across the Irish Sea. The energetic or ecological consequence of a barrier to a migrating bird depends in part upon the route through the wider Irish Sea and the position of other wind-farm arrays. A diversion around one development may be minor, yet a succession of diversions or changes to access corridors may create a different cumulative effect. Assessment of the footprint or project-alone magnitude of each array does not by itself establish the combined route-scale effect. [45]

Blue Ireland acknowledges that NISA has revised its migratory-bird assessment and includes other Phase 1 projects in the CEA. The point is not that all migratory-bird species necessarily suffer material barrier effects, nor that the present material contains no discussion of them. The Commission should nevertheless identify where the cumulative assessment evaluates plausible movement routes through or around the full Phase 1 configuration, including repeated route changes, additional travel distance and energy expenditure, timing and weather sensitivity, and interactions with collision exposure. This is particularly relevant where actual passage direction and altitude through the NISA array remain insufficiently characterised by the substitute field evidence discussed under Principal Issue 2. [5,8,45]

A project-alone designation of an effect as negligible or imperceptible should not be the sole reason for excluding a credible route-scale cumulative pathway. Where the Applicant considers that the multi-array configuration cannot materially alter migration, that conclusion should be supported by the route geometry, species behaviour and evidence used to exclude

the effect. The test remains the relevant ecological and protected-site endpoint, not the aggregation of unlike impact metrics.

A.10 The kittiwake inconsistency illustrates a wider strategic problem

The kittiwake issue should not be viewed as an isolated ornithological bookkeeping problem.

It demonstrates a broader feature of the present Phase 1 regime: several very large offshore developments are being assessed through separate project-level processes, with each developer making its own methodological decisions as to which ecological pathways are accepted, which pathways are screened out, which mortality or disturbance thresholds are used, which population denominators are selected, which effects are carried into PVA/iPCoD, and when a contribution is considered too small to include.

Where all those projects affect the same mobile populations and Natura sites, project-by-project methodological differences can themselves become an in-combination assessment problem.

That would be less concerning if a recent strategic assessment had already established a coherent environmental envelope for the present Phase 1 programme.

That is not the strategic history recorded in the OREDP materials.

A.11 The OREDP did undergo SEA and Appropriate Assessment: the issue is that it is not an updated assessment of the present Phase 1 programme

Blue Ireland does not submit that offshore renewable development in Ireland has never undergone strategic environmental assessment.^[22]

The 2014 Offshore Renewable Energy Development Plan was subject to SEA and Appropriate Assessment. The original SEA expressly distinguished strategic assessment from project-level EIA and recognised that plans and programmes require evaluation of cumulative, long-term and strategic environmental effects.

The problem is different. The OREDP assessment was developed around an earlier set of development scenarios, environmental baselines, technology assumptions and data limitations. The current Phase 1 programme has subsequently developed at materially different scale, location and project specificity.

The OREDP SEA itself recognised significant data gaps and uncertainty, including uncertainty concerning mobile protected species, habitat disturbance, breeding/feeding areas, migration and collision risk.

Its higher development scenario was therefore expressly qualified rather than unconditional. The SEA stated that uncertainties and unknowns remained which could give rise to significant adverse effects and that those uncertainties were to be controlled through strategic and project-level mitigation.

A.12 The strategic environmental conclusions depended upon mitigation and monitoring

This is important.^[22]

The OREDP SEA did not merely identify development capacity and leave all environmental risk to later individual projects. It established a strategic mitigation structure.

The SEA described plan-level mitigation as including the filling of strategic data gaps and a “deploy and monitor” approach designed to control the scaling-up of commercial development so that evidence concerning environmental effects could be obtained before development was extended to full commercial scale.

Its actions included monitoring significant environmental effects; collating and disseminating environmental information; taking SEA/AA location and constraint findings into account in consenting; requiring project monitoring; considering incremental deploy-and-monitor development; preparing national EIA guidance; and establishing a GIS evidence base.

The SEA also expressly envisaged a periodic review which would ask whether new information required the SEA to be updated, whether the development target remained environmentally realistic and whether new areas required further strategic assessment.

That context matters because the original strategic conclusion cannot properly be detached from the mitigation, monitoring, learning and review architecture upon which it was based.

A.13 The OREDP Appropriate Assessment itself recognised unresolved strategic uncertainty

The Natura assessment is particularly relevant to the present in-combination issue. ^[22]

The OREDP NIS recorded that, because of strategic-level limitations, it was not possible to conclude that there would be no likely significant effects for a number of marine-mammal and Natura-site pathways. It therefore relied materially upon actions requiring later developers to demonstrate at project level that Natura-site integrity would not be adversely affected.

The OREDP framework also recognised the need to consider in-combination effects as policy evolved and project locations became clearer. The source materials record commitments that state bodies would consider in-combination effects in future decision-making and that siting would need to be considered in combination in relation to migratory routes.

That makes the quality of the present project-level in-combination assessment particularly important.

If strategic uncertainty was expressly deferred to later project assessment, then the later assessment cannot itself be fragmented in a manner that prevents the combined ecological burden from being calculated.

A.14 The present Phase 1 programme has not been tested through an equivalent updated strategic exercise

Blue Ireland’s point should therefore be formulated carefully. ^[22]

It is not: there has been no SEA or plan-level AA.

Rather, Blue Ireland has not identified a completed updated strategic SEA and plan-level Appropriate Assessment directed specifically to the present Phase 1 programme as now

configured, using the present environmental baseline and the actual locations, scales and cumulative pressures of the current projects. ^[22]

The earlier Blue Ireland evidence identifies substantial changes since the OREDP assessment, including newly designated European sites, changes in environmental baselines, increased survey and shipping/noise pressures and the subsequent identification of the present Phase 1 project locations.

The OREDP strategic assessment itself contemplated an incremental development approach precisely because data and knowledge gaps existed and environmental learning was expected to accompany scaling-up.

In that context, individual project AAs cannot simply be assumed to substitute automatically for a coherent strategic assessment if the project assessments themselves employ materially inconsistent impact pathways and population endpoints.

A.15 The original OREDP cumulative assessment also warrants caution at the present scale

The OREDP SEA's east-coast cumulative assessment is also relevant context. ^[22]

The material relied upon by Blue Ireland records that the SEA's assessment of east-coast scenarios identified approximately 1.5 GW as associated with negligible effects in the tested east-coast scenarios, while higher development scenarios included findings characterised as negative or unknown/significant adverse for environmental receptors.

That does not establish a legal "1.5 GW cap", and Blue Ireland does not rely upon it as one.

It does, however, show that the strategic assessment itself anticipated increasing environmental concern as development scale increased. It reinforces the need for the mitigation, monitoring, review and cumulative-assessment mechanisms which accompanied that SEA.

A.16 This is why the Phase 1 inconsistency is environmentally material

The relevance to NISA is therefore direct.

If there were a recent strategic Phase 1 assessment which had already reconciled the projects' methodologies; established common ecological endpoints; assessed the combined effects upon each relevant SPA/SAC population; considered environmental carrying capacity; applied common assumptions concerning displacement, mortality and disturbance; and established programme-level mitigation, then some project-level methodological variation might be of lesser consequence.

In the absence of an identified completed strategic assessment performing that reconciliation for the present Phase 1 programme, the project-level in-combination assessment becomes the mechanism through which the cumulative environmental effect must be demonstrated. ^[22]

The kittiwake comparison indicates that it is not yet doing so consistently.

The same broader concern can arise for marine mammals, where different projects may use different disturbance ranges, sound metrics, recovery assumptions and population models,

and where successive construction activity may affect the same mobile population over a prolonged regional development programme.

A.16A Sequential marine-mammal displacement across the regional construction programme

Successive surveys and construction activities at different Irish Sea projects may create serial or rolling disturbance for marine mammals. This needs to be examined for NISA on the basis of its revised construction methods, including the removal of WTG impact piling. Its remaining sources include UXO clearance, OSP drilling where selected, construction vessels, cable works and operational noise. Other projects may generate different and more extensive sound fields. The purpose of a combined assessment is to examine the pressures actually experienced by the animals, rather than to combine the labels assigned separately to each development. [8,11,36]

A finding that harbour porpoises may return following an individual operation does not demonstrate that they can return, feed or rest between successive activities across the region. Nor does demographic stability assessed at management-unit scale establish that habitat displaced from at one site is continuously available and functionally equivalent elsewhere. The cumulative assessment should therefore identify foreseeable periods of temporal overlap, areas subject to repeated exclusion, likely intervals of ecological recovery, and the availability of comparatively undisturbed habitat for animals displaced between projects. The assessment should distinguish credible effects supported by available project schedules from merely speculative future activities, and explain how uncertainty has been treated. [8,13,36]

A.17 Article 6(3) requires the combined effect to be resolved, not merely described as individually small

The legal significance is straightforward.

Article 6(3) requires assessment of a project in combination with other plans and projects where necessary to determine implications for the European site in view of its conservation objectives. [25]

Accordingly, the relevant scientific question is not whether every Phase 1 project's own contribution is independently large.

It is whether the aggregate pressure upon the same qualifying population or habitat can be excluded as an adverse effect on site integrity on the basis of complete, precise and definitive findings capable of dispelling all reasonable scientific doubt. [25]

A methodology under which Project A screens its positive contribution out because it is small; Project B rejects the pathway; Project C models the pathway separately from another source of mortality; Project D combines the pathways; and Project E applies a different apportionment or population denominator does not automatically produce a coherent combined result merely because all five projects appear somewhere in a cumulative-effects table.

A.18 Requested resolution

1. a common Phase 1 receptor-by-receptor reconciliation, beginning at minimum with kittiwake populations associated with relevant SPAs;
2. a common definition of the mortality endpoint being aggregated;
3. separate identification of collision and displacement/barrier mortality followed by a combined demographic assessment where both pathways affect the same population;
4. transparent identification of the project document and FI version from which every imported input is derived;
5. removal of project-alone screening rules which exclude positive contributions before they have been considered in combination, unless the Commission can demonstrate scientifically that exclusion cannot affect the final integrity conclusion;
6. consistent population denominators, census vintages, seasonal assumptions, age corrections and SPA apportionment methods, or an express reconciliation of justified differences;
7. a PVA based upon the summed annual Phase 1 mortality under appropriately precautionary scenarios;
8. equivalent reconciliation for other shared mobile receptors where project-specific methodologies materially differ;
9. explicit consideration of how the strategic uncertainties and mitigation commitments identified in the OREDP SEA/AA have been addressed in the present Phase 1 programme; and
10. confirmation that the absence of an updated programme-level SEA/AA does not leave any strategic cumulative effect unresolved or improperly displaced into inconsistent individual project assessments.

A.19 Conclusion

Blue Ireland does not suggest that NISA has failed to prepare a cumulative assessment. It has prepared a substantial revised CEA and has treated the other Phase 1 developments as Tier 1 projects.

The concern is whether that assessment reaches a common ecological endpoint.

For kittiwake, the presently available Phase 1 material shows collision and displacement being combined by some developers, separated by others, rejected by others and screened out by others. NISA itself now quantifies kittiwake displacement but does not appear to combine displacement mortality with collision mortality in its PVA, and no Wicklow Head kittiwake PVA has been identified.

That is precisely the kind of methodological fragmentation that a strategic environmental assessment and coherent in-combination assessment are intended to prevent.

In circumstances where the present Phase 1 programme has not itself been subjected to an updated strategic SEA and plan-level AA corresponding to its current scale, configuration and environmental baseline, the Commission should not assume that programme-level

cumulative effects have already been resolved elsewhere. They must be demonstrated through the assessments now before it.

Commercial Fisheries: Cumulative Displacement and Receiving-Ground Capacity

5.1 Overview

The Significant Further Information materially expands the commercial-fisheries assessment. The 2026 package includes a revised Commercial Fisheries Technical Report, a revised Fisheries Management and Mitigation Strategy (FMMS), revised cumulative-effects material and further consideration of co-existence. Blue Ireland therefore does not submit that displacement or cumulative fisheries effects have been ignored.

The residual concern is narrower. FIR 12 required the Applicant to address the possibility that fishing effort displaced from the proposed development would relocate into neighbouring grounds, increasing fishing pressure and competition there, with particular regard to smaller vessels whose operational range may prevent them from moving far beyond their principal area of activity. The Commission also required that mechanism to be considered cumulatively with the other Irish Sea Phase 1 projects.

That is a receiving-ground question. It is not answered solely by demonstrating that fishing grounds remain available somewhere within a broad regional study area or by listing the other Phase 1 projects within the cumulative-effects assessment.

5.2 Practical co-existence and the amount of effort actually displaced

NISA has adopted measures intended to facilitate continued fishing activity, including layout and corridor design, liaison, coordination and access-related measures. Those measures are relevant and may reduce displacement.^[17]

The remaining assessment is fleet- and method-specific. It should identify what proportion of the activity of each materially affected fleet can realistically continue within the operational array or export cable corridor, the spatial and safety constraints on that activity, and the proportion consequently assumed to relocate elsewhere.

The answer may differ materially between fishing methods. The practical implications of operating between turbines for a Nephrops otter trawler are not necessarily the same as those for whelk, crab or lobster potting, nor are the substitution options of a smaller inshore vessel necessarily equivalent to those of a larger offshore vessel. Accordingly, a general proposition that fishing can continue within parts of the wind farm does not by itself quantify retained versus displaced effort for the fleets which drive the impact assessment.

5.3 Alternative ground is not the same as receiving capacity

The Applicant's assessment has relied in part upon the availability of alternative fishing grounds when considering receptor sensitivity and impact magnitude. That proposition requires a further step where the effect under examination is displacement.^[17]

The existence of another ground capable of supporting the same target species does not itself establish that the ground is a realistic substitute. A receiving ground must also be accessible to the displaced vessel, compatible with its gear and target species, capable of being used in the relevant weather and operational conditions, and capable of absorbing additional effort without materially increasing competition, gear interaction or fishing pressure.

This distinction is particularly important for the smaller-vessel receptors expressly identified by the Commission. A replacement ground many kilometres away is not necessarily available in any meaningful operational sense to a vessel whose port, endurance, gear, target species, weather limitations and historical fishing pattern confine it to a smaller area.

Blue Ireland has not identified in the revised material a transparent fleet-specific chain which quantifies the amount of effort expected to be displaced, identifies the receiving grounds to which that effort is realistically expected to move, establishes the existing level of effort and available capacity in those grounds, and then assesses the additional competition or pressure created by that redistribution.

5.4 Phase 1 cumulative assessment must follow the redistribution mechanism

The revised cumulative-effects assessment treats the other Phase 1 offshore wind projects as high-priority cumulative projects. That is a substantial response to FIR 5 and FIR 12. The issue is whether the relevant fisheries mechanism has then been aggregated. ^[17]

For commercial fisheries, the cumulative pathway identified by the Commission is not simply NISA plus Oriel plus Codling plus Dublin Array plus Arklow appearing in the same project list. It is the possibility that effort displaced by several developments may move into the same or overlapping receiving grounds, producing combined additional competition and fishing pressure there.

A coherent cumulative assessment should therefore permit the Commission to trace, for each materially affected fleet: existing effort; the proportion realistically retained within each project area; the effort displaced; the likely receiving grounds; existing effort and capacity in those grounds; equivalent displacement from the other relevant Phase 1 projects; and the combined consequence for competition, fishing pressure and gear interaction.

Blue Ireland has not identified a transparent shared receiving-ground aggregation of that kind. The inclusion of all Phase 1 projects in the CEA does not, without that mechanism, establish that their fisheries effects have been combined in the way specified by FIR 12.

5.5 Mitigation which reduces displacement should be distinguished from monitoring or management after displacement

The revised FMMS contains substantial management material. Blue Ireland does not suggest that those measures are without value. The relevant distinction is the environmental function performed by each measure. ^[17]

Some measures may reduce displacement itself: maintaining practical access, designing workable corridors, coordinating works and minimising exclusion periods can reduce the quantity of effort that must relocate. Other measures - such as liaison, information exchange, research, economic support or monitoring - may principally manage, document or respond to consequences after displacement occurs.

Both categories can be appropriate. They should not, however, be treated as interchangeable where the predicted impact magnitude depends upon the amount of effort displaced and the pressure placed upon receiving grounds. A measure which observes where fishing effort relocates after the event does not by itself demonstrate that the redistribution mechanism has been reduced to the magnitude assumed in the assessment.

If the extent and destination of displacement remain matters to be established through future monitoring, the Commission should distinguish monitoring which verifies a quantified prediction from monitoring which is still required to discover the scale or location of the environmental and socio-economic response. That is the same distinction addressed under Principal Issue 4.

5.6 Matters to be resolved

1. the proportion of fishing activity expected realistically to remain within the operational array and export cable corridor for each materially affected fleet and method;
2. the amount of effort assumed to be displaced for those fleets;
3. the specific receiving grounds to which that effort is expected realistically to relocate;
4. the accessibility of those grounds to the smaller-vessel receptors identified by the Commission;
5. the existing level of effort, operational capacity and potential for additional competition or gear interaction within those receiving grounds;
6. the combined redistribution of fishing effort from the relevant Phase 1 projects into the same or overlapping receiving grounds; and
7. which committed FMMS measures actually reduce displacement or receiving-ground pressure, as distinct from measures which monitor, manage or compensate for consequences after displacement has occurred.

5.7 Conclusion

Blue Ireland does not submit that the revised commercial-fisheries assessment or FMMS is absent. The remaining issue is whether the mechanism expressly identified by the Commission has been quantified: displacement from affected grounds, realistic relocation to receiving grounds, the capacity of those grounds to absorb additional effort, and the cumulative pressure created when the Phase 1 projects are considered together.

Broad regional availability of fishing ground is not necessarily equivalent to accessible receiving capacity for the affected fleet. Before relying upon the residual-significance conclusions, the Commission should be able to trace the assessment through that complete redistribution pathway.

Ecosystem Functions, Cultural Services and Cumulative Assessment

6.1 Overview

FIR 4 expressly required two related exercises: an update to the EIAR assessing positive and negative effects upon ecosystem functions and services, including mitigation; and a synopsis

addressing ecosystem functions and services together with monitoring, adaptive management and decommissioning. ^[18]

NISA has produced Appendix A3.3, Ecosystem Functions and Services Assessment. That is a substantial response. However, the Applicant also states that it has not inserted a separate ecosystem-function assessment into the relevant EIAR Addendum chapters because it considers the existing receptor-level assessments to be sufficiently linked to ecosystem services.

The resulting question is therefore not whether ecosystem services are mentioned. It is whether the aggregation of separate receptor conclusions is scientifically and transparently equivalent to the ecosystem-function assessment expressly requested by the Commission.

6.2 Ecosystem function is a relationship between receptors, not merely a list of receptor effects

An ecosystem-function assessment should be capable of examining the relationships through which one environmental change propagates into another. Individual chapter conclusions can inform that exercise but do not automatically reproduce it. ^[18]

The physical-process and fish evidence provides a concrete example. Seabed hydrodynamics and sediment transport influence substrate composition; substrate composition determines the availability of habitat for strongly substrate-dependent species such as sandeel; those species contribute to prey and forage availability; and changes in prey availability may in turn affect seabirds, marine mammals and fisheries.

The significance of the chain is illustrated by NISA's own survey evidence showing materially different sandeel-substrate classifications between 2023 and 2025 and attributing that change to a highly mobile seabed. The ecological question is therefore not exhausted by separate findings that physical-process, benthic and fish effects are each individually below an EIA significance threshold. The Commission requested an assessment of the function and service provided by the system as a connected whole.

6.3 Provisioning and human-use services are also spatially connected

The commercial-fisheries issue provides the corresponding human-use example. Fishing grounds are not simply an economic receptor superimposed upon the marine environment. Their value depends upon the spatial distribution of target species, substrate, ecological productivity, access and the capacity of neighbouring grounds to absorb effort. ^[17,18]

Displacement of fishing effort can therefore alter the spatial pattern through which a provisioning and livelihood service is used. Where several Phase 1 projects displace effort into common receiving grounds, the cumulative effect may arise not only from the area physically occupied by each development but from the redistribution of use and pressure elsewhere.

That mechanism demonstrates why a receptor-by-receptor cumulative list is not necessarily equivalent to an assessment of ecosystem services. The service is produced through the relationship between ecological productivity, place, accessibility and human use.

6.4 Cultural ecosystem services and community sense of place

The same issue arises for cultural services. FIR 13(c) expressly required analysis of the Proposed Development's effect upon the coastal area's sense of place and cultural identity for local communities. FIR 13(d) separately required cumulative effects of Irish Sea projects to be considered in terms of cultural heritage and the cultural ecosystem services provided by the coastline and seascape. ^[18,19]

Blue Ireland acknowledges that the SLVIA methodology already refers to matters such as sense of place, historical, cultural and spiritual significance and landscape integrity when determining receptor sensitivity. The residual question is whether the community-cultural relationship identified by the Commission has itself been characterised and assessed, rather than appearing only as one consideration within visual-receptor sensitivity.

This point should be read together with FIR 4. Appendix A3.3 is stated to concern infrastructure and activities below High Water Mark. The cultural service identified in FIR 13(d), by contrast, is expressly provided by the coastline and seascape and is linked under FIR 13(c) to local communities. A below-HWM ecosystem-services synopsis cannot therefore simply be assumed to provide the complete assessment of that coastal cultural-service endpoint.

The Commission should be able to identify where the application assesses the cultural meaning and value of the affected coastal seascape to its communities, the attributes through which that service is provided, the project-induced change, the cumulative change arising from other Irish Sea developments, and the consequence for sense of place, cultural identity and cultural heritage.

6.4A Seascape magnitude and community significance

The revised visual material should also be reconciled with the specific response of sensitive north Fingal coastal viewpoints. The Chapter 29 Addendum identifies major-moderate visual effects at a number of locations, including Skerries, Loughshinny and Ardgillan, while the Applicant's chosen significance matrix treats major-moderate effects as below the EIA significance threshold. The Commission should be satisfied that the threshold has been properly justified, particularly where NISA draws on UK landscape and visual assessment guidance and where comparable practice may treat effects of that magnitude as significant depending on the receiving landscape and seascape. [32]

This is not an assertion that a particular turbine-to-shore distance automatically determines significance. The effect must be assessed for the actual viewpoints, horizon occupation, setting of Rockabill, night-time aviation lighting and the cumulative scale of turbines. Those findings should then be carried into the FIR 13(c) examination of tourism, community sense of place and cultural services, rather than being discounted merely because an overall visual conclusion has been classified as non-significant. [32]

6.5 Cumulative assessment should follow the function or service being affected

The same principle applies cumulatively. Including all relevant projects in a CEA project list does not necessarily assess the mechanism through which a shared ecosystem function or service changes. ^[18,19]

For substrate-dependent ecological function, the cumulative question may concern combined changes to habitat, prey and connectivity. For fisheries, it concerns combined redistribution into shared receiving grounds. For cultural services, it concerns the cumulative transformation of the coastline and seascape through which sense of place, cultural identity and heritage value are experienced.

Blue Ireland therefore submits that the Commission should identify a traceable function- or service-specific pathway through the revised assessment, rather than assuming that separate non-significant receptor conclusions necessarily demonstrate absence of a material cumulative effect upon the connected ecosystem function or service.

6.6 Monitoring, adaptive management and decommissioning

FIR 4 also expressly linked the ecosystem-functions synopsis to monitoring, adaptive management and decommissioning. NISA's operational monitoring material states that no ecosystem-functions/services monitoring is proposed because no material effect is predicted.

That conclusion depends upon the adequacy of the function-level assessment which precedes it. If the assessment has principally inferred ecosystem-function outcomes from separate receptor chapters, the Commission should be satisfied that the relevant connected functions and services have actually been bounded before concluding that no function-specific monitoring or adaptive response is required.

This does not mean that every ecosystem service requires a separate monitoring programme. It means that the decision not to monitor should follow from an adequately characterised function and impact pathway rather than substitute for one.

6.7 Matters to be resolved

1. where the EIAR itself contains the requested assessment of positive and negative effects upon ecosystem functions and services, or why the standalone synopsis and receptor-level chapters are considered scientifically equivalent to that exercise;
2. how the assessment integrates physical processes, benthic habitat, substrate-dependent fish habitat, prey/forage availability and dependent ecological receptors as connected functions rather than isolated chapter conclusions;
3. how the provisioning and human-use service associated with commercial fisheries is assessed where displacement changes the spatial pattern of use and pressure;
4. where the effect upon local-community sense of place and cultural identity requested under FIR 13(c) is characterised independently of ordinary visual-receptor sensitivity;
5. where the cumulative cultural ecosystem services of the coastline and seascape requested under FIR 13(d) are assessed across the complete coastal system rather than only below High Water Mark; and
6. how the conclusions concerning monitoring, adaptive management and decommissioning follow from a demonstrated function- and service-level assessment.

6.8 Conclusion

Blue Ireland acknowledges the preparation of Appendix A3.3 and does not contend that ecosystem functions and services have been ignored. The residual issue is whether the specific assessment requested by the Commission has been carried through the EIAR in a

manner which captures relationships between receptors, spatial redistribution of ecosystem use, community-cultural value and cumulative effects.

The distinction is important because an ecosystem function or service can be materially affected through a connected pathway even where no single receptor chapter, considered in isolation, crosses its ordinary significance threshold. The Commission should therefore be satisfied that the connected ecological, provisioning and cultural-service endpoints have been assessed before relying upon the existing function-level conclusions.

Brú na Bóinne: Outstanding Universal Value and Integrity

7.1 Overview

Blue Ireland acknowledges that the Significant Further Information contains substantial additional seascape and visual material, including revised Chapter 29 material, additional viewpoint assessment, cumulative visual assessment and further photomontages. The residual issue under FIR 13(b) is therefore not an absence of visual evidence.

The Commission required the Proposed Development to be assessed having regard to the World Heritage Convention, the UNESCO 2022 Guidance and Toolkit for Impact Assessments in a World Heritage Context, the 2023 UNESCO guidance concerning wind-energy projects in a World Heritage context and relevant offshore case studies. That request changes the assessment endpoint. The question is not simply whether turbines are visible from a selected viewpoint or whether the resulting visual effect is slight, moderate or significant in ordinary Seascape, Landscape and Visual Impact Assessment (“SLVIA”) terms. It is whether the development, individually and cumulatively, affects the Outstanding Universal Value (“OUV”) and integrity of Brú na Bóinne through the attributes which convey that value.

7.2 The World Heritage endpoint is OUV and integrity, not visibility alone

The UNESCO methodology is attribute based. It requires the assessment to identify the values and attributes which convey OUV, identify the project change capable of affecting those attributes, and evaluate the consequence for the World Heritage property and its integrity.

[19,20]

For Brú na Bóinne, the relevant attributes extend beyond the visibility of an individual monument. The World Heritage material identifies the extensive ritual and funerary landscape, views into and out of the property, the astronomical relationships of the monuments, stories and associations with Ireland's ancient past, and the ambiance of the ritual centre. The property's integrity is also connected to the protection of important views and visual relationships within and out of the World Heritage landscape.

The assessment should trace the relevant sequence from the OUV and the attributes which convey it, through the setting, view, relationship or association potentially affected, to the change caused by NISA and the resulting consequence for the attribute and for OUV and integrity. That is different from the conventional SLVIA sequence of viewpoint, receptor sensitivity, magnitude of visual change and significance.

7.3 Absence of visibility from one monument cannot determine the whole World Heritage question

Blue Ireland accepts that Newgrange itself may have no or very limited theoretical visibility of the Proposed Development. That is relevant evidence and should not be disregarded. It does not, however, determine the effect upon the World Heritage property as a whole. ^[19,20]

Brú na Bóinne comprises Newgrange, Knowth, Dowth and the wider ritual landscape. The original NISA material itself recognised partial visibility at Dowth and other views associated with the property. The World Heritage evidence also treats mapped views into and out of the property and the wider ambiance of the ritual centre as relevant to integrity. The appropriate question is therefore not simply whether a turbine can be seen from a particular point at Newgrange, but whether the introduction of a large offshore wind array into the eastern or seaward skyline and wider setting changes any attribute through which OUV is conveyed.

7.4 The 2026 response must make the attribute-based assessment traceable

The Further Information plainly expands the conventional visual evidence base. Blue Ireland does not contend that FIR 13(b) required a separately titled World Heritage report, and the absence of a standalone appendix would not itself be a defect. Substance rather than document title is determinative. ^[19,20]

The residual concern is traceability. Blue Ireland has not identified a clearly expressed chain demonstrating, for each potentially affected World Heritage attribute, the sensitivity of that attribute, the change caused by NISA, the significance of that change for the attribute, and the resulting consequence for OUV and integrity. Additional photomontages and viewpoint conclusions do not, without that further reasoning, necessarily answer the World Heritage question posed by the Commission.

The Commission should therefore identify expressly where the revised assessment applies the requested UNESCO methodology to Brú na Bóinne's OUV and attributes, rather than treating the expanded SLVIA alone as sufficient.

7.5 Cumulative technological change must also be assessed against the World Heritage attributes

The cumulative dimension is particularly important. UNESCO's wind-energy guidance identifies cumulative technological development, important views, panoramas, visual relationships, topography and scale contrast as matters capable of affecting the attributes through which World Heritage value is conveyed. ^[19,20]

This issue also connects directly with FIR 13(d) and the wider cultural-ecosystem-services section of this observation. The relevant cumulative question is not merely whether multiple wind farms can be depicted within a combined Zone of Theoretical Visibility ("ZTV") or photomontage. It is whether the combined transformation of the wider landscape and seascape affects the views, setting, ambiance, associations or other attributes through which Brú na Bóinne's OUV and integrity are experienced and maintained.

The assessment should therefore identify the relevant existing, permitted and reasonably foreseeable projects and determine the cumulative consequence for the World Heritage

attributes themselves, not only the cumulative magnitude of visual change at selected representative viewpoints.

7.6 Matters to be resolved

1. where the revised assessment identifies the specific attributes which convey Brú na Bóinne's Outstanding Universal Value and integrity;
2. which of those attributes are capable of being affected by the Proposed Development's scale, setting, eastern or seaward skyline presence, visual relationships or cumulative technological development;
3. how the project-induced change to each potentially affected attribute has been assessed under the UNESCO methodology required by FIR 13(b);
4. how the resulting consequence for OUV and integrity has been distinguished from ordinary SLVIA significance at individual viewpoints; and
5. how cumulative effects from the other relevant Irish Sea and landscape developments have been tested against the same OUV and integrity endpoints.

7.7 Conclusion

Blue Ireland does not submit that the Applicant failed to provide additional visual assessment. The residual issue is whether that substantial material has been translated into the World Heritage assessment expressly required by the Commission.

Before relying upon the conclusion that Brú na Bóinne is not materially affected, the Commission should be able to trace the assessment from the property's OUV and attributes, through the project change individually and cumulatively, to the consequence for those attributes and for the integrity of the World Heritage property. A conclusion based only upon visibility or conventional viewpoint significance would not transparently demonstrate that exercise.

Gas Interconnector 2: Major-Accident Risk Classification

8.1 Overview

Blue Ireland acknowledges that the Significant Further Information materially improves the treatment of the Scotland-Ireland Gas Interconnector 2 ("IC2"). The Applicant has corrected the earlier Navigational Risk Assessment statement that no subsea pipeline lay within two nautical miles, has quantified IC2's proximity to the offshore development, has consulted Gas Networks Ireland ("GNI"), and states that a DNV-RP-F107 pipeline-protection assessment demonstrates that the residual risk is tolerable and as low as reasonably practicable ("ALARP").

Blue Ireland therefore does not maintain that IC2 has been ignored. The remaining issue is a specific internal inconsistency in the revised major-accident assessment which is capable, on NISA's own risk matrix, of moving the relevant events across the significance threshold.

8.2 The revised assessment introduces three IC2 major-accident events

The revised Chapter 34 introduces three events concerning damage to IC2: C29 during offshore construction, O19 during operation and D17 during decommissioning. The initiating mechanisms include dropped or dragged anchors and dropped objects. ^[21]

For each event, NISA assigns Likelihood 2, Consequence 3 and therefore a risk score of 6. On the Applicant's matrix, a score of 1-6 falls within the green/low category and is treated as below the threshold requiring further significant-effect assessment and mitigation.

8.3 The stated consequence description corresponds to a different rating

The difficulty is that the wording used to support the assigned Consequence Rating 3 includes the description 'Community functioning poorly, minimal services available'. Under the consequence methodology reproduced in the Applicant's own assessment, that wording corresponds to Consequence Rating 4 - Very Serious. Rating 3 instead describes a community only partially functioning, with some services available. ^[21]

Blue Ireland does not submit that this proves that Consequence Rating 4 must necessarily be the correct technical classification. It is possible that the Applicant intended Rating 3 but inserted the Rating 4 descriptor in error. The point is that either the numerical rating or the supporting consequence description requires reconciliation before the significance conclusion can safely be relied upon.

8.4 The discrepancy is potentially significance-determinative under NISA's own matrix

The distinction is not merely semantic. Under the Applicant's risk matrix: ^[21]

A likelihood score of 2 and consequence score of 3 produce a risk score of 6, classified as green/low. If the consequence score is 4, the same likelihood produces a risk score of 8, classified as amber/medium.

The revised assessment states that amber and red events are regarded as presenting a risk of significant effects and are brought forward for further consideration and assessment of mitigation. Accordingly, correcting the apparent inconsistency from a consequence score of 3 to 4 would move each IC2 event from the non-significant green category into the amber category under the Applicant's own methodology.

That potential change propagates directly into significance, mitigation and residual-effect conclusions. Chapter 34 presently records no corresponding change to the mitigation and monitoring section for these new IC2 events. That position logically depends upon the score-6 classification being correct.

8.5 The existing interconnector assessment reinforces the need for a transparent explanation

The original major-accident assessment already considered damage to Interconnector 1 or 2 during construction of the onshore cable crossing. That event was assigned Likelihood 2, Consequence 4 and Risk 8 and was placed in the amber/medium category. ^[21]

The offshore and onshore scenarios are not identical. Their initiating mechanisms, exposure of people, physical protection and probabilities may differ materially. Blue Ireland therefore does not submit that the offshore events must automatically inherit the same consequence

score. The relevance of the comparison is narrower: the same critical gas-transmission infrastructure receives a lower consequence rating offshore while the revised offshore table reproduces the consequence descriptor associated with the higher rating. The technical basis for that distinction should therefore be explicit and internally consistent.

8.6 The DNV assessment and GNI response should be traceable

The Likelihood 2 and ALARP conclusions rely materially upon the DNV-RP-F107 pipeline-protection assessment and the mitigation said to arise from it. The Applicant also states that the assessment was shared with GNI. ^[21]

Blue Ireland has not identified the underlying DNV assessment itself as a separately traceable document within the Further Information material reviewed, nor an express statement demonstrating GNI's final acceptance of the completed assessment and its particular mitigation or ALARP conclusion. If that material is before the Commission elsewhere, its location and status should be identified.

This is not a request to reopen the corrected proximity issue. It is a request that the technical premises doing the work in the likelihood and ALARP conclusions - the assumed anchor/object interaction risk, pipeline protection, separation, mitigation and GNI response - are available and traceable to the decision-maker.

8.7 Matters to be resolved

1. whether Consequence Rating 3 or the Rating-4 consequence description is the intended and technically justified classification for C29, O19 and D17;
2. whether reconciliation of that inconsistency changes the risk score from 6 to 8 and therefore changes the significance and mitigation pathway under NISA's own matrix;
3. the technical basis for any difference between the offshore IC2 consequence classification and the existing consequence-4 assessment concerning damage to the same interconnector infrastructure;
4. where the DNV-RP-F107 assessment and its underlying assumptions and mitigation measures are available for review; and
5. whether GNI has reviewed and accepted the final technical assessment and the mitigation/ALARP conclusion relied upon by the Applicant.

8.8 Conclusion

The Interconnector 2 issue is not a general allegation that the Applicant failed to consider the pipeline. It has substantially corrected that part of the original assessment. The residual point is narrower and potentially more consequential: the revised major-accident table contains a numerical consequence rating and a textual consequence description which appear to correspond to different categories under NISA's own methodology.

Because the difference between those categories changes the calculated risk from 6 to 8 and may move the events from green/low to amber/medium, the Commission should require that inconsistency to be resolved and the underlying DNV/GNI technical basis made traceable before relying upon the conclusion that IC2 damage presents no significant major-accident effect.

Further Supporting Matters: Onshore Effects, Decommissioning and Navigational Evidence

9.1 Onshore receptors at Bremeore and Balbriggan

The revised material should be considered with the planned housing and other sensitive receptors near the Bremeore grid facility. The Applicant identifies potentially significant construction noise and major visual effects at the closest planned residential land, but the response also relies upon screening planting which will take time to mature and upon assumptions about future development and access arrangements. Blue Ireland requests confirmation that any proposed acoustic enclosure, equipment specification, landscape screening and maximum construction-noise envelope have been assessed and made sufficiently enforceable, including for the adjoining Flemington plan lands. [33]

The remaining landfall and onshore route effects include identified archaeological constraints and prolonged construction traffic management through Balbriggan. Those matters should be resolved to the extent necessary before consent, with enforceable limits and consultation requirements for road closures, reinstatement and the protection or recording of archaeology. Blue Ireland does not suggest that every contractor-level traffic or archaeological implementation detail must be finalised at this stage. The requirement is that the environmental envelope and essential mitigation are established. [33]

9.2 Decommissioning and security for seabed rehabilitation

Revised Chapter 6 proposes that suction-bucket foundations may be cut beneath the seabed and retained, with scour protection also left in situ. Whether that is environmentally preferable must be determined by reference to the seabed habitat and protected-site objectives, rather than assumed from engineering practicability alone. The assessment should distinguish the amount of infrastructure expected to remain, the environmental consequences of full and partial removal, and any disturbance that would arise from reclamation. [27,34]

The Maritime Area Consent includes provisions for a rehabilitation schedule and financial security, but the schedule and secured amount should be identified and demonstrated to be adequate before the Commission relies on them to address decommissioning consequences. It would be premature to conclude that no financial security exists merely because the amount or final schedule is not publicly reproduced. Blue Ireland requests a costed, enforceable restoration and funding framework, including review of the financial provision over the operational life and a decision-making mechanism for any infrastructure proposed to remain. [34]

9.3 Navigation through the Rockabill Gap

The layout amendments were made in part to address concerns raised by the Irish Coast Guard and the Marine Survey Office. Where NISA reports the Marine Survey Office's acceptance of the revised navigation layout following a meeting, the Commission should identify the direct written confirmation or other reliable record establishing the precise layout and conditions accepted. This would provide clarity on safety for commercial, fishing and

recreational vessels using the Rockabill Gap and avoid reliance solely upon the Applicant's description of consultation. [35]

9.4 Migratory fish and electromagnetic fields: sensitive-species consequences

The electromagnetic-field (EMF) assessment should relate predicted field exposure to the responses of sensitive migratory fish. NISA's original Chapter 13 expressly considers Atlantic salmon, European eel and lampreys. It classifies salmon and eel as low-sensitivity receptors for the EMF pathway, while acknowledging that lampreys detect weak low-frequency electric fields and that the biological uses of this sensitivity remain incompletely understood. The significance of EMF exposure at NISA must be determined from its own cable design and species-specific evidence. [47]

The relevant question is whether the updated cable design, burial and protection envelope, including any sections where burial depth is constrained and surface protection is required, remains adequately assessed for the actual migratory species and behavioural functions at issue. The Commission should identify how the predicted field strengths and spatial extent are related to available evidence on migration, orientation, avoidance, delay and cable-crossing behaviour, and whether any sensitive species or life stage is obscured by a generic group-level conclusion. This is a supporting request for NISA-specific verification, not an assertion that the revised FI failed to provide EMF modelling or that any particular migratory response has been demonstrated.

Consolidated Requests to the Commission

Drawing together the detailed requests in the preceding sections, Blue Ireland respectfully submits that the Commission should require or establish the following before relying upon the Significant Further Information to determine the application:

1. Require the complete physical-process assessment requested under FIR 7, including the specified extreme-event/AEP range, operational suspended-sediment and deposition analysis, and a defensible long-term developed-versus-undeveloped morphodynamic assessment, with the consequences propagated into dependent ecological and Natura conclusions.
2. Reconcile the 2022 and 2025 benthic classifications, quantify permanent conversion against the spatial extent of the high-sensitivity *Maxmuelleria*-linked OSPAR receptor itself, and demonstrate how the temporal variability of sandeel substrate is addressed over the operational lifetime.
3. For offshore ornithology, identify the site-specific evidence supporting spring migratory passage and rotor-height exposure; resolve the Commission-requested March to July Guillemot sensitivity through SPA attribution and PVA; establish the complete Red-throated Diver displacement envelope and functional receiving habitat; and provide a traceable updated in-combination assessment using current Phase 1 evidence.
4. Revisit the site-selection conclusion under FIR 6, particularly where it depends on unresolved ornithological conclusions; distinguish the EIA requirement to describe and explain reasonable alternatives studied from any more stringent no-satisfactory-alternative inquiry that may arise under Article 16 for particular protected-species effects. [15,36]

5. For marine mammals, identify whether the actual drilled OSP pin-pile installation sequence is represented in the cumulative acoustic assessment, address successive exposure and incomplete recovery, distinguish PTS avoidance from TTS and behavioural disturbance, and assess the combined operational array soundscape and masking pathway at the receptor rather than only individual-source contours.
6. Determine whether the proposed construction, UXO, mitigation and operational activities comply with Regulation 51, considering deliberate disturbance under Regulation 51(2)(b) separately from possible deterioration of the ecological functionality of breeding sites and resting places under Regulation 51(2)(d). Where the evidence indicates non-compliance, apply Regulation 63(7) and address any necessary Ministerial Regulation 54 derogation, including its separate no-satisfactory-alternative, permitted-purpose and favourable-conservation-status requirements. [15,36,37]
7. Consider requiring updated iPCoD or another validated population-consequences model for the revised NISA disturbance regime, disclosing recovery and displacement assumptions, repeated exposure, functional receiving habitat and sensitivity to the relevant cumulative Phase 1 pressures, without treating a favourable model output as an answer to Regulation 51. [13,15,36]
8. Before consent, define the operational monitoring and adaptive-management measures that are relied upon to support the environmental conclusions, including monitoring methods, timing, reporting, thresholds and committed responses. Monitoring should verify an adequately assessed effect, not be used to discover after construction whether a fundamental receptor or exposure pathway exists. [1,15,25]
9. Ground-truth and resolve the ecological status of the nearshore rocky habitat/possible Annex I reef where avoidance and micro-siting are relied upon, and demonstrate the benthic monitoring response expressly requested after the permanent-habitat assessment was revised.
10. For offshore bats, resolve the migration/exposure evidence, apply the tidal-adjusted rotor-clearance values to the collision assessment, address the acknowledged inability of the site acoustic data to determine flight height, and establish a defined adaptive mitigation pathway (including appropriate triggers for curtailment or feathering if relied upon) rather than leaving both exposure and response to post-consent investigation.
11. Require a common Phase 1 receptor-level reconciliation for kittiwake and other materially shared receptors: identify collision and displacement/barrier mortality separately, use transparent and reconcilable apportionment and population inputs, do not discard positive contributions before in-combination aggregation merely because each is small in isolation, and test the summed demographic effect in an appropriate PVA.
12. Verify the exact version and data provenance of imported Phase 1 evidence used in cumulative calculations, including changes made by other projects during Further Information; identify relevant NISA site-investigation operations and the limits of any historical MMO/mitigation returns, and assess whether sequential activities could repeatedly exclude marine mammals from ecologically important areas. [8,36,38]

13. For commercial fisheries, identify the fleet-specific retained and displaced effort, realistic receiving grounds, existing effort and capacity in those grounds, accessibility for smaller vessels and the combined redistribution pressure generated by the relevant Phase 1 projects; distinguish measures that reduce displacement from those which merely monitor or manage its consequences.

14. Identify where the requested ecosystem-functions and ecosystem-services assessment is undertaken for the complete development and demonstrate the connected pathways between seabed function, prey resources, fisheries use, cultural identity, sense of place and cumulative cultural ecosystem services rather than relying only upon separate receptor-level significance conclusions.

15. For Brú na Bóinne, identify a transparent World Heritage assessment pathway from the property's OUV and the attributes that convey it, through the individual and cumulative change caused by the development, to the consequence for those attributes, OUV and integrity in accordance with the UNESCO methodology specified by the Commission.

16. Reconcile the Gas Interconnector 2 consequence rating and descriptor in Chapter 34, explain the basis for the resulting significance classification, and identify the underlying DNV-RP-F107 assessment and relevant Gas Networks Ireland response relied upon for the likelihood, mitigation and ALARP conclusions.

17. Where any of the above matters cannot be resolved on the evidence presently before the Commission, obtain the necessary further information before determination rather than transferring a significance-determinative baseline, exposure pathway or mitigation question into post-consent plans. For Article 6(3) matters, the assessment must be complete enough to dispel reasonable scientific doubt and any later parameters must be confined to matters capable of being controlled by conditions strict enough to guarantee no adverse effect on site integrity. If the required EIA, Article 6(3) or strict-species-protection conclusion cannot lawfully be reached, consent should not be granted on the present evidential record. ^[15,25]

Blue Ireland makes these requests in a precautionary but proportionate manner. Many aspects of the Significant Further Information materially improve the original application. The remaining matters identified above are those which, in Blue Ireland's submission, are capable of changing the environmental endpoint, the in-combination result, the mitigation required or the legal route by which the development could proceed.

Additional requests arising from the detailed examination of seabird and other receptor information are that the Commission reconcile Rockabill tern collision, flight-height, barrier and prey effects with the SPA conservation objectives; assess the full North-West Irish Sea SPA species list for in-combination effects across the birds' ranges; substantiate the choice of Bottlenose Dolphin denominator and the residual UXO injury-avoidance assumptions; clarify the seabed footprint and suction-bucket installation envelope; and establish enforceable conclusions for the principal seascape, onshore and decommissioning effects. The specific evidence and qualifications are set out in Sections 1.8A, 2.7B–2.8A, 3.7A, 4.6A, A.9A–A.9B, 6.4A and 9.1–9.3. The observation also requests clarification of the currency and precision of the Rockabill to Dalkey Island SAC Harbour Porpoise conservation objectives, source-appropriate biological effect ranges for geophysical surveys, route-scale cumulative migrant

barriers, fish life-stage exposure assumptions and species-specific EMF response. These are set out in §§1.8B, 3.11A–B, A.9C and 9.4 and should be resolved to the extent material to the revised NISA design.

Evidence References

The following references identify the principal documents relied upon in the body of this observation. Key pinpoint locations are included for the propositions most likely to be determinative. Page references are to the internal pagination of the cited NISA or official documents where stated; section and table references should be preferred where PDF pagination differs between published copies.

[1] An Coimisiún Pleanála, Request for Further Information, Item 1(d); NISA, Appendix A6.3, Operational Monitoring Plan, Table 1.1 and §§1.3-2.1 (pp. 4-8), including the statement that the OMP is a framework for a final post-consent OMP and that specific monitoring measures remain to be identified; §3.4 (p. 9) on benthic monitoring; §3.11 and Table 3.4 (p. 14) on offshore-bat monitoring.

[2] An Coimisiún Pleanála, Request for Further Information, Item 7; NISA, Addendum to Chapter 10, Marine Geology, Oceanography and Physical Processes, RFI response table at pp. 5-8 (Items 7(e), 7(p) and 7(q)); Appendix A10.3, Supporting Assessment Sensitivity Studies; and Appendix A10.2, Marine Physical Processes Numerical Modelling. These are the principal locations for the requested extreme-event/AEP envelope, construction-campaign SSC/deposition outputs and 40+ year developed-versus-undeveloped morphodynamic exercise.

[3] An Coimisiún Pleanála, Request for Further Information, Item 9(a)-(d); NISA, Addendum to Chapter 12, Benthic Subtidal and Intertidal Ecology: 2025 array biotope update at pp. 17-18 (10 of 11 sites classified as *Levinsenia/Heteromastus*); 2022 *Maxmuelleria* distribution and VER treatment at pp. 18 and 21-22; potential nearshore Annex I reef not ground-truthed at p. 21; long-term/permanent habitat-loss assessment at pp. 42-44, including c.0.58 km² / 0.46% for Option 1; and §12.6 at p. 45 recording no change to mitigation and monitoring measures.

[4] An Coimisiún Pleanála, Request for Further Information, Item 11; NISA, revised/addendum Fish and Shellfish Ecology material, including the 2023 and 2025 substrate evidence relied upon for sandeel habitat.

[5] An Coimisiún Pleanála, Request for Further Information, Item 8(a)(iv); NISA, Addendum to Chapter 15, Offshore Ornithology, and Appendix A15.7 migratory-bird material. Key issue: the Commission requested site-specific radar or similar evidence for peak spring and autumn migration; the additional project surveys and PAM evidence should be read with their stated limitations regarding abundance, direction and flight height.

[6] An Coimisiún Pleanála, Request for Further Information, Item 8(a)(ix); NISA, Appendix A15.6, Offshore Ornithology Population Viability Analysis: Tables A3-5 and A3-6 (pp. 17-18) for Project and Furness Guillemot displacement scenarios; Tables A4-5 and A4-6 (pp. 23-25) for the corresponding 35-year Guillemot PVA outputs. Read with the revised Chapter 15 breeding/non-breeding apportionment treatment.

[7] NISA, revised Red-throated Diver assessment within the Addendum to Chapter 15 and NIS material; North-West Irish Sea SPA conservation-objective material; NISA, revised Chapter 38 cumulative effects assessment and associated disturbance/displacement matrices.

[8] NISA, revised Chapter 38 cumulative effects assessment; Phase 1 project application/FI material relied upon by NISA for Oriel, Arklow Bank 2, Codling Wind Park and Dublin Array.

[9] An Coimisiún Pleanála, Request for Further Information, Item 6 (site selection and the North-West Irish Sea SPA); NISA, revised Planning Report/site-selection response and NIS conclusions.

[10] An Coimisiún Pleanála, Request for Further Information, Item 18; NISA response to the Isle of Man Territorial Sea Committee; revised ornithological transboundary material concerning designated Manx seabird sites.

[11] An Coimisiún Pleanála, Request for Further Information, Item 10; NISA, Appendix A14.4, Temporary Threshold Shift Position Statement: RFI 10(o) response at pp. 1-2; cumulative SEL/TTS discussion at p. 6; biologically meaningful/higher-level TTS and multi-day recovery discussion at p. 7. NISA, Appendix A14.5, Marine Mammal Mitigation Protocol: RFI 10(o) response at p. 7 (TTS not considered in the MMMP) and purpose of MMMP at p. 9 (primary aim directed to PTS). NISA, Appendix A14.1, Underwater Noise Assessment: §5.1 and Tables A5-3/A5-4 at pp. 14-16 (weighted SELcum non-impulsive TTS/AUD INJ results, including drilling). Read with the retained 2024 Appendix 14.1 where expressly carried forward.

[12] National Parks and Wildlife Service / Department of Arts, Heritage and the Gaeltacht (2014), Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters: §2.4, pp. 10-11 (TTS/PTS, temporary tissue damage and the potential for both disturbance and injury); §3.3, pp. 16-17 (risk assessment, including direct, indirect and cumulative effects, sensitive life-cycle periods and displacement from key functional areas). The Guidance is issued within the Regulation 71 strict-protection guidance framework.

[13] National Parks and Wildlife Service, Article 17 conservation-status reporting for harbour porpoise (2025); ObSERVE Phase II aerial-survey reporting; SCANS-III and SCANS-IV abundance estimates referred to in the assessment record.

[14] **van Geel, N. C. F., et al. (2026), “Impact of High-Order Unexploded Bomb Clearance on Harbor Porpoise Presence”, in The Effects of Noise on Aquatic Life IV, Springer Nature, DOI: 10.1007/978-3-031-94229-7_148-1. The study concerns four unmitigated UXO detonations at East Anglia ONE and is cited for its observed behavioural effects, not as a project-specific NISA effect estimate.**

[15] Council Directive 92/43/EEC, Articles 6(3), 12 and 16; European Communities (Birds and Natural Habitats) Regulations 2011, S.I. No. 477/2011, as amended: Regulation 42(16)-(17) (completion of Appropriate Assessment before consent and prohibition on deferring required AA information/completion); Regulation 51(2) (strict-protection prohibitions); Regulation 54(1)-(2) (Ministerial derogation and conditions); Regulation 63(7) (public authority not to grant consent where aware it would not comply with Regulations 51-53 unless the Minister has granted a Regulation 54/55 licence); and Regulation 71 (strict-protection guidance).

[16] An Coimisiún Pleanála, Request for Further Information, Item 15; NISA, Addendum to Chapter 35, Bats: Irish Sea route/flight-height evidence gaps and limitations of acoustic data

(including the stated inability to infer movement routes or flight height), blade-clearance values expressed above LAT, and the revised conclusion on curtailment/feathering. NISA, Appendix A6.3 OMP, §3.11 and Table 3.4 (p. 14), which identify as potential post-consent monitoring questions whether the wind farm affects offshore bat activity and whether established migratory routes pass through the operating wind farm.

[17] An Coimisiún Pleanála, Request for Further Information, Item 12; NISA, Addendum to Chapter 16, Commercial Fisheries; Appendix A16.1 technical fisheries material; Appendix A16.2 Fisheries Management and Mitigation Strategy; revised Chapter 38 cumulative assessment.

[18] An Coimisiún Pleanála, Request for Further Information, Item 4; NISA, Appendix A3.3, Ecosystem Functions and Services Assessment; relevant receptor-level EIAR addenda upon which that synopsis relies.

[19] An Coimisiún Pleanála, Request for Further Information, Item 13(b)-(d); NISA, Addendum to Chapter 29, Seascape, Landscape and Visual Impact Assessment; Appendices A29.1 and A29.2 and associated photomontage/night-time material.

[20] UNESCO (2022), Guidance and Toolkit for Impact Assessments in a World Heritage Context; UNESCO World Heritage Centre (2023), Guidance for Wind Energy Projects in a World Heritage Context; official Brú na Bóinne Statement of Outstanding Universal Value and Irish World Heritage attributes material.

[21] An Coimisiún Pleanála, Request for Further Information, Item 16; NISA, Addendum to Chapter 34, Major Accidents and Disasters, IC2 events C29/O19/D17 (construction/operation/decommissioning), assigned likelihood 2, consequence 3 and score 6 while using the descriptor “Community functioning poorly, minimal services available”; NISA 2024 Chapter 34 consequence scale and risk matrix (Rating 3 versus Rating 4; green 1-6 versus amber 8-12); revised Chapter 20/NMPF compliance material; and the DNV-RP-F107/Gas Networks Ireland material relied upon by the Applicant.

[22] Offshore Renewable Energy Development Plan (2014) and associated Strategic Environmental Assessment and Natura/Appropriate Assessment material, including the strategic mitigation, monitoring, data-gap, “deploy and monitor” and periodic-review commitments. This reference is used as strategic context; Blue Ireland does not contend that the 2014 OREDP lacked SEA/AA, but questions whether a completed updated exercise has reconciled the present Phase 1 programme as now configured.

[23] NISA and other Phase 1 kittiwake materials reviewed comparatively: NISA displacement and collision/PVA outputs; Codling Wind Park, Dublin Array, Arklow Bank 2 and Oriel application/FI material concerning collision, displacement/barrier effects, SPA apportionment and population modelling.

[24] NISA FIR Items 19-21 and associated revised onshore traffic, biodiversity and airborne-noise material, used principally for the compliance and verification schedules rather than as principal grounds.

[25] Court of Justice of the European Union, *Holohan and Others v An Bord Pleanála*, Case C-461/17, EU:C:2018:883: paras 33-35 (Article 6(3) certainty/no reasonable scientific doubt), paras 43-47 (all aspects affecting conservation objectives; later parameters only subject to

conditions strict enough to guarantee no adverse effect on site integrity), and paras 49-52 (no lacunae; complete, precise and definitive findings; explicit and detailed reasons where additional scientific information is recommended).

[26] NISA (2026), Addendum to Chapter 15: Offshore Ornithology, especially Tables A15.40, A15.77 and A15.91 and sections 15.5 and 15.9; NISA, Appendix A15.1 Offshore Ornithology Baseline, 2024–2025 DAS roseate-tern counts and Table A3-19; Appendix A15.3 Collision Risk Modelling; NPWS, Conservation Objectives for Rockabill SPA 004014.

[27] NISA (2026), Addendum to Chapter 6: Offshore Project Description, sections 6.5 and 6.11 and Tables A6.5–A6.6; Addendum to Chapter 12 Benthic Subtidal and Intertidal Ecology, especially sections 12.3 and 12.5; Addendum to Chapter 13 Fish and Shellfish Ecology, especially sections 13.3–13.5 and Tables A13.7, A13.9 and A13.13.

[28] NISA (2026), Addendum to the Natura Impact Statement, Tables A5.30 and A6.9 and sections concerning Rockabill SPA, North-West Irish Sea SPA and Rockabill to Dalkey Island SAC; NISA, Addendum to Chapter 15, Tables A15.50, A15.52 and A15.77. The SPA-screening and model-input reconciliations identified in this observation should be checked against the complete published tables.

[29] NISA (2026), Addendum to Chapter 5 Consideration of Alternatives, particularly sections 5.3 and 5.5.9; Appendix A5.1 Design Refinements; Response to Submissions and Observations; NMPF Biodiversity Policy 1 and Protected Marine Sites Policies 1 and 4; EIA Directive Article 5(1)(d) and Annex IV(2).

[30] NISA (2026), Addendum to Chapter 14 Marine Mammal Ecology, section 14.3.2.2 and Tables A14.4, A14.12, A14.13 and A14.15, and section 14.9; NISA, Addendum to the NIS, marine-mammal in-combination assessment; NISA, Appendix A14.5 Marine Mammal Mitigation Protocol.

[31] NISA (2026), Offshore Bats Addendum (Chapter 35), RFI Item 15 responses and relevant collision-risk/rotor-clearance data; Appendix A15.3 Offshore Ornithology Collision Risk Modelling, Table A2-1 (turbine parameters and tip clearance at highest astronomical tide); Appendix A35.1 Offshore Bat Monitoring Report 2024; and the Rockabill roost survey information in the Chapter 35 Addendum.

[32] NISA (2026), Addendum to Chapter 29 Seascape, Landscape and Visual Impact Assessment, including Ardgillan, Skerries and Loughshinny viewpoints and Appendices A29.1–A29.2; original Chapter 29 significance methodology; Addendum to Chapter 33 Tourism and Recreation; FIR Item 13.

[33] NISA (2026), Request for Further Information Response Report, including Items 13(e) and 19; Addenda to Chapters 21–26 and the Response to Submissions and Observations concerning Flemington/Bremore, Balbriggan route construction and archaeology.

[34] NISA (2026), Chapter 6 Addendum, section 6.11.2; Maritime Area Consent 2022-MAC-005, especially the rehabilitation and financial-security conditions and rehabilitation schedule; NISA, Appendix 7.1 Copy of Maritime Area Consent.

[35] NISA (2026), Appendix A5.1 Design Refinements; Addendum to Chapter 17 Shipping and Navigation, Navigational Risk Assessment Addendum; Response to FIR Item 2(b), and correspondence with the Marine Survey Office and Irish Coast Guard.

[36] Blue Ireland CLG (29 July 2026), Observation on Arklow Bank Wind Park Phase 2, Response to Further Information, OA27.319864: section 1, pp. 4-6 (EIA alternatives); section 3(ii), pp. 13-15 (ecological functionality of breeding and resting places); section 3(iv)-(vi), pp. 17-25 (mitigation-induced movement, operational MMO records and integrated disturbance); section 3(vii), pp. 26-35 (distinct Regulation 54 tests and limitations of iPCoD); and section 3(i), pp. 9-12 (regional rolling disturbance). This previous Blue Ireland submission is cited as the origin of issues requiring project-specific examination, not as evidence that the same factual omissions necessarily occur at NISA.

[37] Court of Justice of the European Union, IE v Magistrat der Stadt Wien, Case C-357/20, EU:C:2021:881, judgment of 28 October 2021, especially paragraphs 30-34 and 48-54 (ecological functionality and the distinction between deterioration and destruction of breeding sites and resting places): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62020CJ0357>.

[38] Department of Climate, Energy and the Environment, FS007031, Statkraft North Irish Sea Array Site Investigations, including consultation on in-combination effects and geophysical marine-mammal effects (2021): <https://www.gov.ie/en/department-of-climate-energy-and-the-environment/foreshore-notice/fs007031-statkraft-north-irish-sea-array-nisa-site-investigations/>; Maritime Area Regulatory Authority, LIC230001, site investigations for North Irish Sea Array, determination 2 August 2024: <https://www.maritimeregulator.ie/application/lic230001/>. These records establish the authorisation history, not necessarily that each proposed investigation occurred.

[39] Department of Transport, Marine Notice No. 46 of 2024 (amended 13 August 2024), North Irish Sea Array Offshore Wind Farm Geophysical Surveys, pp. 1–2, describing the proposed September–October 2024 campaign, high-resolution 3D multichannel seismic and 24-hour operations: <https://www.northirishsearray.ie/globalassets/0/.ie/0.-projects/1.wind/nisa/marine-notice-and-updates/46-of2024-nisa-geophysical-surveys.pdf>; NISA, Marine Notices & Updates, notices concerning 2022 geophysical and geotechnical investigations: <https://www.northirishsearray.ie/Marine-Notices-and-Updates/>. A notice of intended works does not establish that all proposed operations took place.

[40] Maritime Area Regulatory Authority, LIC230001, North Irish Sea Array Windfarm Limited: description of the activity as site investigations to inform the NISA offshore wind farm and export cable and determination of 2 August 2024, <https://www.maritimeregulator.ie/application/lic230001/>; North Irish Sea Array, Appendix 4 Cable Route Benthic Survey Report, section 1.1 (FS007358 export cable investigations and surveys in September–October 2022), <https://northirishsearraysid.ie/wp-content/uploads/2024/06/Appendix-4-Cable-Route-Benthic-Survey-Report.pdf>; NISA, licence application documents for LIC230001, identifying both FS007031 and FS007358.

[41] North Irish Sea Array, The Project, project evolution and seabed conditions, recording project-specific geophysical and geotechnical survey work in 2022 and 2023, including CPTs and boreholes, and the use of survey results in determining the development layout and construction methods: <https://www.northirishsearray.ie/the-project/>; NISA (2024), Planning Report, account of site investigation surveys and design development.

[42] Directive 2011/92/EU as amended by Directive 2014/52/EU, Articles 2 and 5 and Annex IV, including the description of the whole project and cumulative effects; Court of Justice, *Commission v Ireland*, Case C-392/96, EU:C:1999:431, paragraph 76; Court of Justice, *Ecologistas en Acción-CODA v Ayuntamiento de Madrid*, Case C-142/07, EU:C:2008:445, paragraphs 44–45. The authorities support preventing artificial segmentation and require attention to the geographical and functional relationships between works; they do not determine the classification of each NISA survey without examination of the facts.

[43] NPWS, Conservation Objectives: Rockabill to Dalkey Island SAC 003000, Version 1, 7 May 2013 (habitat-access and disturbance attributes); NISA (2024), Natura Impact Statement, §5.3.2.1 and pp. 152-153 (2013, 2016 and 2021 harbour-porpoise density evidence and the NPWS target interpretation); NPWS, 2025 Article 17 harbour-porpoise conservation assessment; CJEU, Joined Cases C-27/25 and C-356/25, *Knocknamona and Massey*, judgment of 16 July 2026. The Court cases concerned missing site-specific objectives, not the age or validity of an existing objective.

[44] European Commission, Technical Group on Underwater Noise, Setting EU Threshold Values for Impulsive Underwater Sound (JRC133477, 2023), discussion of LOBE and habitat-based assessment under Marine Strategy Framework Directive Descriptor 11; NISA site-investigation records FS007031, FS007358 and LIC230001, together with Marine Notice 46 of 2024. The EU indicator framework is used here as relevant scientific context, not as a substitute for the project-specific Habitats Directive test.

[45] **European Commission (2020), Guidance document on wind energy developments and EU nature legislation, Commission Notice C(2020) 7730 final, DOI: 10.2779/095188 (cumulative effects and bird movement/barrier pathways); NISA (2026), Addenda to Chapters 15 and 38; and An Coimisiún Pleanála, FIR Item 8(a)(iv). The assessment of the full Phase 1 array configuration remains a question to be answered using NISA-specific evidence.**

[46] NISA (2024), Appendix 14.1 Underwater Noise Modelling Report, §2.2.2 (fish fleeing/stationary assumptions and particle motion), and Chapter 13 Fish and Shellfish Ecology; NISA (2026), Addendum to Chapter 13 and the revised construction methodology. Former WTG impact-piling calculations are cited only to establish the modelling distinction, not as the current construction scenario.

[47] NISA (2024), Chapter 13 Fish and Shellfish Ecology, especially its EMF sensitivity discussion concerning Atlantic salmon, European eel and lampreys; NISA (2026), Addendum to Chapter 13 and revised offshore cable design. The sensitivity classifications and data needs raised in Codling FIR Items 11(b) and 11(k) should not be imported as findings concerning NISA without independent verification.

Appendix A: FIR Compliance Register

This schedule records the present Blue Ireland position on the 21 numbered Further Information items. “Answered” means that responsive material has been supplied and no material residual is presently advanced; it does not imply endorsement of every methodological choice. Where a material residual survives, its principal location in the observation is identified.

FIR	Subject	Present Blue Ireland position	Final placement
1	General Matters	Substantial response; material residual under Item 1(d): Operational Monitoring Plan remains a framework with specific measures/methods/timing deferred.	Principal Issue 4
2	Search & Rescue / Navigation	Substantially answered following layout changes and consultation; no principal residual advanced.	Closed / compliance record
3	NMPF / MSFD habitats & underwater noise	Responsive material supplied; narrow MSFD D11C1 impulsive-noise spatial-treatment verification remains.	Appendix B
4	Ecosystem Functions & Services	Standalone assessment supplied, but Applicant expressly did not insert the requested ecosystem-function assessment into individual EIAR chapters; monitoring also limited.	Section 6; Principal Issue 4 supporting
5	Cumulative Assessment	Extensive revised CEA supplied. Residual concerns concern common endpoints, Phase 1 data currency and mechanism-specific aggregation.	Cross-Cutting Issue A; Appendix B
6	Site Selection / NWIS SPA	Response supplied, but justification relies materially on ornithological/AA conclusions that remain contested.	Principal Issue 2
7	Marine Geology, Oceanography & Physical Processes	Material residuals: requested AEP range, operational SSC/deposition outputs and 40+ year developed-versus-undeveloped morphodynamics not demonstrated.	Principal Issue 1
8	Offshore Ornithology	Substantial further evidence supplied; material residuals remain for migratory evidence, Guillemot bio-season/SPA attribution, RTD functional displacement/in-combination and some Phase 1 inputs.	Principal Issue 2; Cross-Cutting Issue A; Appendix B
9	Benthic Subtidal & Intertidal Ecology	OSPAR receptor now recognised and assessment revised; residuals remain on 2022/2025 baseline reconciliation, receptor-specific permanent loss, monitoring and nearshore reef.	Principal Issues 1 and 4; Appendix B
10	Marine Mammals	Foundation redesign materially reduces original piling risk; residuals remain on TTS/injury endpoint, sequential exposure/recovery, UXO, operational soundscape, strict protection and some masking/PAM questions.	Principal Issue 3; Appendix B
11	Fish & Shellfish Ecology	Substantial response; sandeel substrate materially supports Principal Issue 1; narrower herring/noise traceability points remain.	Principal Issue 1 supporting; Appendix B
12	Commercial Fisheries	Substantial revised material; strong residual on fleet-specific displacement, receiving-ground capacity and cumulative redistribution.	Section 5; Principal Issue 4 supporting
13	Seascape, Landscape & Visual Impact	Extensive new visual material supplied; residual is the assessment endpoint for community cultural services and Brú na Bóinne OUV/integrity, plus limited verification matters.	Sections 6 and 7; Appendix B
14	Archaeology: Offshore & Onshore	Belle Hill/geophysical and mitigation responses substantially address the FIR; narrow design-envelope safeguard remains.	Appendix B / substantially answered

15	Offshore Bats	Substantial new surveys supplied, including Rockabill evidence; material residuals remain on migration route, flight height/tidal clearance, collision inference and conditional operational mitigation.	Principal Issue 4; Appendix B
16	Gas Interconnector 2	Proximity and original NRA error addressed; material internal consequence-rating inconsistency and DNV/GNI traceability remain.	Section 8; Appendix B
17	Aviation & Radar	Department of Defence and AirNav/daa issues substantially resolved; no main-body ground warranted.	Closed / compliance record
18	Transboundary Consultation / Isle of Man	Fish and marine-mammal matters largely propagate from other chapters; designated Manx seabird sites require receptor-specific traceability.	Principal Issue 2 supporting; Appendix B propagation
19	Onshore Traffic & Transportation	Substantial response and indicative phasing supplied; final implementation should remain within the assessed closure/phasing envelope.	Appendix B safeguard
20	Onshore Biodiversity	Updated surveys and management material supplied; exact cable alignment/tree-hedgerow loss remains a design-envelope safeguard.	Appendix B safeguard
21	Airborne Noise	Detailed operational modelling supplied with large margin below thresholds; final turbine model check is genuine verification against an assessed source envelope.	Substantially answered / compliance record

Appendix B: Detailed Residual and Verification Schedule

This Appendix preserves technical, documentary and implementation matters which remain relevant but which Blue Ireland does not rely upon as independent principal grounds. The schedule is intended to assist the Commission in checking the final evidential chain without diluting the main issues.

FIR / topic	Residual or verification matter	Commission check	Status
3	MSFD D11C1 impulsive-noise spatial treatment	Confirm that the revised spatial/temporal treatment of impulsive noise is consistent with the applicable MSFD criterion and the project activities retained after redesign.	Technical verification
5	Currency/version of imported Phase 1 evidence	Identify the exact application/FI version used for each imported Phase 1 value where later FI materially changed assumptions or impact values.	Cumulative evidence provenance
7(i)	Western Irish Sea Gyre methodology	Response supplied; retain a technical check on whether the revised treatment adequately represents the relevant gyre/process pathway.	Technical verification only
7(p)(i)	Percentage-change presentation	The requested percentage-change presentation was not followed exactly; verify that the alternative outputs nevertheless allow the Commission to determine the same effect envelope.	Documentary/technical
8	Imported Oriel/Arklow evidence and Guillemot seasonal definitions	Verify exact evidence versions and reconcile materially different bio-season assumptions where they feed cumulative ornithological conclusions.	Supporting to Principal Issue 2
8: Roseate Tern	Underlying tracking/raw-evidence availability	Confirm availability and provenance of the evidence relied upon for the narrow Roseate Tern conclusions.	Narrow evidence point
9(e)	Contaminated sediment vs accidental pollution	Separate reasoning has been added, but the pathways remain combined at final assessment level; confirm that neither pathway is obscured by the combined conclusion.	Supporting verification
9(g)	EMF receptor-specific adequacy	Confirm that EMF conclusions remain adequate for the specific benthic/fish receptors and any unburied/protected cable sections.	Technical verification
10(d)(ii)	PAM/acoustic baseline	The project-specific cetacean baseline is stronger on occurrence/density than ecological function; confirm whether the available acoustic evidence is sufficient for the conclusions drawn.	Supporting to Principal Issue 3
10(s)	Masking/cumulative behavioural modelling	NISA relies materially on qualitative reasoning because no established masking threshold is applied; confirm that cumulative behavioural/masking effects are not understated.	Supporting to Principal Issue 3
11(b)	Spring-season herring evidence transparency	Confirm the provenance and adequacy of spring-season evidence used in the spawning/seasonal assessment.	Technical verification
11(g)	Basking shark / turtle operational-noise traceability	Confirm receptor-specific route from operational sound predictions to effect conclusion for these protected mobile receptors.	Technical verification
13(a)/(e)	Tourism / Flemington	Verify propagation of the adopted Flemington LAP and relevant tourism evidence into the revised visual, traffic, noise and planning baselines.	Documentary verification
14	Archaeological discoveries / additional AEZs	Ensure final detailed design and discovery procedures remain within the assessed archaeological envelope and secure any necessary AEZ response.	Design-envelope safeguard
15(a)	Rockabill survey seasonality / roost interpretation	The 2024 surveys confirmed a Leisler's transitional/stopover roost; absence of a pipistrelle roost in the late-summer/autumn programme should not be overstated as proof of no seasonal relationship.	Supporting to Principal Issue 4
15(c)	ALAN / lux contours	ACP requested appropriate lux contours; NISA supplied a	Supporting technical

		qualitative explanation why contours were considered unnecessary. Confirm whether that is sufficient for the actual lighting specification.	residual
16	Underlying DNV assessment / express GNI acceptance	Identify the DNV-RP-F107 technical assessment, assumptions and mitigation, and confirm the final GNI position relied upon for ALARP.	Supporting to Section 8
18	Marine mammal / fish transboundary propagation	Ensure the Isle of Man conclusions are updated consistently with any changes required to the underlying marine-mammal and fish assessments.	Propagation check
19	Final CTMP/phasing	Final contractor-level phasing, closures and working arrangements should remain within the traffic/noise envelope actually assessed.	Implementation safeguard
20	Final cable alignment / PRF-tree and hedgerow loss	Final alignment and vegetation loss should remain within the quantified ecological worst-case envelope; any later routing change should not increase the assessed loss.	Design-envelope safeguard
21	Final turbine sound-power verification	Verify that the selected turbine falls within the already-modelled operational source envelope and that any compliance-monitoring commitments are secured.	Legitimate post-consent verification