
FW: An Coimisiún Pleanála Case Reference: ABP-319866-24 (OA29N.319866)

From Davina Campbell [REDACTED]
Date Wed 10/21/2026 12:03 PM
To Ellen Moss [REDACTED]; Marine <marine@pleanala.ie>

 1 attachment (3 MB)

SWEG submission to ACP re NISA further information FINAL 2026 10 20.pdf;

From: Sustainable Windfarm Environmental Group <sustainablewindfarm@gmail.com>
Sent: Wednesday 21 October 2026 11:50
To: Davina Campbell [REDACTED]
Subject: Fwd: An Coimisiún Pleanála Case Reference: ABP-319866-24 (OA29N.319866)

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Hi Davina,

Thanks for forwarding this on to the Case Officer. Much appreciated.

Kind regards,

Sandra O'Sullivan

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From: **Sustainable Windfarm Environmental Group** <sustainablewindfarm@gmail.com>
Date: Tue, Oct 20, 2026 at 11:49 PM
Subject: An Coimisiún Pleanála Case Reference: ABP-319866-24 (OA29N.319866)
To: <marine@pleanala.ie>

Hi there,

Please find attached our submission regarding the **Significant Additional Information** submitted by **Statkraft** for the **North Irish Sea Array** (Case Ref: OA29N.319866).

I would be grateful if you could send me an acknowledgement confirming receipt of this document.

Kind regards,

Sandra O'Sullivan
Director
Sustainable Windfarm Environmental Group



'Ireland's relationship with the sea has helped define our nation's culture and history. Our seas are a critical part of our identity as an island nation. They are part of what makes us who we are'.

MARA – the Maritime Area Regulatory Authority

Submission in respect of

An Coimisiún Pleanála Case Reference: ABP-319866-24 (OA29N.319866)

by

Sustainable Windfarm Environmental Group (SWEG)

Observations on the Significant Further Information

North Irish Sea Array (NISA) Offshore Wind Farm

20 October 2026

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INTRODUCTION

To: An Coimisiún Pleanála, 64 Marlborough Street, Dublin 1, D01 V902

Case reference: ABP-319866-24 (OA29N.319866)

Development: North Irish Sea Array (NISA) Offshore Wind Farm, off Counties Dublin, Meath and Louth

Applicant: North Irish Sea Array Windfarm Limited (Statkraft Ireland / Copenhagen Infrastructure Partners)

Subject: Submission on the Significant Further Information received in response to the Commission's Request for Further Information of 10 April 2025

From: Sustainable Windfarm Environmental Group (SWEG), Maypark, 46 Church Street, Skerries, Co. Dublin, K34 H793

Date: 20 October 2026

ABOUT SWEG AND THIS SUBMISSION

1. Sustainable Windfarm Environmental Group (SWEG) is a community group based around Skerries, Balbriggan and Gormanston in Counties Dublin and Meath. SWEG made a written submission on this application in August 2024. We welcome the opportunity to comment on the Significant Further Information (SFI) the applicant has now submitted.
2. SWEG supports offshore wind energy. Ireland has to decarbonise its electricity supply, and offshore wind will play a central part in that. Our objection is not to offshore wind. It is to this project, at this scale, in this location.
3. **SWEG fundamentally disagrees with a wind farm of the proposed size being built inside a Special Protection Area and immediately beside some of the most sensitive seabird habitats in Ireland.** The design changes in the further information do not alter this. The site is used by protected seabirds in every season of the year, so the threat it poses is year-round.
 - The entire NISA array lies within the North-west Irish Sea SPA (site code 004236).
 - Based on the applicant's own figures, the array boundary is 0.2 km from the Rockabill SPA (Addendum to the NIS, pp. 393 and 396). Rockabill holds the largest roseate tern colony in Europe.
 - The array lies within the foraging range of the internationally important seabird colonies on Lambay Island, Ireland's Eye, Howth Head and the Skerries Islands.
 - Up to 49 turbines are proposed, with tip heights of up to 316 m and rotor diameters of up to 276 m, with the nearest turbine 12.4 km from the Fingal coast (Ch 6 Addendum, section 6.3.2).
4. SWEG recognises that the developer did not choose to build inside an SPA. NISA was granted its Maritime Area Consent in December 2022 through the State's "Phase One" process, and won its auction award in May 2023. Only in July 2023 did the State propose the same waters

as the North-west Irish Sea SPA, which the Minister described as “the largest SPA designation for birds in Ireland’s history”¹. This sequence does not change the Commission’s task. The Commission is the competent authority under the Habitats Directive and must itself be certain that the project will not harm the integrity of the SPA. The applicant’s Maritime Area Consent and support-scheme award do not lower that test.

5. We acknowledge the considerable volume of new survey data and analysis in the SFI. The further information is very extensive, and we have reviewed in detail the sections most relevant to our concerns. That material has not removed the concerns raised by the Commission, the National Parks and Wildlife Service and observers. In several important respects it has heightened our concerns.

OUR KEY OBJECTIONS AND REQUESTS

6. Our main objections, and what we ask the Commission to do about each, are:

(1) Based on the applicant’s own figures, the Commission cannot be certain that the protected bird populations will not be harmed. The applicant’s own population modelling predicts that:

- **Kittiwakes** in the North-west Irish Sea SPA would be 15–23% fewer after 35 years from NISA’s collisions alone (Addendum to the NIS, Table A5.30). Kittiwake is a species the State has set out to *restore*;
- **Guillemots** in the North-west Irish Sea SPA would be up to 9.7% fewer using the applicant’s own count, and up to 39.8% fewer using the State’s population figure (Table A5.17);
- **Lambay Island guillemots** would be up to 38% fewer, in combination with other projects, under the season definitions the Commission asked the applicant to use (Table A6.36).

We ask the Commission to refuse permission under Article 6(3) of the Habitats Directive. (Sections 1 and 2)

(2) The risk to Rockabill’s roseate terns has grown, not shrunk.

- The predicted number of roseate tern collisions has risen roughly tenfold since 2024.
- The 2025 aerial surveys recorded up to 308 roseate terns in the turbine area in a single month (August 2025), and an estimated 702 within 2 km of the turbines in the same month (Appendix A15.1, Table A3-19); earlier surveys recorded essentially none.
- The layout changes have moved turbines to the western edge of the array, the side facing Rockabill.
- The Rockabill terns are left out of the in-combination assessment altogether.

We ask the Commission to refuse permission. At the very least, it should require turbine-by-turbine distances from Rockabill and a population model for the Rockabill colony before any decision. (Sections 2 and 4)

¹ NPWS press release, 13 July 2023, “Minister Noonan announces Ireland’s largest protected area for birds”: <https://www.npws.ie/news/minister-noonan-announces-irelands-largest-protected-area-birds>

(3) The assessment of cumulative effects with the other Phase One wind farms is incomplete and contains errors.

- Only one of the 21 bird species of the North-west Irish Sea SPA is assessed in combination with other projects.
- Several cumulative tables contain arithmetic and copying errors that understate the totals.
- For harbour porpoise, the applicant's own figures exceed the guideline limit for the Rockabill to Dalkey Island SAC in one scenario.

We ask the Commission not to decide the application until a complete and corrected in-combination assessment has been provided and the public has had an opportunity to comment on it. (Section 4)

(4) The project is 200 MW larger than its grid connection and support contract. NISA's grid connection assessment and its auction award are for 500 MW. The application is for 700 MW. The extra 200 MW has neither a grid connection nor a support contract, yet it is being placed inside the SPA beside Rockabill.

If, despite our objections, the Commission is minded to grant permission, we ask that it limit the project to 500 MW by removing the turbines closest to Rockabill: about 14 of the 49 turbines in Option 1, or 10 of the 35 in Option 2. (Section 1.4)

(5) The applicant's own assessment finds major-moderate visual effects at Skerries, Loughshinny and Ardgillan. The applicant calls these effects "not significant" only because of a threshold it set itself; under the UK research and practice it relies on (including the White Consultants² studies for the UK and Welsh governments), effects of this level are significant. Turbines of up to 316 m are normally placed around 30 km or more from a sensitive coast, not 12.4 km. And the public had no meaningful opportunity to influence the scale or layout of the project.

We ask the Commission to treat these visual and tourism effects as significant and to weigh them together with the effects on birds and other factors when considering alternatives, including locations further offshore. (Section 5)

7. We also raise:

- the near-doubling of permanent seabed loss caused by the new foundations, across a habitat on the OSPAR list of threatened and declining habitats, and the predicted permanent hearing injury to harbour porpoises from clearing unexploded ordnance, and errors in the applicant's marine mammal figures, including a bottlenose dolphin population enlarged 28-fold (Section 3);
- unanswered concerns about the onshore works at Bremeore, Balbriggan and Gormanston (Section 6);
- the absence of a decommissioning cost estimate, a secured bond and a commitment to remove the foundations (Section 7);

² White Consultants (2020). Review and Update of Seascape and Visual Buffer Study for Offshore Wind Farms. Final report for BEIS OESEA: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877526/White_Consultants_2020_Seascape_and_visual_buffer_study_for_offshore_wind_farms.pdf

- other material errors and omissions, including information the Commission asked for that is missing, unanswered questions about the bats that roost on Rockabill, and navigation through the Rockabill Gap (Section 8).

Throughout, we draw on the French State’s 2026 collective scientific assessment (ESCo) of offshore wind and biodiversity by Ifremer and CNRS. It finds that divers, auks and gannets avoid wind farms, that collision risk is mainly estimated by models, that cumulative effects cannot yet be assessed robustly, and that avoidance should begin at the site-selection stage, including by avoiding the main breeding areas of seabirds (Section 2.2.8).

HOW THIS SUBMISSION IS STRUCTURED

8. This submission is structured as follows:

- **Section 1:** the location of the project inside an SPA and beside Rockabill, the principle of avoidance, and the alternatives available, including a 500 MW project.
- **Section 2:** birds. Section 2.1 sets out the errors, omissions and inconsistencies in the applicant’s further information on terns, auks, kittiwakes, migratory birds and other species. Section 2.2 sets out the published evidence that challenges the applicant’s assumptions, and what we ask the Commission to do.
- **Section 3:** the seabed, fish, shellfish and marine mammals, set out in the same way: errors, omissions and inconsistencies (Section 3.1), then the evidence and our requests (Section 3.2).
- **Section 4:** cumulative effects with the other Phase One wind farms, for birds and marine mammals.
- **Section 5:** visual impact, seascape, tourism and public participation.
- **Section 6:** the onshore works at Bremore and Balbriggan, and concerns raised in Gormanston.
- **Section 7:** decommissioning, removal and financial security.
- **Section 8:** other material errors, omissions and inconsistencies in the further information.
- **Section 9:** concluding statement.

9. SWEG respectfully submits that the Commission cannot be satisfied, beyond reasonable scientific doubt, that the proposed development will not adversely affect the integrity of the North-west Irish Sea SPA, the Rockabill SPA, the Lambay Island SPA or the Howth Head Coast SPA. We therefore request that permission be refused. At the very least, the project should be limited to the 500 MW for which it is contracted, by removing the turbines closest to Rockabill and moving the array into the north-eastern part of the Maritime Area Consent area.

ABBREVIATIONS USED IN THIS SUBMISSION

Abbreviation	Meaning
the Commission	An Coimisiún Pleanála (formerly An Bord Pleanála)
SFI or further information	The applicant’s Significant Further Information of 2026, submitted in response to the Commission’s Request for Further Information (RFI)

Abbreviation	Meaning
	of 10 April 2025
NIS Addendum / Addendum to the NIS	The applicant's 2026 Addendum to the Natura Impact Statement
Ch 6 Addendum, Ch 12 Addendum, Ch 15 Addendum etc.	The applicant's 2026 Addenda to the corresponding chapters of the Environmental Impact Assessment Report (EIAR)
A29.1 Addendum	The applicant's 2026 Appendix A29.1 (viewpoint assessments)
Response to Submissions Report	The applicant's 2026 Response to Submissions and Observations (section 5.7 contains its replies to SWEG)
RFI Response Report	The applicant's 2026 Request for Further Information Response Report
SPA / SAC	Special Protection Area (Birds Directive) / Special Area of Conservation (Habitats Directive)
WTG	Wind turbine generator, i.e. one wind turbine (used in quotations from the applicant's documents)
SWEG 2024	SWEG's submission to An Bord Pleanála of 8 August 2024
Appendix	The letter of 29 September 2026 from ornithologist Ms Marie Louise Heffernan, MSc, CEnv, MCIEEM, written on behalf of SWEG and attached to this submission

Page and table numbers refer to the applicant's 2026 further information documents unless stated otherwise. Page numbers are those printed on the applicant's documents.

1 LOCATION WITHIN A SPECIAL PROTECTION AREA – THE PRINCIPLE OF AVOIDANCE

1.1 SWEG’S POSITION

1.1.1 The most effective way to protect a European site is not to build harmful infrastructure in it in the first place. Avoidance is the first and most important step in protecting designated sites. It comes before minimising or mitigating impacts. Where a project can be located elsewhere, it should be.

1.1.2 In this case the whole array lies within the North-west Irish Sea SPA, at the edge of the Rockabill SPA. The site was fixed before the North-west Irish Sea SPA was proposed (see 1.5). The applicant now seeks to show, through modelling, that the resulting effects can be tolerated. SWEG submits that this is the wrong starting point. Avoidance can still be applied, in the scale, location and layout of the array, and realistic alternatives exist. The case for building at this scale inside the SPA has not been made.

1.2 THE LEGAL AND POLICY FRAMEWORK

1.2.1 **Article 6(3) of the Habitats Directive (92/43/EEC).** A plan or project may be authorised only if the competent authority is certain that it will not adversely affect the integrity of the European site concerned. That certainty must be in the light of the site’s conservation objectives. It must leave no reasonable scientific doubt (Case C-127/02, *Waddenzee*).

- The burden lies on demonstrating the absence of harm. In the words of the European Commission’s guidance on wind energy and EU nature legislation: “The onus is therefore on demonstrating the absence of adverse effects rather than their presence” (Commission notice C(2020) 7730³, section 3.5).
- **The assessment must be made against each site’s own conservation objectives.** On 16 July 2026 the Court of Justice confirmed that an appropriate assessment “must be carried out based on the conservation objectives specific to the site concerned”, and that without such objectives a valid appropriate assessment cannot be carried out (joined Cases C-27/25 *Knocknamona* and C-356/25 *Massey*).⁴ For the sites most at risk here, site-specific objectives have been set. The **Rockabill SPA** objectives set targets for roseate, common and Arctic terns on breeding numbers, productivity, breeding distribution, **prey biomass available**, **barriers to connectivity** and disturbance.⁵ The **Rockabill to Dalkey Island SAC** objectives require that the harbour porpoise’s range in the site is “not restricted by artificial barriers” and that human activities do not adversely affect the porpoise community.⁶ The **North-west Irish Sea SPA** objectives were set in 2023. The Commission must therefore test the project against each of these targets in turn. The applicant has not done so for the Rockabill targets on barriers and prey (see Sections 2.1.1.8 and 4.3).

³ European Commission, Guidance document on wind energy developments and EU nature legislation, C(2020) 7730 final, 18 November 2020: <https://tethys.pnnl.gov/sites/default/files/publications/EC-Guidance-2020-Wind-Energy.pdf>

⁴ Court of Justice of the European Union, judgment of 16 July 2026, joined Cases C-27/25 *Knocknamona* and C-356/25 *Massey*. Summary: William Fry, “European Court issues key ruling on AA and AA screening”: <https://www.williamfry.com/knowledge/european-court-issues-key-ruling-on-aa-and-aa-screening/>

⁵ NPWS (2013), Rockabill SPA (site code 004014): Conservation Objectives, Version 1, 8 May 2013: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004014.pdf

⁶ NPWS (2013), Conservation Objectives: Rockabill to Dalkey Island SAC 003000, Version 1, 7 May 2013: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf

- **At sea, Rockabill’s objectives are not backed by management or monitoring.** A European Commission assessment of the management of Special Protection Areas, published in February 2023, examined ten Irish SPAs. It found that Rockabill, the only marine site among them, “lacks a management plan for the site as a whole” and lacks “conservation measures and monitoring for the marine component of the SPA”.⁷ The Rockabill targets are also expressed only as “no significant decline” or “no significant increase”, without numerical thresholds, and the SPA extends only 3.5 km out to sea, while its terns feed up to about 30 km from the colony (see Section 2.2.1). With no management plan or monitoring in place for the waters around the colony, nothing outside this application would detect or correct harm to the terns at sea. The Commission’s certainty must rest entirely on the assessment before it, and the precautionary principle applies with particular force.

1.2.2 Article 6(4). If adverse effects on integrity cannot be excluded, a project may proceed only if all of the following apply:

- there are no alternative solutions;
- there are imperative reasons of overriding public interest;
- all necessary compensatory measures are secured.

The European Commission’s guidance on Article 6 states that alternative solutions “might involve alternative locations or routes, different scales or designs of development, or alternative processes”. It adds that, when alternatives are compared, “other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria” (Commission notice *Managing Natura 2000 sites*, C(2018) 7621⁸, OJ C 33, 25.1.2019, section 5.3.1, pp. C 33/39–40).

1.2.3 The EIA Directive (2011/92/EU as amended by 2014/52/EU).

- The developer must describe the reasonable alternatives studied and give the main reasons for the option chosen, taking into account the environmental effects (Article 5(1)(d) and Annex IV, point 2).
- The Court of Justice has held that this information must cover the environmental effects of the chosen option and of each main alternative studied, even an alternative rejected at an early stage (Case C-461/17, *Holohan*⁹, 2018).

1.2.4 The National Marine Planning Framework (NMPF). The NMPF (2021) expressly adopts avoidance as the first preference:

- **Biodiversity Policy 1:** proposals that may have significant adverse impacts on species migration or on habitat connectivity “must demonstrate that they will, in order of preference and in accordance with legal requirements”, (a) avoid, (b) minimise, or (c) mitigate those impacts (NMPF, p. 32).
- **Protected Marine Sites Policy 4:** proposals “should demonstrate that they will, in order of preference, and in accordance with legal requirements” avoid, minimise or mitigate significant impacts (NMPF, p. 42).

⁷ BirdWatch Ireland, “European Commission assessment of Special Protected Areas reveals huge gaps in protection and management in Ireland”, 25 April 2023: <https://birdwatchireland.ie/european-commission-assessment-of-special-protected-areas-reveals-huge-gaps-in-protection-and-management-in-ireland/>

⁸ European Commission, *Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC*, C(2018) 7621, OJ C 33, 25.1.2019: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019XC0125\(07\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019XC0125(07))

⁹ Case C-461/17 *Holohan and Others*, judgment of 7 November 2018. Summary: <https://www.isepglobal.org/articles/qmark-the-holohan-judgement-eia-case-law-relating-to-the-habitats-directive>

- **Protected Marine Sites Policy 1:** proposals “must demonstrate that they can be implemented without adverse effects on the integrity” of SACs and SPAs (NMPF, p. 42).

1.2.5 EU renewable energy law. The revised Renewable Energy Directive (Directive (EU) 2023/2413, Article 15c) requires Member States to exclude Natura 2000 sites from the “renewables acceleration areas” they designate for fast-tracked renewable energy. SWEG accepts that this provision governs acceleration areas and does not of itself prohibit this application. It is nevertheless a clear statement of the EU’s position: Natura 2000 sites are not appropriate locations to prioritise for renewable energy development.

1.2.6 What the Habitats Directive does and does not do. SWEG acknowledges that the Habitats Directive does not, in principle, exclude wind farms from Natura 2000 sites (Commission notice C(2020) 7730, section 2.2.3). But it is precisely because the Directive does not impose a blanket ban that the sequence matters:

1. avoid the site if possible;
2. if not, demonstrate with certainty that there will be no adverse effect on integrity;
3. only in the absence of alternatives, and for imperative reasons, proceed with compensation.

In this application the first step has not been applied, even where it still can be: in the scale, location and layout of the project.

1.3 HOW THE APPLICANT TREATS AVOIDANCE

1.3.1 In its RFI Item 6, the Commission asked the applicant to justify its choice of site. The Commission noted:

- that the site lies entirely within the North-west Irish Sea SPA;
- that “avoidance of designated sites is typically an important parameter in a site selection process”, as the applicant’s own Chapter 5 had stated;
- the proximity of Rockabill SPA and of ten SPAs and nine SACs in the wider area.

1.3.2 The applicant’s response (Addendum to EIAR Chapter 5, section 5.5.9) does not apply avoidance. Instead it plays it down. It states that avoidance of designated sites:

- is “rarely the only, or even the most important, criterion in a site selection process”;
- is “a risk reduction mechanism” for the developer;
- was “just one of 13 criteria”.

The applicant explains that avoiding designated sites mainly reduces the risk that protected species will be found later. It also says that otherwise, very extensive surveys and assessments “could add significantly to the costs and timeline of the consent stage of the project”.

1.3.3 SWEG submits that this description fundamentally misunderstands what avoidance is for:

- Avoidance is not a device to manage a developer’s consenting costs. It is the first and most effective means of protecting the habitats and species for which European sites are designated.
- The NMPF puts avoidance first “in order of preference” for exactly that reason.
- The French State’s 2026 scientific assessment of offshore wind and biodiversity says the same. Avoidance measures “consist of removing potential effects at source, from the planning and site-selection stages, or even of abandoning certain projects where the

environmental stakes are judged too great”, in particular by avoiding the main breeding and migration areas of birds and marine mammals (see Section 2.2.8).¹⁰

- The leading tracking study of terns and offshore wind reaches the same conclusion: “Careful site selection (for example, ... by building wind farms well outside the foraging ranges of breeding Sandwich Terns) and mitigation measures are the way forward” (see Section 2.2.1).¹¹
- Treating the SPA as one constraint to be weighed equally against wind speed, water depth and grid connection is not consistent with the NMPF or with the protective purpose of the Birds and Habitats Directives.

1.3.4 The applicant’s justification for the site is circular. Its stated reason for considering the site still suitable is the NIS conclusion that there will be no adverse effect on the integrity of any European site: “based on the conclusion of the NIS ... the Developer’s determination that the site is suitable for the proposed development remains unchanged”. In other words, the site is said to be suitable because the NIS concludes it is safe.

- If that conclusion cannot be relied upon, the applicant offers no other justification for building inside the SPA, other than examples of wind farms built in SPAs in the UK (see 1.3.9).
- In Section 2 we show, using the applicant’s own tables, that it cannot be relied upon.

1.3.5 “Avoiding” the Rockabill SPA by 200 metres. The applicant states that during site selection between 2008 and 2022 “the proposed array area was located to avoid any designated sites”.

- The array boundary sits 0.2 km outside the Rockabill SPA. Avoiding a boundary line by 200 metres is not avoiding the habitat it was drawn to protect.
- The Rockabill SPA includes the sea within 3.5 km of the islands because up to 73% of roseate terns were found feeding within that distance (NPWS site synopsis, Rockabill SPA 004014)¹². The corollary is that a substantial share feed further out.
- Tracking by BirdWatch Ireland and partners has shown that Rockabill’s roseate terns routinely forage up to about 30 km from the colony, including in waters to the north-east that overlap the proposed array (Perrow et al. 2019¹³, *British Birds* 112: 496–516). The applicant’s own baseline acknowledges this overlap (Appendix A15.1, section 3.8).
- The only change made in response to the RFI was to move the turbine exclusion zone around Rockabill from 3 to 3.06 nautical miles, a change of about 110 metres. This was made for navigational safety reasons (Appendix A5.1).

1.3.6 The SPA came after the site was chosen, but the birds did not. The applicant notes that the North-west Irish Sea SPA was proposed in 2023, after its site selection was largely complete, after its Maritime Area Consent was granted in December 2022 and after its auction award in May 2023. SWEG accepts that the developer cannot be blamed for the SPA being proposed after the site was allocated.

¹⁰ Ifremer and CNRS (2026), Résumé ESCo, p. 9. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

¹¹ Fijn, R.C. (2024). *Tracking Terns: Year-round movement ecology of Sandwich Terns in a changing marine environment*. PhD thesis, University of Amsterdam, pp. 285–286: <https://hdl.handle.net/11245.1/a69ffd0e-1573-4431-be1c-d5c17f130ed5>

¹² NPWS, Site Synopsis: Rockabill SPA (004014): <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004014.pdf>

¹³ Perrow, M. et al. (2019). Foraging and chick-provisioning ecology of Roseate Terns breeding at Rockabill, Ireland. *British Birds* 112: 496–516: <https://britishbirds.co.uk/journal/article/foraging-and-chick-provisioning-ecology-roseate-terns-breeding-rockabill-ireland>

- Designation recognises an ecological value that already existed. The birds were using these waters before the boundary was drawn.
- Once the State identified this area as one of the most important marine areas in Ireland for seabirds, the correct response was to apply avoidance as far as is still possible: by reducing the scale of the project and keeping turbines away from Rockabill. It was not to treat the designation as one changed criterion out of thirteen.

1.3.7 **There is no “quiet season” at this site.** The applicant’s own surveys show that the waters of the array are used by protected birds all year round:

- **Spring and summer:** terns from Rockabill feeding and provisioning chicks (up to 308 roseate terns counted in the turbine area in August 2025, and an estimated 702 within 2 km of the turbines; Appendix A15.1, Table A3-19); kittiwakes, gulls, Manx shearwaters and auks from the Lambay, Skerries Islands, Ireland’s Eye and Howth colonies; gannets from Lambay; and cormorants and shags from the Skerries Islands, Lambay and Ireland’s Eye.
- **Spring and autumn migration:** waders, wildfowl and songbirds crossing the Irish Sea, including light-bellied brent geese, curlew and thrushes (see Section 2.1.6).
- **Autumn:** large numbers of kittiwakes on passage.
- **Winter:** around **21,000 guillemots** in the array and its 2 km buffer outside the breeding season (Ch 15 Addendum, Table A15.50), plus red-throated divers, a qualifying species of the SPA.
- **Consequences:** construction or maintenance timed to protect one group of species will fall in the season that matters most to another. The effects on birds cannot be managed away by scheduling. That is a further reason why the problem is the location itself.

1.3.8 **The applicant applies avoidance on land but not at sea.** When choosing where the export cable comes ashore, the applicant rejected a landfall south of Skerries. It did so because “the requirement for the offshore export cables to pass through both Rockabill SPA and Rockabill to Dalkey Island SAC was identified as a key constraint”. It lists “avoiding designated sites where practicable” among its criteria (Response to Submissions Report, section 3.3.3.2). SWEG agrees with that approach. If avoiding protected sites was decisive for the route of a buried cable, it should weigh at least as heavily in the size and layout of 35–49 turbines up to 316 m high.

1.3.9 **Wind farms in UK SPAs are not a precedent for this one.** In reply to SWEG, the applicant says there is “precedence for constructing OWF within designated site”, citing the Kentish Flats extension in the Outer Thames Estuary SPA and the Race Bank and Sofia wind farms (Response to Submissions Report, section 5.7.3.6). Its 2024 EIAR also pointed to the Gunfleet Sands and Kentish Flats wind farms in the same SPA.

- Whether other wind farms were consented elsewhere, under another country’s law, says nothing about whether this project, at this site, will harm the integrity of the North-west Irish Sea SPA. That is the test under Article 6(3), and it has to be applied to the facts here.
- The applicant’s own displacement appendix cites the survey of red-throated divers at Kentish Flats: **95% displacement within the array, reducing to 63% at 3 km** (Appendix A15.5, citing Percival et al. 2010). Red-throated diver is the main qualifying species of the Outer Thames Estuary SPA, and a qualifying species of the North-west Irish Sea SPA. The applicant’s chosen precedent shows the harm, not its absence.

1.4 ALTERNATIVES ARE AVAILABLE

1.4.1 The applicant argues (Addendum to EIAR Chapter 5, section 5.3, “Do-Nothing Alternative”) that:

- “there are limited suitable fixed-bottom offshore wind sites available in Irish waters”;
- floating wind “is not yet sufficiently mature or economically proven at commercial scale in Ireland”;
- without NISA there is “no clear or credible pathway” to exceeding 5 GW of offshore wind for more than a decade.

SWEG does not accept these statements. They are not consistent with the State’s own planning for offshore renewable energy.

1.4.2 **Alternative locations.** Ireland has moved to a plan-led system that steers offshore wind to areas chosen through strategic environmental assessment:

- **South Coast DMAP:** the first Designated Maritime Area Plan, approved by the Oireachtas on 10 October 2024, identifies four sites off Wexford, Waterford and Cork.
- **Tonn Nua¹⁴ auction:** held within that plan area, it procured 900 MW. Provisional results were announced in November 2025.
- **National DMAP:** approved by Government in May 2025, it aims to identify sites across Ireland’s maritime area for at least 15 GW of offshore renewable energy by 2040.
- **The Government’s own resource assessment:** published with the 2025 review of the Future Framework for Offshore Renewable Energy, it estimates an additional 3.5–18 GW of fixed-bottom wind potential beyond the 8 GW already planned (Department of Climate, Energy and the Environment, press release, 27 May 2025)¹⁵.

Suitable fixed-bottom sites outside the North-west Irish Sea SPA therefore exist. They are being progressed now.

1.4.3 **Alternative scale and layout.**

- **The project is 40% larger than its grid connection and support contract.**
 - NISA’s grid connection assessment (2019) and its provisional award in the State’s first offshore wind auction (ORESS 1, May 2023) are both for **500 MW**.
 - The application is for **700 MW**. The applicant says it applied for the larger figure to “future proof the planning application and maximise the potential output of the project”.
 - It argues that the Maritime Area Consent “is not explicit about the maximum capacity” and that there is “no legislative impediment” to applying for more (Response to Submissions Report, section 5.7.3.5).
 - None of this explains why the extra 200 MW, which has no grid connection or support contract, needs to be built inside an SPA and beside Rockabill.

¹⁴ William Fry, ORESS Tonn Nua auction results announced: <https://www.williamfry.com/knowledge/oress-tonn-nua-auction-results-announced/>

¹⁵ Department of Climate, Energy and the Environment, press release, 27 May 2025: <https://www.gov.ie/en/department-of-climate-energy-and-the-environment/press-releases/major-milestones-reached-as-state-continues-to-plan-for-its-long-term-offshore-renewable-energy-future>

- The applicant's own Option 2 shows the project can be built with 35 turbines rather than 49.
- **SWEG's compromise proposal: build to 500 MW, away from Rockabill.** SWEG supports offshore wind and does not seek to prevent it. Our primary position is that the principle of avoidance requires this project to be refused at this location. Only if the Commission does not accept that, we propose a compromise, as we did in August 2024: the project should be reduced to the 500 MW it has been contracted for. The 200 MW reduction should be made by removing the turbines nearest Rockabill and concentrating the remaining development in the north-east of the Maritime Area Consent area, further offshore, more than 15 km from Rockabill and away from the main migration routes, while staying in feasible water depths. SWEG has prepared two alternative layouts on this basis (see Section 5.5 and the maps there).
 - Based on the applicant's own figures, cutting 700 MW to 500 MW means removing about two-sevenths of the turbines. That is about 14 of the 49 turbines in Option 1 (leaving 35), or 10 of the 35 in Option 2 (leaving 25).
 - This would substantially widen the gap between the turbines and Rockabill. It would also reduce collision risk, displacement and visual impact.
 - The applicant has not assessed this alternative. Its reply simply repeats the case for 700 MW (Response to Submissions Report, section 5.7.3.5).
- In its response to the RFI, the applicant moved the turbines away from Rockabill by only about 110 metres, and in Option 1 it moved the turbine nearest the coast closer to the shore (see Section 5.1).
- The applicant dismissed SWEG's request for a wider buffer around Rockabill on the grounds that it "would not lead to a viable project based on the Developers MAC boundary" (Response to Submissions Report, section 5.7). That is an argument about the developer's chosen site, not about the protection of the SPA.

1.4.4 Alternative technology.

- Floating offshore wind has been operating commercially in European waters since 2017 (Hywind Scotland), with larger arrays since. It allows wind farms to be located further offshore, away from coastal colonies and the shallow, productive waters on which seabirds depend.
- The State's own Future Framework is planning for floating wind, including the case for floating wind at scale and a floating demonstration site.
- SWEG accepts that fixed-bottom wind is currently cheaper. Cost and programme are not, however, grounds for locating a project inside an SPA. Under Article 6(4) such considerations could arise only at the stage of imperative reasons of overriding public interest. That stage would itself require the absence of alternative solutions to be shown first.

1.4.5 The 5 GW target is not a reason to set aside avoidance.

- The applicant's argument that Ireland needs NISA to meet its 2030 target is an argument about timing and policy. It is not an argument that the site is environmentally suitable.
- It cannot substitute for the certainty required under Article 6(3).
- It cannot establish the absence of alternative solutions under Article 6(4) when the State itself is bringing forward alternative sites.

1.5 HOW THE PROJECT CAME TO BE INSIDE THE SPA

1.5.1 The location of this project was fixed through the State's Phase One process before the SPA was proposed. That does not make it any less relevant to the Commission's decision. The Commission is the competent authority under Article 6(3) of the Habitats Directive. It is bound directly by EU law and must apply it, whatever choices were made earlier in the process.

1.5.2 The sequence. NISA was granted its Maritime Area Consent on 23 December 2022 and a provisional 500 MW auction award on 11 May 2023. The Minister announced the proposed North-west Irish Sea SPA on 13 July 2023, describing it as "the largest SPA designation for birds in Ireland's history", and its conservation objectives were published on 19 September 2023 (Addendum to the NIS, Appendix A22, paras 3–6). In short, the State allocated a site for a very large wind farm and then, months later, recognised the same waters as the most important marine area for seabirds it has ever designated.

1.5.3 Why this matters for the Commission's decision.

- **The Commission must apply EU law itself.** As the competent authority and a body of the State, the Commission must apply the Habitats and Birds Directives directly. Where necessary it must set aside national arrangements that are incompatible with them (Case 103/88, *Fratelli Costanzo*). The Maritime Area Consent and the ORESS award give the developer access to the seabed and a route to market. They do not give it any entitlement to planning permission, and they do not lower the Article 6(3) test. The applicant's own counsel accepts that consent may be granted "only after having ascertained that it will not adversely affect the integrity" of the SPA (Appendix A22, para. 7).
- **The order in which decisions were taken does not make the site suitable.** The Maritime Area Consent pre-dates the SPA proposal, but the birds the SPA protects were using these waters long before either decision.
- **The applicant's own legal test is not met on its own figures.** The applicant's counsel argues that the North-west Irish Sea SPA conservation objectives come down, in essence, to avoiding "significant decline" in the protected populations (Appendix A22, paras 28–31 and 48). Even on that reading, the applicant's own population modelling predicts significant declines:
 - **kittiwake** in the SPA: 15–23% smaller after 35 years from NISA's collisions alone (Addendum to the NIS, Table A5.30). Kittiwake has a "restore" objective, not merely "maintain";
 - **guillemot** in the SPA: up to 9.7% smaller using the applicant's survey count, and up to 39.8% smaller using the State's own population figure (Table A5.17).

Section 2 sets these out in detail. Based on the applicant's own legal analysis, the Commission cannot ascertain that the integrity of the SPA will not be adversely affected.

- **"Overriding public interest" does not change the Article 6(3) test.** The revised Renewable Energy Directive (Directive (EU) 2023/2413, Article 16f) presumes renewable energy projects to be in the overriding public interest. That presumption is relevant only to the balancing exercise under Article 6(4) and similar derogations. It does not lower the requirement under Article 6(3) to exclude adverse effects on integrity beyond reasonable scientific doubt.
- **Article 6(4) has not been invoked and could not succeed.** The applicant's counsel expressly does not address Article 6(4) (Appendix A22, footnote 1). No compensatory measures have

been proposed. As shown in 1.4, alternative solutions exist. If adverse effects cannot be excluded, permission must therefore be refused.

1.6 CONCLUSION ON SECTION 1

1.6.1 SWEG submits that:

- (a) avoidance is the first and preferred step under the NMPF and in the protection of European sites, and it has not been applied to this application;
- (b) the applicant's only justification for building inside the North-west Irish Sea SPA and beside the Rockabill SPA is its own conclusion that there will be no adverse effect on integrity, a conclusion its own further information does not support (see Section 2);
- (c) realistic alternatives of location, scale and technology exist and have not been properly assessed;
- (d) if the Commission cannot exclude adverse effects on integrity, Article 6(4) could not be satisfied, because alternative solutions are available;
- (e) the project as applied for is 200 MW larger than its grid connection and support contract, and that excess capacity is being placed inside the SPA beside Rockabill;
- (f) the fact that the site was allocated before the SPA was proposed does not relieve the Commission of its own obligation to apply Article 6(3) strictly.

1.6.2 SWEG therefore asks the Commission to treat the location of this project within an SPA, and immediately beside the Rockabill SPA, as a decisive consideration, and to refuse permission.

1.6.3 If, despite this, the Commission is minded to grant permission, SWEG asks that the permission be limited to **500 MW**, the capacity for which the project holds a grid connection assessment and support contract, and that the array be moved further away from the Rockabill SPA. The reduction should be achieved by **removing the turbines closest to Rockabill**, so that the remaining turbines are concentrated in the north-east of the consent area.

Sources for Section 1

- Habitats Directive 92/43/EEC, Articles 6(3) and 6(4); CJEU C-127/02 *Waddenzee*; CJEU C-461/17 *Holohan*.
- European Commission, *Guidance document on wind energy developments and EU nature legislation*, C(2020) 7730 final, 18.11.2020, sections 2.2.3 and 3.5.
- European Commission, *Managing Natura 2000 sites: the provisions of Article 6*, C(2018) 7621, OJ C 33, 25.1.2019, section 5.3.1.
- Government of Ireland (2021), *National Marine Planning Framework: Biodiversity Policy 1* (p. 32) and Protected Marine Sites Policies 1 and 4 (p. 42).
- Directive (EU) 2023/2413 (RED III), Articles 15c and 16f.
- Case 103/88 *Fratelli Costanzo*.
- NPWS press release, 13 July 2023 (proposed North-west Irish Sea SPA).
- Applicant's Appendix A22, Senior Counsel Opinion (28 May 2026), paras 3–7, 28–31, 48 and footnote 1.
- DCEE press release, 27 May 2025: South Coast DMAP, National DMAP, Technical Resource Assessment.

- William Fry, Tonn Nua auction results.
- NPWS site synopsis, Rockabill SPA 004014; Perrow et al. 2019, *British Birds*.
- Applicant's documents:
 - Addendum to EIAR Chapter 5 (sections 5.3 and 5.5.9);
 - Addendum to the NIS (pp. 393 and 396; Tables A5.30 and A6.36);
 - Appendix A15.1 (Table A3-19, section 3.8);
 - Appendix A5.1 Design Refinements;
 - RFI Response Report (Item 6).

2 BIRDS

This section is in two parts. Section 2.1 sets out, species by species, the errors, omissions and inconsistencies in the applicant's further information on birds. Section 2.2 sets out what the published scientific evidence shows for each species, and what we ask the Commission to do.

HOW WE HAVE APPROACHED THE BIRD EVIDENCE

In preparing this part of our submission we have:

- asked an experienced ornithologist, Ms Marie Louise Heffernan, MSc, CEnv, MCIEEM, to review the technical bird assessments. Her analysis is attached as the **Appendix** to this submission, and we adopt it as part of our submission. Where we refer to her points below, we say so;
- relied wherever possible on the **applicant's own figures and tables**. Most of the problems we describe come from comparing what the applicant says in one document with what it says in another;
- built on the points made in our **original submission of August 2024**, many of which the applicant has now answered in its Response to Submissions Report (section 5.7). Where we think those answers fall short, we explain why.

A few terms used below

Term	Meaning
Collision	Birds killed by striking the turbine blades.
Displacement	Birds avoiding the wind farm and losing the use of feeding areas. This can leave them weaker, and some die.
Barrier effect	Birds having to fly around the wind farm to get between their nest and their feeding grounds, using extra energy, especially when feeding chicks.
Population model	A computer projection of how a colony will change over the 35-year life of the wind farm, with and without the extra deaths the wind farm causes.
"Restore" objective	A target set by the National Parks and Wildlife Service for a species that is already declining at a protected site. The population must be brought back up, not just held steady.

Birds of conservation concern

BirdWatch Ireland and RSPB Northern Ireland published the official list of Birds of Conservation Concern in Ireland. In the current list (2020–2026), 54 of the 211 species assessed are on the **Red list**, the highest level of concern, and 79 are on the **Amber list**.¹⁶ Many of the birds that use the NISA site, or fly through it, are on these lists:

Species	Status	Why it matters for NISA	See
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¹⁶ Gilbert, G., Stanbury, A. and Lewis, L. (2021). Birds of Conservation Concern in Ireland 4: 2020–2026. Irish Birds 43: 1–22. BirdWatch Ireland and RSPB NI: <https://birdwatchireland.ie/app/uploads/2021/04/BOCCI-2020-2026.pdf>

Species	Status	Why it matters for NISA	See
Kittiwake	Red (globally Vulnerable)	Declining at every nearby colony; NWIS SPA population 15–23% smaller from NISA's collisions alone	2.3
Razorbill	Red	Lambay colony; displacement from feeding areas	2.2
Puffin	Red	Lambay colony; brought into the displacement assessment only after the Board insisted	2.4
Common scoter	Red	NWIS SPA species; 3,081 recorded on passage along this coast in the applicant's autumn surveys	2.6
Curlew	Red	Migrant through the site; large flocks at the Gormanston landfall	2.6, 7.4
Purple sandpiper	Red	Winters on Rockabill and the Skerries Islands; a protected species of both SPAs	–
Redwing	Red	Recorded at night by the applicant's own acoustic surveys, but left out of the collision assessment	2.6
Roseate tern	Amber	Rockabill holds the largest colony in Europe	2.1
Common and Arctic terns	Amber	Rockabill colonies	2.1
Guillemot	Amber	Lambay and NWIS SPA; predicted declines of up to 38–40%	2.2
Red-throated and great northern divers	Amber	NWIS SPA species; strongly avoid wind farms	2.5
Cormorant and shag	Amber	Skerries Islands, Lambay and Ireland's Eye colonies; left out of the assessment	2.4
Manx shearwater	Amber	Lambay colony; no tracking data	2.4
Gannet	Amber	Breeds on Lambay; at risk of collision while feeding chicks	3.4
Light-bellied brent goose	Amber	Internationally important flyway population passes along this coast	2.6

Three of the seabirds whose colonies lie closest to the site (kittiwake, razorbill and puffin) are Red-listed. Seabirds are long-lived and breed slowly, so even a small rise in adult deaths can push a declining colony further down.

2.1 ERRORS, OMISSIONS AND INCONSISTENCIES IN THE APPLICANT'S BIRD INFORMATION

2.1.1 Terns at Rockabill (roseate, common and Arctic terns)

Rockabill, about 7 km off Skerries, holds the largest roseate tern colony in Europe: about 1,800 pairs, or around 85% of the European population.¹⁷ In our 2024 submission we said that placing turbines of this size so close to Rockabill posed a serious risk to the colony. The further information has, if anything, strengthened that concern.

2.1.1.1 The applicant gives four different distances between the wind farm and Rockabill.

Applicant's statement	Source
The array is 0.2 km from the Rockabill SPA.	Addendum to the NIS, pp. 393 and 396
"No activities are proposed within at least 3.5 km of Rockabill SPA".	RFI Response Report, p. 44
The turbine-free zone around Rockabill has been extended "from 3 NM to 3.06 NM", about 5.7 km.	Appendix A5.1, Design Refinements
"Rockabill Island is located 11.9 km from the array".	Response to Submissions Report, p. 5.7.27, reply to SWEG

These cannot all be true. The Rockabill SPA is a square around the islands, extending 3.5 km to each side and just under 5 km to each corner. An array boundary 0.2 km from the SPA is therefore between about 3.7 km and 5.2 km from the colony, and the turbines themselves are kept about 5.7 km away. None of these is 11.9 km. The applicant has also told the Commission that the 3.06 NM change "will reduce any potential barrier effects on terns". That change moved the turbines by only about 110 metres, and it was made for shipping safety. It will make no material difference to the barrier effect.

What we ask the Commission to do

1. Require the applicant to state clearly, for both layout options, the shortest distance from any turbine and from the array boundary to (a) the Rockabill SPA boundary and (b) Rockabill Island.

The design changes do not reduce the risk to the Rockabill colony, and may increase it. In our view, the layout changes in the further information make no material difference to the effects on birds. For Rockabill they may make matters worse. The changes were made mainly for shipping and search-and-rescue reasons, at the request of the Irish Coast Guard and the Marine Survey Office (Appendix A5.1, responses to RFI 2a and 2b). The applicant's own before-and-after maps (Appendix A5.1, Images A2.1 and A2.2) show the following:

- Turbines have been removed from the south-eastern corner of the array, the part furthest from the coast.

¹⁷ BirdWatch Ireland, Roseate tern: <https://birdwatchireland.ie/birds/roseate-tern/>

- Under both options, turbines have instead been placed along the western edge of the array and in its south-western tip. That is the side facing Rockabill and the Skerries coast.
- As a result, the nearest turbine to shore under Option 1 has moved from 13 km to 12.4 km (Addendum to Chapter 6, section 6.3.2).
- The number and height of turbines are unchanged.

In other words, the array has been thinned out where it matters least for Rockabill's terns and other protected species. It has been filled in along the edge they must cross, or fly beside, to reach their feeding grounds. The 110-metre widening of the gap around Rockabill does not offset this.

What we ask the Commission to do

2. Require the applicant to show, for each turbine, its distance from Rockabill in the 2024 and 2026 layouts. We also ask the Commission to require the applicant to explain whether its tern collision and barrier-effect assessments take account of turbines being moved towards the colony, or treat the array as a uniform block.

2.1.1.2 The predicted roseate tern deaths have gone up about ten times, yet the applicant still calls them "extremely small".

- In 2024 the applicant predicted about 0.1 roseate tern collisions a year. It now predicts about 1.2 a year, of which it counts 0.7 as breeding adults from Rockabill (Addendum to the NIS, Table A5.49), with an upper estimate of 3.8.
- Ms Heffernan points out that this is ten times the original estimate and that no population model has been produced for the Rockabill terns (see the Appendix).
- A prediction that changes tenfold when one more year of surveys is added is not one the Commission can rely on with certainty.

2.1.1.3 The applicant told SWEG in 2024 that roseate terns were rare at the site. Its own 2025 surveys show the opposite.

- In replying to our 2024 submission, the applicant said that only 16 roseate terns were recorded in the array area and 2 km around it over 29 surveys from 2020 to 2022. It described these aerial surveys as capturing terns "with high precision" (Response to Submissions Report, p. 5.7.10).
- Its own 2025 surveys tell a very different story. In the turbine area alone, the estimated number of roseate terns rose to 80 in July 2025 and 308 in August 2025. Within 2 km of the turbines, the estimate for August 2025 was 702 birds (Appendix A15.1, Table A3-19).
- Across the wider SPA, the applicant estimated 4,109 roseate terns in August 2025. It suggests this "may represent an overestimate" because Rockabill has only about 3,500 breeding adults (Appendix A15.1, Table A3-21). That ignores two things:
 - the young birds the colony produces each summer, roughly 2,000 a year at recent breeding success;
 - roseate terns from British colonies that pass through the Irish Sea, which the applicant's own report acknowledges.

2.1.1.4 The collision model "averages away" the year when the terns were actually counted.

- The model does not use the 2025 numbers as they were recorded. It averages the peak count for each of the four survey years: three years at or near zero, and 2025 at 308. That gives an average of 79 birds (Appendix A15.1, Table A3-20).
- In effect, the model assumes about a quarter of the roseate terns actually seen in 2025. If 2025 reflects the present situation, the predicted deaths could be around four times higher.
- Tracking research on terns warns that “short-term impact assessments can be misleading in a species with large inter-annual variation in distributions, as this can lead to very different amounts of overlap with proposed developments at sea” (Fijn, 2024, p. 142; see Section 2.2.1). The jump from almost no roseate terns to 308 in a single year is exactly that kind of variation.

2.1.1.5 Four in ten predicted tern deaths are removed before the colony is assessed.

- The applicant multiplies its predicted roseate and common tern collisions by 0.588, on the basis that only “59% of individuals are breeding adults” (Addendum to the NIS, pp. 394 and 397). The remaining 41% are then left out of the assessment of the Rockabill colony.
- In summer, the terns present are likely to be either breeding adults or that year’s young from Rockabill. Both are part of the protected population. Most immature roseate terns are believed to stay in West African waters in their first summer.
- Without this reduction, the applicant’s own upper estimate for roseate terns would exceed the 1% level at which it says further analysis is required.

2.1.1.6 Terns that could not be identified are never counted as roseate terns.

- From the air, it is often impossible to tell roseate, common and Arctic terns apart. The applicant has allocated all unidentified terns to common or Arctic terns only (Appendix A15.3, section 1.2). As far as we can tell from the applicant’s description, none were allocated to roseate tern.
- Any roseate terns among the unidentified birds have therefore simply dropped out of the count.

2.1.1.7 The applicant’s claims about how high roseate terns fly contradict each other. The applicant’s main argument is that terns fly low, below the turbine blades.

- In its reply to SWEG, it states that “Roseate terns spend >97% of their flight time at an altitude below 22m (Johnston et al., 2014)” (Response to Submissions Report, p. 5.7.13).
- Its own collision modelling report says the opposite about that very source: “The absence of generic flight height data for roseate terns from Johnston et al. (2014)” meant that common tern data had to be used instead (Appendix A15.3, para. 2.2.26).
- The applicant cannot rely on a study for roseate terns that, by its own account, contains no roseate tern data.

Other problems with the flight-height evidence:

- **Two figures that appear inconsistent.** For Arctic terns, the applicant says 0.22% of flights are within the rotor zone at 40 m. Its modelling report says only 0.141% of Arctic tern flights are *above* 40 m at all.
- **The real gap under the blades is smaller than described.** The applicant repeatedly says the blade tips will be at least 40 m above the sea. That figure is measured from the lowest tide.

In the collision model itself, the gap at high tide is **34.4 m**, and **29.4 m** for eight turbines in Option 2 (Appendix A15.3, Table A2-1).

- **Our 2024 photograph.** We showed terns flying around and above Rockabill lighthouse, which is about 46.5 m high above high water (Figure 1). The applicant replied that its “site-specific boat surveys recorded no terns at collision risk height” (Response to Submissions Report, p. 5.7.27). Yet its modelling report says its own survey flight-height data were not good enough to use in the model, and only 11 common terns and 2 Arctic terns were recorded in the array in those earlier surveys. A handful of birds cannot show how terns behave across a whole breeding season. Tracking research also shows that the way terns use an area matters: “A lower flight speed ..., increased flight height ..., and maybe even visual focus on the water surface ... may increase the collision risk of foraging terns in wind farms” (Fijn, 2024, p. 282). The applicant’s own tracking evidence shows Rockabill roseate terns foraging in the turbine area (Section 2.1.1.8).
- **Courtship flights.** Roseate terns also perform a courtship display known as the “high flight”, in which a pair “rapidly flies together, upwards to a great height (over 1,000 feet on occasion)” before gliding down.¹⁸ This has been described in North American colonies. That it has not been studied at Rockabill does not mean it does not happen there, and such flights would take birds through the full height of the rotors.



Figure 1. Terns flying around and above Rockabill lighthouse (SWEG)

2.1.1.8 The effect of the wind farm on terns travelling to and from their feeding grounds is dismissed in three sentences.

¹⁸ Cornell Lab of Ornithology, All About Birds, Roseate Tern life history: https://www.allaboutbirds.org/guide/Roseate_Tern/lifehistory

- The conservation objectives for Rockabill require no significant increase in “barriers to connectivity” and no significant decline in breeding success.
- The applicant’s assessment of barriers for roseate terns rests on general sensitivity scores and the statement that “the array area is also located beyond the Rockabill SPA boundary” (Addendum to the NIS, p. 397).
- Yet the applicant’s own baseline report states that tracking of Rockabill roseate terns “highlights high foraging usage of the area to the east and north-east of the site, resulting in potential overlap with the PFI” (the “Projected Footprint of Infrastructure”, that is, the turbine area) (Appendix A15.1, section 3.8).
- In 2024, BirdWatch Ireland pointed out that the applicant had not used the published tracking of Rockabill roseate terns (Perrow et al. 2019), which shows the birds regularly feeding in the area chosen for the array. The Commission asked the applicant to present this information and use it in the assessment (RFI Item 8(a)(i)). The applicant has still not done so. It says that a figure has not been included because “the underlying tracking data were not available”, and that “in the absence of raw data, no further analysis was possible” (Appendix A15.1, RFI response 8(a)(i)). The omission the Commission identified has therefore not been put right.
- The applicant has told SWEG that “there is no evidence that roseate terns avoid OWFs” (Response to Submissions Report, p. 5.7.13). That is because no study has been done, not because one has shown they do not. Tracking studies of the closely related Sandwich tern show the opposite: terns avoid wind farms when commuting and are funnelled around them (see Section 2.2.1). As the French State’s 2026 scientific assessment puts it, “the absence of proof of an effect cannot therefore be interpreted as proof of the absence of an effect” (see Section 2.2.8).

2.1.1.9 The combined effect with other wind farms is understated.

- The applicant’s table of combined roseate tern deaths lists the Codling wind farm as **0.0** (Addendum to EIAR Chapter 15, Table A15.91).
- Codling’s own assessment predicts about **0.4** Rockabill roseate tern deaths a year (Codling Wind Park, ACP case 320768, Appendix 10-K)¹⁹.
- Most British Irish Sea wind farms in the table are entered as “Unknown”.

2.1.1.10 Common and Arctic terns at Rockabill are given little attention, and the colony counts do not add up.

- For common terns, the applicant’s own upper estimate is 1.25% of normal yearly deaths (Addendum to the NIS, Table A5.48). That is above the 1% level the applicant says triggers a population model. None was produced.
- The applicant’s figures for the colony are inconsistent:
 - it records 2,034 pairs of common terns at Rockabill in 2020 (Appendix A15.1);
 - it uses a 2024 count of 1,620 birds, about 810 pairs (Appendix A15.8, Table A2-2), which it describes as the “SPA Citation population”;

¹⁹ Codling Wind Park, Further Information, EIAR Addendum Appendix 10-K, Roseate Tern Collision Risk Modelling: <https://www.pleanala.ie/publicaccess/FurtherInformation/320768/Applicant's%20Further%20Information%20Documents/05.%20EIAR%20Addendum%20Appendices/EIAR%20Addendum%20Chapter%2010%20Appendices/Appendix%2010-K%20Roseate%20Tern%20Collision%20Risk%20Modelling.pdf>

- for Arctic terns it gives 500 birds in 2010 and 64 in 2024.
- If these figures are right, Rockabill’s common and Arctic terns have fallen sharply in recent years, possibly linked to the 2023 bird flu outbreak at the colony. The assessment does not discuss this.

2.1.1.11 One reference population used is out of date and smaller than the Rockabill colony alone.

The applicant compares roseate tern deaths with a “biogeographic population of 2,900 individuals” (Addendum to EIAR Chapter 15, p. 15.112). Rockabill alone now holds 3,552 individuals according to the applicant’s own figures, more than 120% of that “population”. A figure for the wider population that is smaller than one of its colonies is clearly out of date. It also shows why effects on roseate terns have to be judged against the Rockabill colony itself: almost all the birds at risk belong to it.

2.1.2 Guillemots and razorbills (Lambay Island, Ireland’s Eye and the North-west Irish Sea SPA)

Lambay Island holds about 60,000 guillemots and more than 6,000 razorbills (NPWS, 2024), making it the largest colony of these seabirds on the east coast of Ireland. Ms Heffernan’s analysis deals with the guillemot assessment in detail (see the Appendix). We highlight the following.



Figure 2. Guillemots and terns on Rockabill, 14 June 2026 (photo: Shane Holland)

2.1.2.1 The applicant has moved July out of the breeding season, and this sharply reduces the predicted harm to Lambay.

- The Commission asked the applicant to treat March to July as the guillemot breeding season, in line with standard UK practice. The applicant presents those results but bases its conclusions on its own April to June season.
- The difference is large:

- the number of guillemots counted in the wind farm area during the breeding season falls from about **16,300 to under 1,000** (Addendum to the NIS, Table A5.16, as noted by Ms Heffernan);
- the share of displaced birds attributed to Lambay falls from **93.8% to about 10.6%** for July birds (Appendix A15.8, Table A2-4).

2.1.2.2 The main reason given for excluding July is based on the wrong month.

- The applicant says that “approximately 300,000 guillemots” were present in the SPA in July, far more than Lambay holds, so July birds cannot be mainly Lambay breeders (RFI Response Report, p. 31; Appendix A15.1, p. 68).
- Its own survey table shows the figure of 326,565 was recorded in **August** 2025. The July figure was 261,549 (Appendix A15.1, Table A3-30).
- The argument also mixes up two different numbers. The share attributed to Lambay applies to birds within the wind farm area, not to every guillemot in the whole SPA. Even under the March to July season, 93.8% of the roughly 16,300 birds in the wind farm area is about 15,300 birds. That is around a quarter of Lambay’s population, a perfectly possible figure.

2.1.2.3 The applicant itself accepts that guillemots are still breeding in July.

- Its baseline report states: “It is highly likely that some breeding continues into July”. It also admits that early-July surveys “occasionally coincide with the tail end of chick-rearing” (Appendix A15.1, p. 69).
- Two of the three original July surveys were flown on 4 and 5 July. The applicant classes the 5 July 2021 survey as showing no post-breeding dispersal. It classes the 4 July 2022 survey as “clear post-breeding dispersal”, even though it says dispersal usually begins in the second half of July.
- After the young guillemot leaves the cliff, it is still unable to fly and is cared for at sea by its father. The adults then moult and cannot fly for several weeks. The applicant’s own report describes dispersing guillemots as “flightless due to moult” (Appendix A15.8).
- The July birds at sea are therefore largely parents and chicks from the breeding colonies, at the point when they are least able to move away from disturbance.

2.1.2.4 The applicant sets aside its own population results.

- The applicant’s population models produce two kinds of result:
 - the change in the yearly growth rate of a colony;
 - how much smaller the colony will be after 35 years.
- The applicant states that the second result “is presented for completeness but is not relied upon in the assessment” (Addendum to the NIS, p. 260). It treats any reduction in the growth rate of less than 0.5% a year as having no meaningful effect.
- **A 0.5% reduction every year adds up to a population about 16% smaller after 35 years.** The applicant’s threshold for “no meaningful effect” therefore allows a substantial decline.
- Yet the conservation objective for guillemot is no significant decline in the population. A colony that ends up a sixth smaller has declined.
- The applicant’s own tables show much larger reductions when the assessment is done as the Commission asked:

Population	Basis	Population after 35 years	Source
Lambay guillemots	NISA alone, Commission's season, NatureScot rates	9.5% to 16.2% smaller	Addendum to the NIS, Table A6.36; Ms Heffernan
Lambay guillemots	NISA plus other wind farms, same basis	23.3% to 38.0% smaller	Addendum to the NIS, Table A6.36; Ms Heffernan
North-west Irish Sea SPA guillemots	Applicant's own survey count	up to 9.7% smaller	Addendum to the NIS, Table A5.17
North-west Irish Sea SPA guillemots	Population figure from the State's official surveys (86,024 birds)	up to 39.8% smaller	Addendum to the NIS, Table A5.17

- The text of the assessment says that only one scenario using the State's population figure exceeds the applicant's 0.5% threshold (Addendum to the NIS, p. 267). Its own table shows that three do (Table A5.17).

2.1.2.5 Thirty-five years is not "temporary". The applicant describes the loss of feeding areas for guillemots as "temporary and reversible" (RFI Response Report, p. 46). The turbines would stand for decades. The applicant's own population models run for 35 years.

2.1.2.6 The colony sizes used to share out the impacts are out of date. The applicant has not updated the colony sizes used to share predicted impacts between colonies. It assumes that all colonies "have changed in proportion to one another" (Appendix A15.8, section 2.5). Its own table shows they have not:

Colony	Species	Earlier count	Recent count	Change
Lambay	Kittiwake	7,894	4,446	-44%
Rathlin	Kittiwake	6,822	19,258	+182%
Ireland's Eye	Kittiwake	2,048	788	-62%

The same table gives a Lambay guillemot count (77,998 in 2004) that does not match the applicant's own description of the colony as stable at about 60,000 (Addendum to the NIS, p. 722).

2.1.2.7 Errors queried by the Board are denied and then corrected. The Board's ornithologists identified errors in the guillemot survey tables. The applicant first "confirms that none are present". It then states that "this discrepancy has been amended" (RFI Response Report, pp. 31–32).

2.1.3 Kittiwakes (Howth Head Coast, Ireland's Eye, Lambay and the North-west Irish Sea SPA)

Kittiwakes are declining at all the nearby colonies, and each has a "restore" objective:

Colony	Decline
Howth Head Coast	down 32% between 2007 and 2015
Ireland's Eye	down 28% since 2007

Colony	Decline
Lambay	down 26% since 1987

(NPWS conservation objectives, 2024)

The latest national seabird census, Seabirds Count (2015–2021), recorded 941 pairs of kittiwakes on the Howth Head coast, compared with 2,269 pairs in 1999: a fall of almost 60%.²⁰ Kittiwakes are among the fastest-declining seabirds in Ireland.

2.1.3.1 The applicant’s own model predicts a much smaller kittiwake population in the SPA from NISA alone. For collision deaths from NISA alone, the applicant’s model predicts a kittiwake population in the North-west Irish Sea SPA 15% smaller after 35 years, using its own survey population. Using the State’s figure, the prediction is 23% smaller (Addendum to the NIS, Table A5.30). The applicant again relies only on the growth-rate result and concludes there is no adverse effect.

2.1.3.2 The cumulative result at Howth Head Coast is not reconciled with the restore objective.

- As Ms Heffernan points out, the applicant predicts 9.3 adult kittiwake deaths a year at Howth Head Coast from all wind farms combined. That gives a population 10.3% smaller after 35 years (Addendum to the NIS, Tables A6.32–A6.33).
- The applicant accepts the colony has been declining at 1.69% a year, yet concludes that the “restore” objective is not affected.
- In the same passage it refers to “the Ireland’s Eye SPA population” when discussing Howth Head, which suggests the text was copied from another section.

2.1.3.3 The same population figure is called “not reliable” and “the most robust” a few pages apart.

- In the kittiwake displacement section, the applicant says its own survey population and the State’s figure “are not considered reliable for assessment, as this value is far too small” (Addendum to the NIS, p. 308).
- In the kittiwake collision section, it says “the NWIS DAS population is considered the most robust and representative”.

The applicant appears to choose whichever population figure gives the smaller effect.

2.1.3.4 Deaths from collisions and from loss of feeding areas are not added together. For kittiwakes, the applicant assesses collision deaths and deaths from losing feeding areas separately. As far as we can see, it does not combine them in a single population model for the colonies concerned. Blue Ireland has made the same point about the Codling wind farm. The birds, however, face both effects.

2.1.3.5 Kittiwakes were left out of the displacement assessment until the Board intervened. In 2024 the applicant screened kittiwakes out of the assessment of birds losing their feeding areas altogether, saying there was “an inconsistent evidence base”. The Board disagreed, because of the site’s closeness to the coast and to breeding colonies (RFI Item 8(c)(ii)). The applicant has now done the assessment, but still maintains that kittiwakes “are not considered vulnerable to impacts from disturbance and displacement” and keeps its own lower-impact “Developer approach” as its

²⁰ Burnell, D. et al. (2023). *Seabirds Count: a census of breeding seabirds in Britain and Ireland (2015–2021)*. Lynx Nature Books, Barcelona.

preferred method (Addendum to the NIS, section 5.4.1.3.1, pp. 252–254). For a Red-listed species with a “restore” objective at every nearby colony, the Board’s precautionary approach should be the basis of the decision, not the applicant’s.

2.1.3.6 A key German study is described too narrowly. The applicant describes a study that found a 45% fall in kittiwakes near German wind farms in the breeding season (Peschko et al. 2020)²¹, and says the fall applied within the wind farm and 3 km around it (RFI Response Report, p. 36). That is correct as far as it goes. But the same study also found “a significant reduction in kittiwake density up to a distance of ~20 km” in the breeding season, with kittiwake numbers 29% lower across that whole area (Peschko et al. 2020, p. 7 and Table 2). The applicant does not mention this. For kittiwakes from Howth Head, Ireland’s Eye and Lambay, a reduction reaching 20 km from the array would cover much of their feeding area.

2.1.4 Shags, cormorants, puffins and Manx shearwaters

2.1.4.1 Shags and cormorants are left out of the assessment despite steep declines.

- At Lambay, shags have fallen by 93% (from 1,597 nests to 116) and cormorants by 77% (from 1,027 to 234) since 1987 (NPWS, 2024). Both have “restore” objectives.
- The applicant has left both species out of the assessment altogether, relying on general studies suggesting they are not affected by wind farms (RFI Response Report, pp. 33–34).
- The **Skerries Islands SPA**, only 9.3 km from the array, supports an internationally important breeding population of cormorants, as well as shags. It includes Colt Island, where SWEG members have photographed a large cormorant colony (Figure 3). The applicant has screened both species out of the offshore assessment for this SPA, because they are “not considered to be vulnerable to OWF impacts” (Addendum to the NIS, section 5.4.10). According to the Fingal Biodiversity Action Plan 2023–2030, the three large cormorant colonies on Lambay, Ireland’s Eye and St Patrick’s Island “collectively form a ‘supercolony’ that comprises the largest aggregation of the species anywhere in Britain or Ireland”.

²¹ Peschko, V. et al. (2020), effects of offshore windfarms on seabird abundance: strong effects in spring and in the breeding season: <https://tethys.pnnl.gov/publications/effects-offshore-windfarms-seabird-abundance-strong-effects-spring-breeding-season>



Figure 3. Cormorants on Colt Island, Skerries, with Rockabill in the distance (summer 2026)

- A species that has lost more than nine-tenths of its numbers should not be dismissed without a site-specific assessment, including the effect of construction and maintenance vessels.

2.1.4.2 The Lambay Manx shearwater colony.

- The applicant relies on a 2002 estimate of 25 pairs of Manx shearwaters on Lambay and states that no tracking data is available (Addendum to the NIS, p. 365).
- BirdWatch Ireland reported in 2024 that it had rediscovered the colony and recommended urgent tracking before any construction (BirdWatch Ireland submission, 2024).
- No such work has been done.

2.1.4.3 Guillemots and razorbills that may have been missed.

- BirdWatch Ireland's wardens have for many years seen large numbers of guillemots and razorbills flying north and south past Rockabill in summer, probably from Lambay to feeding areas that may include the NISA wind farm site.
- BirdWatch Ireland noted that its tracking of Lambay birds probably did not sample those birds, because different parts of the same colony can use very different feeding areas (BirdWatch Ireland submission, 2024).
- The applicant has not addressed this.

2.1.5 Divers, the avoidance evidence and bird flu

2.1.5.1 Red-throated divers.

- **The surveys the Commission asked for were not done.** The Commission asked the applicant to consider targeted surveys over one winter, with two surveys a month in the critical months for wintering red-throated divers: one survey in each of November and December, two in each of January, February and March, and one in April. That is nine surveys, six of them in January to March. The applicant did not carry them out. It relied instead on the regional aerial surveys of the whole SPA, which provide “one survey per month in line with the OWF industry standards” (Appendix A15.1, RFI response 8(a)(ii)): six surveys in the same period instead of nine, and three in January to March instead of six.
- **The higher-density survey data the Commission pointed to were not used in the assessment.** The Commission noted that aerial surveys off Gormanston in 2018–2019 (HiDef, 2019) found red-throated divers at densities of 1.35 to 3.45 birds per km², higher than those used in the applicant’s displacement assessment, close to the coast west of the array and overlapping the cable route. It asked for these data to be included. The applicant “chose to use the 12-month NWIS DAS dataset” instead (Appendix A15.1, RFI response 8(a)(ii)). It describes the Gormanston data only in an annex, which confirms a “high abundance of red-throated diver” there, especially in December and February, and that most divers were “closer to the coast within the 10km buffer” (Appendix A15.1, Annex A2). Those data have not been used to calculate the number of divers displaced.
- **Divers strongly avoid wind farms.** In the German North Sea, numbers of divers fell by 94% within wind farms and 1 km around them, and by 52% within 10 km, with densities reduced up to 9–12 km away (Garthe et al. 2023)²². Underestimating the number of divers in and around the site therefore directly understates the number that would be displaced.
- We note that the applicant’s surveys recorded few divers within the turbine area itself. The applicant itself expects diver density to “decrease with distance from the coast” (Appendix A15.1, Annex A2). That is a further reason to place turbines further offshore.
- In 2024 the applicant screened red-throated divers out of the assessment of displacement from the array area. The Board asked it to reconsider, noting that the whole array lies inside an SPA for which the diver is a protected species (RFI Items 8(c) and 8(e)(v)). The applicant has now assessed displacement up to 10 km from the array.
- The switch to suction-bucket foundations reduces construction noise. It does nothing about the main long-term threat to divers, which is that they avoid operating wind farms over large distances for the 35-year life of the project (see 2.2.6). The divers’ conservation objective in the SPA is “no significant decline” in the wintering population (NIS Addendum, section 6.4.7.1).

What we ask the Commission to do

3. Require the targeted winter diver surveys it asked for, and an assessment of diver displacement, along the cable route as well as around the array, that uses the Gormanston survey densities.

2.1.5.2 The evidence relied on to support the tern mitigation is not about terns. To support its claim that birds avoid turbine blades, the applicant relies on two studies:

²² Garthe, S. et al. (2023), large-scale effects of offshore wind farms on red-throated divers (summary): <https://www.birdguides.com/articles/conservation/red-throated-divers-displaced-by-north-sea-wind-farms/>

Study	What it actually covered
Aberdeen, Scotland	Gannets, gulls and kittiwakes, filmed in daylight and good visibility, at one wind farm. No terns.
German “VolZug” ²³ project	A coastal wind farm on land, funded by the German offshore wind industry association. It also found far more birds passing through the rotors when the turbines were idle, which the applicant does not mention.

The same section ends by concluding that the project “will not result in an AEoI of the River Boyne and River Blackwater SAC”. That is a river site with no connection to terns, which again suggests text copied from elsewhere (RFI Response Report, p. 38).

2.1.5.3 Bird flu.

- The applicant says that bird flu “does not alter the relative spatial distribution” of seabirds at sea (RFI Response Report, p. 28). It gives no evidence for this.
- In 2023 common terns on Rockabill tested positive for bird flu (BirdWatch Ireland, July 2023). Wardens found more than 700 dead adult common terns and more than 1,100 dead chicks at Rockabill, Dublin Port and Lady’s Island Lake that year. A census in 2024 recorded a loss of 1,250 breeding pairs across these colonies, and the Rockabill colony fell to its lowest count since 2003.²⁴ A colony at its lowest level in two decades has little resilience to absorb further pressure from displacement, barrier effects or collisions.

2.1.6 Migratory birds

The Irish Sea is part of one of Europe’s great migration routes. Every spring and autumn, waders, wildfowl and songbirds move between Iceland, Greenland, Arctic Canada and Scandinavia and their wintering grounds in Ireland, Britain, southern Europe and Africa. Many travel at night and in poor visibility, when they can see least and are most at risk from tall structures. We made this point in 2024. NISA would place up to 49 turbines, up to 316 m tall, with rotors up to 276 m across and blade tips moving at up to about 390 km/h (see 2.1.9.1), in the path of these birds.

²³ Liedtke et al. (2025), collision risk of migrating birds at wind farms, final report of the VolZug project: <https://tethys.pnnl.gov/publications/collision-risk-migrating-birds-wind-farms-final-report-volzug-project>

²⁴ BirdWatch Ireland, “Devastating Bird Flu impacts on Irish seabirds revealed in new study”, 18 November 2024: <https://birdwatchireland.ie/?p=218280>

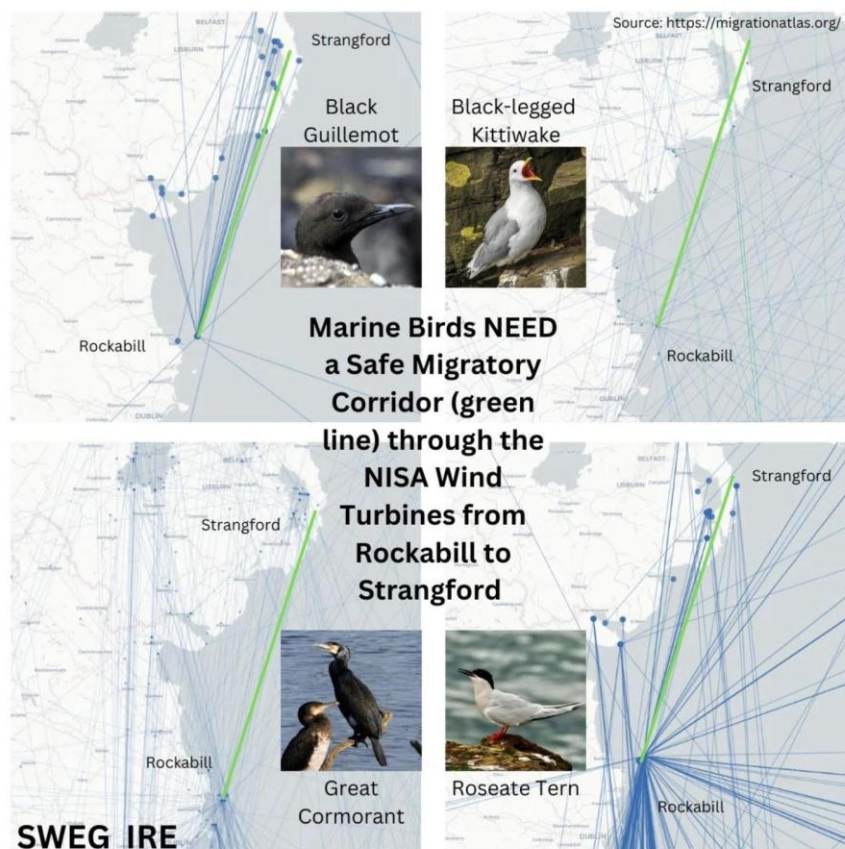


Figure 4. SWEG map of the flight paths of four seabird species between Rockabill and Strangford Lough, showing the need for a safe migratory corridor through the NISA array (based on data from migrationatlas.org)

2.1.6.1 The Board's request was not met.

- The Board asked for radar or a similar method to record migration through the site, said that relying on published studies alone was not enough, and asked for information in winter as well as in spring and autumn.
- The applicant did not use radar. It says radar “would not meaningfully reduce uncertainty or alter the assessment conclusions” (Ch 15 Addendum, RFI response 8(a)(iv)). That is a conclusion about data it chose not to collect. Radar is the standard method for measuring bird migration at sea, especially at night and in poor visibility, when birds cannot be seen or counted. Radar studies at an offshore research platform in the German North Sea found that a large share of migrating birds flew at the heights swept by turbine rotors, and recorded collisions of migrating songbirds, mainly thrushes, with the lit platform in poor weather.²⁵
- Its new surveys covered **autumn only**: three boat surveys in November 2024, daytime vantage-point counts from September to December 2025, and acoustic recorders at Bremore and on Rockabill from 4 September to 13 November 2025 (Appendix A15.7). There was **no spring survey and no winter survey**. Apart from the acoustic recorders, there was **no survey at night**, although much bird migration takes place at night and in poor visibility. That is exactly why the Board asked for radar.
- Yet it concludes that “there are no data gaps” (RFI Response Report, p. 28).

2.1.6.2 The birds heard at night were left out of the collision assessment.

²⁵ Hüppop, O., Dierschke, J., Exo, K.-M., Fredrich, E. and Hill, R. (2006). Bird migration studies and potential collision risk with offshore wind turbines. *Ibis* 148: 90–109.

- The applicant's own night-time acoustic recorders picked up large numbers of songbirds on migration, including an estimated **991 redwings, 210 robins, 89 blackbirds and 93 skylarks** (Appendix A15.7, Table A3-15).
- None of these species is in the collision assessment. The applicant says they "cannot be assessed using the mCRM tool" and fly low (Ch 15 Addendum, section 15.5.3.4). In other words, the birds were left out because the applicant's computer model cannot handle them.
- The applicant's own survey report accepts that acoustic recorders miss birds that do not call in flight, and birds flying too high to be heard (Appendix A15.7, section on limitations). Daytime counts from land also miss small birds further out to sea.
- Research on North Sea wind farms has found that "during a single night of intense songbird migration, the number of collision victims among passerine migrants might be in the order of magnitude of several thousands in the entire North Sea".²⁶

2.1.6.3 The collision figures rest on assumptions, not measurements.

- The applicant assumes that migrating birds are at low risk because migration happens "on a broad front" and "either above (at altitude) or below (close to the sea surface) rotor height" (Ch 15 Addendum, section 15.5.3.4). It has no radar or night-time flight-height data from the site to support that assumption.
- Its blade tips would reach about 390 km/h (see 2.1.9.1).
- Each species' predicted deaths are compared with the whole Irish population of that species. Against national populations of tens of thousands, almost any loss looks small. The applicant itself notes that species such as **curlew**, with low reproductive rates, recover more slowly. Curlew is red-listed in Ireland, and residents report flocks of over 1,000 curlew near the landfall at Gormanston (see Section 6.4).
- **Brent geese.** Light-bellied brent geese that breed in Arctic Canada stage at Strangford Lough in autumn and then move south along this coast to Dublin Bay. The applicant's own autumn surveys recorded 464 brent geese, the second most common wildfowl species (Appendix A15.7, Table A3-6). It concludes that wildfowl "habitually use more inshore routes", but those surveys were made from land only and in daylight. Its own collision table includes the whole Canadian light-bellied brent goose population of about 35,150 birds (Ch 15 Addendum, Table A15.46). Light-bellied brent goose is a special conservation interest of the Skerries Islands SPA. Without radar, and without night-time or spring surveys, the applicant cannot know how many of these geese cross the array area.

2.1.6.4 The cumulative assessment stops at the Irish coastline. For migratory birds, the applicant includes only the Irish Phase One wind farms, which together are predicted to kill up to about 57 snipe a year (Ch 15 Addendum, section 15.9.9 and Table A15.100). It leaves out every wind farm in British and Manx waters, saying their inclusion "would not produce meaningful or ecologically realistic results". Birds migrating to and from Ireland across the Irish Sea pass those wind farms too. The French State's 2026 scientific assessment notes that collision risk for migrating birds is assessed mainly by modelling, with very few direct observations (see Section 2.2.8). That is a further reason to measure migration at this site directly, with radar, rather than rely on a model alone.

²⁶ Brabant, R., Vanermen, N., Stienen, E.W.M. and Degraer, S. (2015). Towards a cumulative collision risk assessment of local and migrating birds in North Sea offshore wind farms. *Hydrobiologia* 756: 63–74 (abstract). Also cited in Ifremer and CNRS (2026), Synthèse EScO, Part 3, chapter 1.

What we ask the Commission to do

4. Require the applicant to:

- carry out radar surveys of migration through the array area, in spring, autumn and winter and at night, as the Board asked;
- assess the collision risk to nocturnal songbird migrants, including thrushes, rather than excluding them because the model cannot handle them;
- assess the effect on curlew and light-bellied brent goose against the relevant protected-site populations, not only national totals;
- include all Irish Sea wind farms, in British and Manx waters as well as Irish, in the cumulative assessment for migratory birds.

2.1.7 The new foundations, the seabed and the birds' food

The applicant presents its switch to suction-bucket jacket foundations as an environmental improvement. It does remove pile-driving noise, which SWEG welcomes (see Section 3.2.1). But it also has costs on the seabed that the further information does not fully address.

2.1.7.1 Much more rock armour on the seabed.

- The applicant itself states that “the extent and volume of scour protection on the seabed has increased”, because suction-bucket jackets have “a larger seabed footprint and shallower seabed penetration” (Addendum to EIAR Chapter 6, section 6.5.4).
- The rock armour (“scour protection”) around each foundation grows from 44 m across for a monopile, or 77 m for a piled jacket, to 98 m across. That is about 7,500 m² at every turbine, roughly five times the area needed for a monopile.
- For Option 1 (49 turbines) the applicant gives a total of 369,605 m², about 37 hectares of seabed permanently covered in rock. The applicant says this rock “will be left in situ” when the wind farm is decommissioned.

2.1.7.2 The figure for Option 2 does not add up. The applicant gives the Option 2 total as 142,503 m² (Table A6.6). At 7,543 m² per foundation that corresponds to only about 19 foundations, but Option 2 has 35 turbines. The correct figure would be about 264,000 m². Either the table is wrong or some foundations have been left out.

2.1.7.3 The cable route crosses the birds' feeding grounds. The applicant's own assessment finds “suitable sandeel habitats along most of the ECC [export cable corridor] and in the wider region to the south of the offshore development area” (NIS Addendum, section 5.4.1.1.3).

- Sandeels and other small shoaling fish are the main food of Rockabill's terns, and of kittiwakes and auks.
- Sandeels are particularly vulnerable to changes in the seabed. They spend much of their lives buried in clean, sandy sediment of a particular grain size, emerging to feed in the water column, and they lay their eggs on the seabed. They stay faithful to the same patches of sand and do not readily move to new grounds. If the sediment is disturbed, covered by rock or cable protection, or changed by altered currents, the local sandeel population can decline, and it may take years to recover, if it recovers at all.

- When sandeel stocks fall, the seabirds that depend on them can suffer breeding failure. When sandeel stocks collapsed around Shetland in the late 1980s, Arctic terns and kittiwakes there failed to raise young for several years in succession. Terns, which carry a single fish to their chicks and can only feed near the surface, are among the first to be affected.
- The Rockabill SPA conservation objectives set a target of “no significant decline” in the prey biomass available to roseate terns (NPWS, Conservation Objectives: Rockabill SPA 004014²⁷, 2013).
- The applicant concludes that losses of sandeel habitat “will likely be small” and that sediment plumes will clear “within a couple of tidal cycles”. However, it does not quantify how much suitable sandeel habitat along the cable route will be disturbed during construction, or permanently covered by rock or other cable protection. It gives no map of sandeel habitat against the cable route and protection, and no estimate of how long the habitat would take to recover. Nor does it assess what any loss would mean for the food supply of the terns at Rockabill, or of the kittiwakes and auks of the SPAs nearby.
- The applicant’s own evidence on sandeel habitat is also inconsistent: surveys in 2023 found most of the cable route suitable for sandeel, while surveys in 2025 classed every station on the route as unsuitable (see Section 3.1.4). With evidence this uncertain, the precautionary approach is to treat the cable route as sandeel habitat.
- Terns and divers hunt by sight. Cloudy water from cable laying during the breeding or wintering seasons could reduce their feeding success, even if only for a time.

What we ask the Commission to do

5. Require the applicant to:
 - correct the Option 2 scour protection figure;
 - quantify the area of suitable sandeel habitat that will be disturbed or permanently lost along the cable route and in the array;
 - assess the effect on prey available to the Rockabill terns, and to the kittiwakes and auks of the nearby SPAs, in light of the Rockabill SPA’s prey biomass target;
 - avoid cable laying close to the tern colonies during the breeding season.

2.1.8 Pollution from construction and operation

A wind farm is not pollution-free. The applicant’s own description lists what each turbine will contain:

- “lubricating oils, hydraulic oils and coolants”, grease, synthetic oil, transformer oil, SF6 gas and glycerol;
- at the offshore substation, diesel tanks, transformer oil, glycol and lead-acid batteries (Addendum to EIAR Chapter 15, Table of maximum design scenarios, p. 15.34).

²⁷ NPWS (2013), Conservation Objectives: Rockabill SPA 004014, Version 1: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004014.pdf

It does not state the volumes, saying they “will vary depending on the WTG design”. It also proposes to protect the foundations from corrosion with **sacrificial zinc or aluminium anodes** (Addendum to EIAR Chapter 6, Table A6.5). These slowly dissolve into the sea by design.

2.1.8.1 What the research shows.

- **Corrosion anodes.** German government research on North Sea wind farms has detected locally raised concentrations of metals from these anodes in the water, and especially lead in sediments near the turbines. Indium in particular has been traced back to the wind farms (BSH, OffChEm²⁸ project summary, 2022; Ebeling²⁹ et al., *Marine Pollution Bulletin*, 2025). The German authority (BSH) recommends that future wind farms “should increasingly use impressed current cathodic protection systems”, which “are associated with very low chemical emissions”.
- **The French State’s assessment agrees.** The 2026 scientific assessment by Ifremer and CNRS (see Section 2.2.8) found that galvanic anodes “progressively release trace metal elements” such as aluminium, zinc and indium, that some marine organisms accumulate them, and that the consequences for populations and ecosystems are poorly documented.³⁰
- **Blade erosion.** Rain, salt and hail wear away the leading edges of turbine blades, releasing plastic particles. A 2025 study for the Dutch North Sea estimated about **240 g of microplastics per 15 MW turbine per year**, even with protective coatings (Caboni³¹ et al., *Wind Energy Science*, 2025). NISA’s turbines are larger, with blades up to about 135 m long. Over 35 years that adds up across the array.
- **The scale of these emissions.** SWEG accepts that these emissions are small compared with other sources at sea, and that the research found effects to be mostly local.

2.1.8.2 Why location matters. That is exactly the point: these effects are concentrated in and around the wind farm. The applicant proposes to place that source of continuous low-level pollution:

- inside the North-west Irish Sea SPA;
- beside the Rockabill colony, where terns dive for small fish within the upper layer of the sea;
- within the main foraging range of the Lambay, Skerries Islands and Ireland’s Eye colonies.

The same applies to accidental spills of oil or coolant during construction and maintenance. With up to 70 vessels on site at once and over 3,000 vessel round trips during construction alone (Section 4.5), a spill at NISA would be within a few kilometres of some of Ireland’s most important seabird colonies. Auks such as guillemots and razorbills are among the birds most vulnerable to oil at sea. The further a wind farm is from the colonies and their main feeding grounds, the lower the exposure of the birds to all of these risks.

2.1.8.3 The applicant has not updated its assessment. For birds, the accidental pollution assessment is unchanged from 2024 (“There are no changes to this section”, Ch 15 Addendum, sections 15.5.2.3

²⁸ BSH (2022), Chemical emissions from offshore wind farms – summary of the project OffChEm: <https://tethys.pnnl.gov/publications/chemical-emissions-offshore-wind-farms-summary-project-offchem>

²⁹ Ebeling, A. et al. (2025). Coupling metal concentrations and drift simulations for tracing emissions from offshore wind farms. *Marine Pollution Bulletin* 214, 117810: https://tethys.pnnl.gov/sites/default/files/publications/Ebeling_et_al_2025.pdf

³⁰ Ifremer and CNRS (2026), Résumé ESCo, p. 5. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

³¹ Caboni, M. et al. (2025). Estimating microplastic emissions from offshore wind turbine blades in the Dutch North Sea. *Wind Energy Science* 10, 1123–1136: <https://wes.copernicus.org/articles/10/1123/2025/>

and 15.5.4.3). That is despite the change in foundation type, the increase in vessel numbers and the concerns raised by observers.

- In reply to concerns about BPA from blade epoxy, the applicant says the only release mechanism is “mechanical stress or scratches that penetrate the protective coating” (Response to Submissions Report, section 5.8).
- Leading-edge erosion is precisely such a mechanism, and it happens continuously over the life of the turbines.

What we ask the Commission to do

6. Require the applicant to:
 - state the volumes of oils, coolants and other fluids per turbine and at the substation;
 - assess the risk to the nearby colonies of a spill during construction and operation;
 - assess emissions from blade erosion and from the corrosion protection system;
 - use impressed current cathodic protection instead of sacrificial zinc or aluminium anodes, as recommended by the German authority (BSH).
7. Above all, recognise that the simplest way to reduce these risks to the protected birds is distance.

2.1.9 Overall

Throughout the further information, the applicant concludes “beyond reasonable scientific doubt” that there will be no harm to any protected site. At the same time, it:

- presents wide uncertainty ranges;
- declines several of the methods the Board asked for;
- sets aside its own population results;
- treats its own preferred, lower-impact assumptions as decisive.

2.1.9.1 How fast the blades move. The applicant gives rotor speeds of 3–8.3 revolutions per minute for the 250 m rotor (Option 1) and 3–7.5 for the 276 m rotor (Option 2) (Ch 6 Addendum, Table A6.2, where the unit is wrongly given as “m/s”). At top speed, the blade tips therefore travel at about **109 metres per second, or about 390 km/h**, under both options ($\pi \times 250 \text{ m} \times 8.3 \text{ per minute}$; $\pi \times 276 \text{ m} \times 7.5 \text{ per minute}$). A bird flying through the rotor has a fraction of a second to react. This is one reason why the collision models are so sensitive to the avoidance rates assumed, and why those rates must be justified for the species concerned.

As Ms Heffernan puts it, scientific doubt cannot be resolved simply by choosing the assumptions that give the smallest effects (see the Appendix).

2.2 WHAT THE SCIENTIFIC EVIDENCE SHOWS, SPECIES BY SPECIES, AND WHAT WE ASK THE COMMISSION TO DO

In this section we set out, species by species, what published research shows and the specific steps we ask the Commission to take. Where the evidence supports the applicant, we say so.

2.2.1 Terns

What the evidence shows

- **Turbines across a colony's flight path kill terns.** At Zeebrugge in Belgium, turbines placed across the flight route between a tern colony and the sea killed about 11 terns per turbine each year. That was between 1.8% and 3.7% of the common tern population annually. The researchers recommended that turbines should not be built close to important tern colonies (Everaert & Stienen³², *Biodiversity and Conservation*, 2007). The Zeebrugge turbines were smaller and much closer to the nests than NISA's. The lesson is that turbines lying across the route terns take to feed are dangerous.
- **Rockabill's roseate terns feed far beyond the SPA boundary.** Tracking of Rockabill roseate terns shows they routinely feed up to about 30 km from the colony (Perrow et al., *British Birds*, 2019). This was a central point of our 2024 submission. The applicant has replied that the average feeding distance is 4.1 km (Response to Submissions Report, p. 5.7.28). But it was precisely the birds that travel further that its own 2025 surveys found in large numbers in the turbine area in July and August.
- **Tern foraging ranges overlap the array, and the leading tracking study says wind farms should be kept out of them.** A 2024 doctoral study at the University of Amsterdam tracked Sandwich terns, a close relative of the roseate tern, with GPS loggers over many breeding seasons.³³ It describes the Sandwich tern as having "a mean maximum foraging range of 25–30 km during the breeding season" (p. 114). The tracked birds foraged on average 27 km from the colony, and up to 61 km (p. 98). Its conclusions on wind farms are clear:
 - "Preventing the placement of wind farms in foraging areas of seabirds, or in areas with high fluxes of commuting and migrating birds is an important mitigation measure to avoid collisions with turbine blades" (p. 282);
 - "Careful site selection (for example, extrapolating from this thesis, by building wind farms well outside the foraging ranges of breeding Sandwich Terns) and mitigation measures are the way forward" (pp. 285–286);
 - overall, "Sandwich Terns are prone to negative effects of offshore wind farms", through collisions and through habitat loss caused by displacement and barrier effects (p. 285).

NISA does the opposite. Its nearest turbines are only about 5.7 km from Rockabill (see 2.1.1.1), and the whole array lies well inside the foraging range described in the thesis. The applicant's own baseline report confirms that Rockabill roseate terns forage in the turbine area (see Section 2.1.1.8).

- **Terns do avoid wind farms, and lose feeding areas as a result.** GPS tracking of Sandwich terns, a close relative of the roseate tern, found that they used offshore wind farm areas 41% to 54% less than expected. Avoidance was greater where turbines were more densely packed (van Bemmelen et al., *Ornithological Applications*, 2023)³⁴. The authors concluded

³² Everaert, J. and Stienen, E. (2007). Impact of wind turbines on birds in Zeebrugge (Belgium): https://www.komitee.de/media/impact_of_wind_turbines_on_birds_in_zeebrugge_-_everaert_en_.pdf

³³ Fijn, R.C. (2024). *Tracking Terns: Year-round movement ecology of Sandwich Terns in a changing marine environment*. PhD thesis, Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam (defended 10 October 2024). Page numbers are those printed in the thesis: <https://hdl.handle.net/11245.1/a69ffd0e-1573-4431-be1c-d5c17f130ed5>

³⁴ van Bemmelen et al. (2023), avoidance of offshore wind farms by Sandwich terns in the North Sea: <https://www.bto.org/our-work/science/publications/papers/avoidance-offshore-wind-farms-sandwich-terns-north-sea>

that terns lose feeding habitat, may use more energy flying around, and still face collision risk. The same tracking data show that terns also avoided the sea within about 1.5 km around the wind farms (Fijn, 2024, p. 283).

- **New wind farms changed where terns fed and how they travelled.** After two new wind farms were built off the English coast, the foraging and commuting areas used by breeding Sandwich terns changed. “Whilst birds entered OWFs when foraging, they appeared to avoid them when commuting”, funnelling them around the edges of the wind farms. An area behind an existing wind farm “was used substantially less than other suitable habitat at a similar range” (Fijn, 2024, pp. 226 and 343). For birds carrying one fish at a time to their chicks, “the additional energetic cost of flights being diverted around an OWF when provisioning chicks may be significant” (p. 248). Roseate terns also carry a single fish per trip.
- **Wind farm construction can affect the small fish terns feed on.** At Scroby Sands³⁵ in England, young herring declined after the wind farm was built, and the feeding success of the nearby little tern colony fell (Perrow et al., *Marine Pollution Bulletin*, 2011). We note that NISA now proposes foundations that do not require pile-driving, which reduces this risk during construction. Against that, the new foundations nearly double the area of seabed that will be permanently lost (see Section 3.2.2). And the 2024 thesis notes that research on the forage fish most seabirds depend on, sandeel and herring, “is particularly lagging behind”, which “hampers the possibility to fully understand the effect of offshore wind developments on seabirds via the food chain” (Fijn, 2024, p. 284).
- **The conservation plan for roseate terns names NISA.** The *After-LIFE Conservation Plan* of the EU-funded Roseate Tern LIFE project (LIFE14 NAT/UK/000394, July 2021) was prepared by the RSPB, BirdWatch Ireland and North Wales Wildlife Trust. Its actions are adapted from the *International (East Atlantic) Species Action Plan for the Roseate Tern 2021–2030*. It lists “Development of offshore windfarms” among the threats to the species. Under its action on impact assessment, it records for Rockabill: “North Irish Sea Array Offshore Wind Farm (NISA) planned and to be adjacent to Rockabill requiring resources for major casework urgently”. It calls for applicants to provide the information on forage fish and roseate tern feeding areas needed for a proper impact assessment. (This document was enclosed with our 2024 submission.)
- **Rockabill supports roseate terns in Britain too.** Ringing studies show that Rockabill produces surplus young that move to other colonies. The growth of the only established British colony, Coquet Island, has depended on birds from Rockabill (Seward et al., *Journal of Animal Ecology*, 2019). Harm to Rockabill would therefore affect the whole north-west European population.
- **Another Irish wind farm took a far more cautious approach.** For the same Rockabill roseate terns, the Codling wind farm assessment accepted that no flight-height data exist for the species. It assumed that 10% of flights could be at blade height, about 20 times the figure NISA uses (Codling Wind Park, Appendix 10-K).
- **Where the evidence supports the applicant.** A study of terns tracked over the sea in the United States found that their flights were generally below blade height (Loring et al.,

³⁵ Perrow, M. et al. (2011), effects of the construction of Scroby Sands offshore wind farm on the prey base of little tern: <https://tethys.pnnl.gov/publications/effects-construction-scroby-sands-offshore-wind-farm-prey-base-little-tern-sternula>

2019)³⁶. The same study found that the terns' exposure to offshore wind areas peaked in **late July to September**, after the young had fledged. That is exactly when NISA's 2025 surveys found the largest numbers of roseate terns in the turbine area. And at NISA the gap between the sea and the blade tips at high tide is only 34.4 m, and 29.4 m for eight turbines in Option 2 (see 2.1.1.7), well within the height range of courtship and foraging flights.

What we ask the Commission to do

8. Require the applicant to rerun its roseate tern collision model:
 - using the 2025 survey results as recorded, rather than averaging them with years in which almost none were recorded;
 - without removing 41% of the deaths as “non-breeding” birds;
 - assuming, as Codling did, that 10% of roseate tern flights may be at blade height.
9. Require the applicant to explain how terns that could not be identified were handled, and why none were counted as roseate terns.
10. Require a population model for the Rockabill roseate and common tern colonies, as Ms Heffernan recommends. The common tern upper estimate already exceeds the applicant's own 1% trigger.
11. Require a proper assessment of the barrier effect on terns travelling between Rockabill and their feeding grounds, using the Rockabill tracking data the applicant's own report says overlaps the turbine area. Test the result against Rockabill's conservation objectives on barriers and breeding success.
12. Require a corrected total of roseate tern deaths from all wind farms combined, including Codling's own estimate.
13. Require the applicant to reconcile its Rockabill common and Arctic tern counts and explain any decline since 2020.
14. Require the information on fish stocks and roseate tern feeding areas that the roseate tern conservation plan calls for applicants to provide.

2.2.2 Guillemots and razorbills

What the evidence shows

- **Guillemots avoid wind farms in the breeding season.** Guillemots tracked from Helgoland in Germany used wind farm areas 63% less than the surrounding sea, rising to 75% when the blades were turning (Peschko, Mercker & Garthe, *Marine Biology*, 2020)³⁷. Surveys around German wind farms found guillemot numbers 44% lower in the breeding season and 63% lower in spring, with effects out to about 9 km (Peschko et al., *Marine Environmental Research*, 2020).
- **Guillemots and razorbills lose habitat in and around wind farms.** A study by Wageningen Marine Research at the Gemini offshore wind farm, 55 km off the Dutch coast, found that

³⁶ Loring, P. et al. (2019), tracking offshore occurrence of common terns, endangered roseate terns and threatened piping plovers: <https://tethys.pnnl.gov/publications/tracking-offshore-occurrence-common-terns-endangered-roseate-terns-threatened-piping>

³⁷ Peschko, V., Mercker, M. and Garthe, S. (2020), telemetry reveals strong effects of offshore wind farms on behaviour and habitat use of common guillemots: <https://tethys.pnnl.gov/publications/telemetry-reveals-strong-effects-offshore-wind-farms-behaviour-habitat-use-common>

densities of guillemots and razorbills were “much lower in the wind parks than in the surrounding area”, and that guillemots were affected up to at least 10 km away.³⁸

- **Avoidance is strongest in late summer.** A study of 22 German wind farms, commissioned by the German offshore wind industry itself, found that guillemots and razorbills avoided wind farms most strongly in **July to September**, within several kilometres (BWO, 2024)³⁹. This is the very period the applicant has moved out of the breeding season.
- **These findings support the higher displacement rates the Commission asked for.** They support the rates recommended by NatureScot (60% displacement and 1–5% mortality), rather than the applicant’s own lower rates (50% displacement and 1% mortality). Ms Heffernan makes the same point.
- **Where the evidence supports the applicant.** Some researchers argue that a short detour around a wind farm is unlikely to harm an adult guillemot (Furness, 2022)⁴⁰. However, the evidence on how many birds actually die from losing feeding areas is limited. That is why cautious rates are used in assessments.

What we ask the Commission to do

15. Base its assessment of Lambay, Ireland’s Eye and the North-west Irish Sea SPA on the March to July breeding season the Commission itself requested.
16. Require the applicant to correct the “300,000 guillemots in July” statement, which relates to August, and to address its own acknowledgement that breeding continues into July.
17. Require the applicant to report and assess **how much smaller each colony is predicted to be after 35 years**, not only the change in yearly growth rate. Require it to explain how a predicted reduction of up to 38% at Lambay is compatible with the conservation objective of no significant decline.
18. Require the applicant to update the colony sizes used to share out impacts, since its own figures show the colonies have not changed in step.
19. Require the GPS tracking of Lambay guillemots and razorbills that BirdWatch Ireland recommended, including birds from the parts of the colony that fly north past Rockabill.

2.2.3 Kittiwakes

What the evidence shows

- **Kittiwakes avoid wind farms over large distances in the breeding season.** Within German wind farms and 3 km around them, kittiwake numbers were 45% lower in the breeding season. Numbers were significantly reduced up to about 20 km from the wind farms, and were 29% lower across that whole area (Peschko et al., 2020).

³⁸ Wageningen University & Research, “Study measures seabirds’ habitat loss as a result of wind turbines”, 17 January 2025, reporting a study in *Ecological Informatics* (doi: 10.1016/j.ecoinf.2024.102981): <https://www.wur.nl/en/news/study-measures-seabirds-habitat-loss-result-wind-turbines>

³⁹ BWO (Bundesverband Windenergie Offshore) (2024), auks and offshore wind farms: <https://bwo-offshorewind.de/en/alkenvogel-gegenuber-offshore-windparks/>

⁴⁰ Furness, R. (2022), BOU blog on auks and wind farms: <https://bou.org.uk/blog-furness-auks-wind-farms/>

- **Where the evidence is mixed.** Other studies have found little avoidance, or even attraction (for example in Scotland). Mixed evidence is a reason for caution where colonies are already declining and the objective is to restore them, not a reason to assume no effect.
- **Irish Sea kittiwakes stay in the Irish Sea all year.** Tracking shows that kittiwakes from Irish Sea colonies, including Rockabill and Dublin, tend to remain in the Irish Sea year-round, so any wind farm there is a potential threat throughout the year (BirdWatch Ireland submission, 2024, citing the SEATRACK programme).

What we ask the Commission to do

20. Require the applicant to explain how a kittiwake population 15–23% smaller after 35 years in the North-west Irish Sea SPA from NISA alone, and 10.3% smaller at Howth Head Coast in combination, can be consistent with “restore” objectives.
21. Require the applicant to resolve its contradictory statements about which kittiwake population figure is reliable.
22. Require collision deaths and deaths from loss of feeding areas to be combined in a single population model for each kittiwake colony.

2.2.4 Gannets

What the evidence shows

- Gannets from the Bass Rock in Scotland were about **8 times more at risk of collision** while feeding chicks than earlier in the season, because they made shorter trips and spent more time in wind farm areas. Females were about 3 times more at risk than males (Lane et al., *Marine Environmental Research*, 2020)⁴¹.
- Gannets tracked from Helgoland mostly avoided wind farms. Those that did go in flew close to blade height (Peschko et al., *Journal of Environmental Management*, 2021)⁴².
- This supports the Board’s view that the applicant should not reduce its gannet collision estimates by 70% simply because gannets tend to avoid wind farms, given how close NISA is to the coast and to nearby colonies.

What we ask the Commission to do

23. Base its gannet assessment on collision estimates without the 70% reduction, as the Board requested.

2.2.5 Shags, cormorants and Manx shearwaters

What we ask the Commission to do

24. Require shags and cormorants to be assessed for the Lambay, Ireland’s Eye, Skerries Islands

⁴¹ Lane, J. et al. (2020), vulnerability of northern gannets to offshore wind farms: <https://tethys.pnnl.gov/publications/vulnerability-northern-gannets-offshore-wind-farms-seasonal-sex-specific-collision>

⁴² Peschko, V. et al. (2021), northern gannets are strongly affected by operating offshore wind farms: <https://tethys.pnnl.gov/publications/northern-gannets-morus-bassanus-are-strongly-affected-operating-offshore-wind-farms>

and North-west Irish Sea SPAs, given their “restore” objectives and steep declines. The assessment should include disturbance from construction and maintenance vessels.

25. Require the tracking of Lambay Manx shearwaters that BirdWatch Ireland recommended, before any decision is made.

2.2.6 Divers and migrating birds

What the evidence shows

- Red-throated divers declined by 94% within 1 km of North Sea wind farms and by 52% within 10 km. The total in the study area fell by almost a third (Garthe et al., *Scientific Reports*, 2023). This shows a real loss of birds from the area, not just a move elsewhere. We cited this study in our 2024 submission.
- Red-throated divers and common scoters are among the seabirds most easily disturbed by ships (Fliessbach et al., *Frontiers in Marine Science*, 2019)⁴³. This matters for cable-laying and maintenance vessels.

What we ask the Commission to do

26. Require migrating-bird information for spring and winter as well as autumn. Require the applicant to justify why it has not used radar or a similar method, as the Board asked.

2.2.7 The overall picture

The ORIES⁴⁴ evidence tool, led by Plymouth Marine Laboratory, has summarised the findings of 80 studies of seabirds and offshore wind. It reports that **72% of the outcomes show negative impacts** on seabirds. It names kittiwake, gannet, puffin, razorbill, guillemot and terns as priority species of concern, and states that “bird populations that nest close to OWF are most susceptible to collision risk”.⁴⁵ These are the species, and the situation, that NISA presents.

2.2.8 The French State’s scientific assessment (Ifremer and CNRS, June 2026)

In June 2026, France’s national marine research institute (Ifremer) and its national scientific research centre (CNRS) published a collective scientific assessment of the effects of offshore wind farms on biodiversity. It was commissioned by the French ministries responsible for energy, the ecological transition and the sea, and is based on a systematic review of the international scientific literature by a panel of 25 experts.⁴⁶ Its findings support the concerns set out above:

⁴³ Fliessbach, K. et al. (2019), *Frontiers in Marine Science* 6:192: <https://public-pages-files-2025.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2019.00192/text>

⁴⁴ ORIES, policy highlight on seabirds: <https://pml.ac.uk/wp-content/uploads/2026/01/ORIES-policy-highlight-Seabirds.pdf>

⁴⁵ Plymouth Marine Laboratory, ORIES policy highlight: Seabirds (2026): <https://pml.ac.uk/wp-content/uploads/2026/01/ORIES-policy-highlight-Seabirds.pdf>

⁴⁶ Ifremer and CNRS (2026). *Éoliennes en mer & biodiversité – Effets des parcs éoliens en mer et de leurs raccordements sur la biodiversité. Synthèse de l’expertise scientifique collective (ESCo)* [Offshore wind turbines and biodiversity: effects of offshore wind farms and their grid connections on biodiversity. Summary of the collective scientific assessment], 158 pp. https://www.cnrs.fr/sites/default/files/2026-06/Synthese_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf; Summary: Ifremer and CNRS (2026). *Éoliennes en mer & biodiversité. Résumé de l’expertise scientifique collective (ESCo)* [Short summary], 12 pp. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf The quotations in this submission are SWEG’s translations from the French originals.

- **The effect of wind farms on birds' movements is one of the best established.** Where enough studies exist to draw conclusions, turbines acting as obstacles to birds' movement were found to have an effect in 81% of cases (105 studies).⁴⁷
- **Divers, auks and gannets avoid wind farms.** "Divers, auks and the northern gannet tend to avoid the wind farms."⁴⁸ Red-throated and great northern divers, guillemots, razorbills and puffins are all qualifying species of the North-west Irish Sea SPA.
- **Collision risk is mainly estimated by computer models.** The risk of collision with the blades is "mainly assessed by modelling". The species most exposed are those that regularly fly at rotor height, particularly at night, or that frequently enter wind farms to feed.⁴⁹ The applicant's conclusions on terns and kittiwakes rest on such models (Sections 2.1.1 to 2.1.3).
- **A lack of evidence is not evidence of no effect.** "The absence of proof of an effect cannot therefore be interpreted as proof of the absence of an effect." Some effects may go undetected "not because they do not exist, but because the available data is insufficient".⁵⁰ This answers the applicant's reliance on the absence of studies of roseate terns (Section 2.1.1.7).
- **Distance from the coast matters.** The assessment reports that the closer turbines are to the coast, the more likely they are to fall within the range of coastal species during the breeding season.⁵¹ The tracking study of terns described in Section 2.2.1 points the same way: tern numbers at sea fall sharply with distance from the colony, with high densities in coastal areas near colonies and low densities further offshore (Fijn, 2024, pp. 142 and 340). A site further offshore would therefore expose fewer breeding terns.
- **Avoidance comes first.** "Avoidance measures consist of removing potential effects at source, from the planning and site-selection stages, or even of abandoning certain projects where the environmental stakes are judged too great. They rely in particular on avoiding the main migration or breeding areas of certain species of birds and marine mammals, as well as protected habitats and species."⁵² NISA lies inside an SPA, beside Europe's most important roseate tern colony.
- **Most mitigation measures are untested.** The measures described in the literature "have, for a large part, not yet been tested in real conditions".⁵³

The assessment also concludes that, if offshore wind is deployed at large scale and over the long term, "lasting transformations of marine biodiversity are likely", and that cumulative effects cannot yet be assessed robustly (see Section 4.1).

⁴⁷ Ifremer and CNRS (2026), Synthèse ESCo, p. 33. https://www.cnrs.fr/sites/default/files/2026-06/Synthese_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁴⁸ Ifremer and CNRS (2026), Résumé ESCo, p. 4. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁴⁹ Ifremer and CNRS (2026), Résumé ESCo, p. 4. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁵⁰ Ifremer and CNRS (2026), Synthèse ESCo, p. 21. https://www.cnrs.fr/sites/default/files/2026-06/Synthese_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁵¹ Ifremer and CNRS (2026), Synthèse ESCo, Part 3, chapter 1, p. 42. https://www.cnrs.fr/sites/default/files/2026-06/Synthese_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁵² Ifremer and CNRS (2026), Résumé ESCo, p. 9. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁵³ Ifremer and CNRS (2026), Résumé ESCo, p. 2. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

What we ask the Commission to do

27. Not accept the applicant's conclusion of no adverse effect on the integrity of the Rockabill, Lambay Island, Ireland's Eye, Howth Head Coast and North-west Irish Sea SPAs, unless and until the points above have been addressed with evidence, and the results have been tested against each site's conservation objectives.

Sources for Section 2

Applicant's documents (2026 further information)

- RFI Response Report.
- Addendum to the NIS:
 - pp. 260, 267, 308, 393–397 and 722;
 - Tables A5.16, A5.17, A5.30, A5.48, A5.49 and A6.32–A6.36.
- Addendum to EIAR Chapter 15: p. 15.112 and Table A15.91.
- Appendix A15.1: pp. 68–69 and 140–146; Tables A3-19 to A3-21 and A3-30.
- Appendix A15.3: section 1.2, para. 2.2.26 and Table A2-1.
- Appendix A15.7: summary section.
- Appendix A15.8: section 2.5 and Tables A2-1, A2-2 and A2-4.
- Appendix A5.1: Design Refinements.
- Addendum to EIAR Chapter 6, section 6.5.4 and Table A6.6 (scour protection); NIS Addendum, sections 5.4.1.1.3 (sandeel) and 6.4.7.1 (red-throated diver).
- BSH (2022). *Chemical emissions from offshore wind farms – summary of the project OffChEm.*
- Ebeling, A. et al. (2025). Coupling metal concentrations and drift simulations for tracing emissions from offshore wind farms. *Marine Pollution Bulletin* 214, 117810.
- Caboni, M. et al. (2025). Estimating microplastic emissions from offshore wind turbine blades in the Dutch North Sea. *Wind Energy Science* 10, 1123–1136.
- NPWS, Conservation Objectives: Rockabill SPA 004014, Version 1, 8 May 2013.
- Response to Submissions Report, section 5.7 (pp. 5.7.2, 5.7.10, 5.7.13, 5.7.27 and 5.7.28).

Other documents

- M.L. Heffernan, letter on behalf of SWEG of 29 September 2026 (see the Appendix).
- SWEG submission, August 2024.
- BirdWatch Ireland submission, August 2024.
- Codling Wind Park, Appendix 10-K.

NPWS conservation objectives

- Rockabill SPA
- North-west Irish Sea SPA⁵⁴

⁵⁴ https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004236.pdf

- Lambay Island SPA⁵⁵
- Howth Head Coast SPA⁵⁶
- Ireland's Eye SPA⁵⁷

Published studies

- Everaert & Stienen 2007
- Perrow et al. 2019
- Fijn 2024, PhD thesis, University of Amsterdam⁵⁸
- van Bemmelen et al. 2023
- Perrow et al. 2011
- Loring et al. 2019
- Peschko, Mercker & Garthe 2020
- Peschko et al. 2020
- BWO 2024
- Furness 2022
- Lane et al. 2020
- Peschko et al. 2021
- Garthe et al. 2023
- Fliessbach et al. 2019
- Skov et al. 2025 (Aberdeen)⁵⁹
- Liedtke et al. 2025 (VolZug)
- ORIES evidence review
- BirdWatch Ireland via Rare Bird Alert, July 2023⁶⁰

⁵⁵ https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004069.pdf

⁵⁶ https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004113.pdf

⁵⁷ https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004117.pdf

⁵⁸ <https://hdl.handle.net/11245.1/a69ffd0e-1573-4431-be1c-d5c17f130ed5>

⁵⁹ <https://tethys.pnnl.gov/publications/high-resolution-multi-sensor-technology-reveals-low-collision-risk-seabirds-offshore>

⁶⁰ https://www.rarebirdalert.co.uk/v2/Content/Bird_Flu_Devastates_Key_Irish_Seabird_Colonies.aspx

3 THE SEABED, FISH, SHELLFISH AND MARINE MAMMALS

HOW WE HAVE APPROACHED THE MARINE EVIDENCE

The applicant has dropped pile-driving. SWEG welcomes this: it removes the loudest source of underwater noise, and with it most of the risk to herring spawning grounds and to marine mammals during construction.

The further information still leaves four problems:

- the seabed in the array is largely a habitat that OSPAR lists as threatened or declining, and the new foundations nearly double the area that will be permanently lost;
- the applicant gives at least three different figures for that loss;
- the area is part of one of Ireland's most productive Nephrops (Dublin Bay prawn) grounds;
- explosive clearance of unexploded ordnance is still expected to cause permanent hearing injury to harbour porpoises, and the applicant has refused several of the protections the Commission asked for.

As in the bird section (Section 2), we first set out the errors, omissions and inconsistencies in the applicant's information (Section 3.1), and then what the evidence shows on each topic and what we ask the Commission to do (Section 3.2). Effects on the birds' food supply are covered in Section 2.1.7, and cumulative effects on marine mammals in Section 4.5. They are not repeated here.

3.1 ERRORS, OMISSIONS AND INCONSISTENCIES IN THE APPLICANT'S INFORMATION ON THE SEABED, FISH, SHELLFISH AND MARINE MAMMALS

3.1.1 The applicant gives at least three different figures for the permanent loss of seabed. For the same loss, the further information gives:

Source	Option 1	Option 2
Chapter 12 and 13 Addenda, tables of design scenarios	526,898 m ²	401,297 m ²
Ch 12 Addendum, section 12.5.3.1 (text)	0.58 km ² , 0.46%	0.35 km ² , 0.35%
Ch 13 Addendum, section 13.5.3.3 (text)	0.53 km ² , 0.42%	0.40 km ² , 0.32%
Ch 13 Addendum, Table A13.13 (Nephrops)	"up to approximately 0.64 km ² "	–
Ch 6 Addendum, Table A6.6 (turbine rock armour only)	369,605 m ²	142,503 m ² (see Section 2.1.7.2)

The tables in Chapters 12 and 13 use 264,004 m² for Option 2's turbine rock armour. That confirms the 142,503 m² in Chapter 6 is wrong. The Commission cannot weigh a loss when the applicant's own documents disagree on its size by up to 20%.

3.1.2 Two contradictory answers on the protected seabed habitat. The Commission said the magnitude of impact on the OSPAR "sea-pen and burrowing megafauna" habitat "may be 'low' or 'medium' rather than 'negligible'" (RFI Items 9(b) and 9(d)). To Item 9(b), the applicant repeats that the magnitude is "negligible" and says "No change to the assessment is required". To Item 9(d), it

says the magnitude “has been reassessed and set as low” (Ch 12 Addendum, RFI response table). Both cannot be its answer (see Section 3.2.2).

3.1.3 The habitat-loss thresholds the Commission asked for are said to be in Chapter 12, but we cannot find them there. The Commission asked for habitat loss and habitat adversely affected to be assessed against the EU thresholds of 2% (D6C4) and 25% (D6C5) for the Celtic Seas North Inner reporting area (RFI Item 3(b)). The RFI Response Report says this has been done “with respect to the 2% threshold in Chapter 12” (p. 6). We could find no reference to D6C4, D6C5 or either threshold in the Chapter 12 Addendum. The RFI Response Report’s own summary gives no percentage figures, only the conclusion that “the minor loss of these habitats will not alter the current status of GES”. Even the location of the MSFD Assessment it relies on is given as Volume 2 in the text and Volume 8 in the reference column (p. 5).

3.1.4 Sandeel habitat on the cable route disappears between two surveys, but not in the NIS. In 2023 the applicant’s surveys classed most of the cable route as “Suitable” or “Sub-Prime” for sandeel. In 2025 every station on the route was classed “Unsuitable”, which the applicant puts down to “relatively high seabed mobility” (Ch 13 Addendum, section 13.3.6.1). Its own NIS Addendum still describes “suitable sandeel habitats along most of the ECC” (see Section 2.1.7.3).

3.1.5 The bottlenose dolphin population is enlarged 28-fold, which makes the effects look small. The official estimate for the Irish Sea bottlenose dolphin management unit is **293 dolphins** (IAMMWG, 2023), as the applicant itself states (Ch 14 Addendum, section 14.3.2.2). The applicant then uses a density map that, it accepts, is “incompatible” with that estimate, and on that basis rescales the population to **8,225 dolphins**. Table A14.4 nonetheless gives the source of the 8,225 figure as “IAMMWG (2023)”. Every effect on bottlenose dolphins is then expressed as a share of 8,225. For example, the 52 dolphins predicted to be disturbed by each high-order UXO detonation are presented as **0.63%** of the population (Table A14.15). Against the official population of 293 they would be about **18%**. If the density map overstates the number of dolphins, the predicted numbers affected are overstated too; but the applicant cannot use the higher numbers for one purpose and the larger population to make the percentages small, without explaining which is right.

3.1.6 The common dolphin figures are copied from the bottlenose dolphin figures. The baseline gives the SCANS IV densities for common dolphin as 0.1669 per km² for the cable corridor (0.1577–0.1787) and 0.1587 per km² for the array (0.1444–0.1712) (Ch 14 Addendum, section 14.3.2.3). These are exactly the figures, to four decimal places and including the ranges, given for bottlenose dolphin in the previous section (section 14.3.2.2). Two different species are highly unlikely to have identical densities and ranges at both locations. The quantitative assessment uses the site-specific common dolphin density instead, but the error shows that the baseline has not been checked.

3.1.7 The effect of UXO clearance is rated low on the assumption that there will be few detonations, while the applicant says it does not know how many there will be. Each high-order detonation is predicted to disturb up to 165 grey seals, 66 harbour porpoises and 52 bottlenose dolphins (Ch 14 Addendum, Table A14.15). The applicant calls this “non-negligible”, but rates the overall magnitude low because detonations will be few. Yet it also states that the number of items to be cleared is unknown (section 14.5.2.3) (see Section 3.2.6).

3.1.8 Information the Commission asked for, or that is needed, is missing. The further information still does not contain:

- any underwater acoustic survey of harbour porpoise, which the Commission asked the applicant to justify not doing (RFI Item 10(d); Section 3.2.6);
- maps of masking effects on marine mammals, or of the critical breeding and spawning periods (RFI Item 10(s)); the applicant confirms its reply “does not include mapping or modelling” (Sections 3.2.4 and 3.2.6);
- the Irish Whale and Dolphin Group stranding records (RFI Item 10(m); Section 3.2.6);
- any count of Nephrops burrow density in the array, although burrows were found at every station sampled (Section 3.2.3);
- ground-truthing of the rocky seabed at the landfall for Annex I reef (Ch 12 Addendum, section 12.3.4; Section 3.2.5);
- a revised assessment of ecosystem services: the applicant “has not revised assessments in the respective Chapters of the EIAR” (RFI Item 4; Section 3.2.7);
- the volume of seawater to be pumped for the foundation grout, the time of year, and the final grout composition (Section 3.2.1);
- in the cumulative assessment of seabed loss, any project other than Oriel at the first tier (Section 3.2.3).

3.2 WHAT THE EVIDENCE SHOWS, AND WHAT WE ASK THE COMMISSION TO DO

3.2.1 The new foundations solve one problem but create others

The switch to suction-bucket jackets removes pile-driving noise. The further information shows it also has environmental drawbacks that are not weighed against that benefit:

- **A bigger footprint.** Each turbine stands on four buckets of up to 15 m diameter. Because the buckets are shallow, they need more rock armour against scour: 98 m across at every turbine (Ch 6 Addendum, sections 6.5.2 and 6.5.4). The permanent seabed loss nearly doubles as a result (see Section 3.2.2).
- **Failed installations are expected.** The applicant allows for **20% of turbine locations (more than ten) to fail to reach the target depth** on the first attempt. In that case the foundation would be pulled out and tried again up to 100 m away. It also allows for foundations to be “wet stored” on the seabed before final placement (Ch 13 Addendum, Table A13.7; Ch 6 Addendum, section 6.3.2). Each attempt disturbs fresh seabed.
- **About 173,000 m³ of cement grout.** Option 1 needs 173,180 m³ of “under-lid” grout for the turbine foundations alone, about 3,500 m³ per turbine (Ch 6 Addendum, Table A6.5). It is based on ordinary Portland cement, its “final grout composition [is] to be confirmed during detailed design”, and it stays in the buckets, which the applicant intends to leave in the seabed (Ch 12 Addendum, section 12.5.2.4; Section 7.4).
- **Pumping seawater for the grout.** Grout is mixed with seawater pumped from the array. The applicant accepts that this pumping “has the potential to cause physical injuries to ... pelagic fish and shellfish eggs and larvae” (Ch 13 Addendum, section 13.4.2). This is a new effect of the design change. Neither the volume of water to be pumped nor the time of year is stated.

- **Design methods are still uncertain.** Recent field studies of large suction-bucket installations (Seagreen⁶¹, Scotland; a soft-clay site in the East China Sea)⁶² found that the standard design method can be significantly wrong about how buckets will penetrate. Insufficient penetration “can lead to a loss of seal”, and uneven penetration can overstress the jacket. The applicant’s array is soft muddy seabed.
- **They made the new layout possible.** The applicant says suction buckets give “greater flexibility in siting WTGs” (Appendix A5.1). That flexibility was used to move turbines to the western edge of the array, nearer Rockabill (see Section 2.1.1.1).
- **They can be removed, but the applicant will not commit to it.** A suction-bucket foundation can be taken out by reversing the suction. This was done with a suction-bucket foundation (supporting a measuring mast) at Horns Rev 2⁶³ in Denmark in 2015, leaving no visible mark on the seabed. The applicant nonetheless proposes to cut its buckets off below the seabed and leave them, with the grout and the rock armour, in place (see Section 7.4).

SWEG does not oppose quieter foundations. But their environmental effects should be weighed as a whole, not only the noise benefit.

What we ask the Commission to do

1. Weigh all the environmental effects of the suction-bucket foundations, not only the reduction in noise.
2. Require the advantages of the new foundations to be used: full removal at decommissioning (Section 7.6), and siting that moves turbines away from Rockabill, not towards it.
3. Require the applicant to state the volume and timing of seawater pumping for grout, and the final grout composition, before any decision.

3.2.2 The seabed in the array is a threatened habitat, and more of it will be lost

What is there. The applicant’s surveys found the biotope “Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud” at ten of the eleven sites sampled in the array (Ch 12 Addendum, section 12.3.2.4). This biotope forms part of the OSPAR threatened and/or declining habitat “Sea-pen and burrowing megafauna communities”. The applicant rates its sensitivity as “high”, “based on no resistance and very low resilience” (Ch 12 Addendum, Table A12.13).

What the Commission asked. The Commission agreed that the sensitivity is high. It said that, given how extensive the habitat is across the array, the magnitude of impact “may be ‘low’ or ‘medium’ rather than ‘negligible’”, and noted that high sensitivity with medium magnitude gives a “Significant” effect (RFI Items 9(b) and 9(d)).

How the applicant replied. The applicant’s two replies contradict each other (Section 3.1.2). The revised assessment uses “low”. The effect becomes “moderate”, which the applicant says is “not

⁶¹ Back-analysis and insights on suction caisson self-weight penetration from Seagreen 1 offshore wind farm, ISFOG 2025 (ISSMGE): <https://www.issmge.org/publications/publication/back-analysis-and-insights-on-suction-caisson-self-weight-penetration-from-seagreen-1-offshore-wind-farm>

⁶² Field observations from large scale Suction Bucket Jacket installation for an Offshore Wind Farm in East China Sea (ISSMGE): <https://www.issmge.org/publications/publication/field-observations-from-large-scale-suction-bucket-jacket-installation-for-an-offshore-wind-farm-in-east-china-sea>

⁶³ Ziton, Mono Bucket foundation successfully decommissioned: <https://ziton.eu/mono-bucket-foundation-successfully-decommissioned/>; Recharge, 13 July 2015: <https://www.rechargenews.com/wind/mono-bucket-foundation-decommissioned-at-horns-rev-2/1-1-869411>

significant in EIA terms” (Ch 12 Addendum, section 12.5.3.1). No new evidence is given for choosing low rather than medium. The only reason given is that the habitats are “common and widespread throughout the wider region”. That argument could be used to justify losing this habitat anywhere. It does not answer the Commission’s point that this protected habitat covers most of the array itself.

The loss is now much larger. In 2024 the permanent loss was 276,296 m² for Option 1. With the new suction-bucket foundations and their rock armour, it is now **526,898 m²** (Chapter 12 and 13 Addenda, Table A12.8/A13.7), an increase of about 90%. Almost all of it will be left on the seabed for good: the foundations will be cut off below the seabed and the rock armour “left in situ” (see Section 7.4). The applicant’s own documents give several different figures for this loss (Section 3.1.1).

Temporary damage. Construction will disturb about 6.5 km² of seabed (Option 1), about 5.0 km² of it in the array (Ch 12 Addendum, section 12.5.2.3).

What we ask the Commission to do

4. Require the applicant to give a single, correct figure for permanent seabed loss for each option, and to correct the Option 2 figure in Chapter 6.
5. Treat the permanent loss of the OSPAR “sea-pen and burrowing megafauna” habitat as a significant effect, as the Commission’s own analysis indicated, unless the applicant provides real evidence otherwise.
6. Require the applicant to show, with figures, how the habitat loss compares with the EU thresholds the Commission asked about (Section 3.1.3).

3.2.3 Dublin Bay prawn (Nephrops) grounds

- The applicant’s 2025 survey found “evidence of Nephrops burrowing at all sampled sites across the array area” (Ch 13 Addendum, Table A13.9).
- The array lies within the Western Irish Sea Mud Belt, which supports “one of the most productive Nephrops fisheries in Irish waters”. Fishing effort is concentrated in the ICES rectangle that “overlaps the array area” (Ch 13 Addendum, section 13.3.4).
- The applicant accepts that Nephrops have “low adaptability and very low tolerance” to permanent habitat loss and that egg-carrying females are “largely sedentary” in their burrows over winter. It rates their sensitivity as medium (Ch 13 Addendum, Table A13.12).
- It then rates the magnitude as low, because the loss is about 0.01% of the whole Mud Belt (Ch 13 Addendum, Table A13.13).

As with the seabed habitat, the conclusion rests on comparing a local loss with a very large area. The applicant has not counted burrow densities in the array, so it cannot say how many animals live on the ground that will be covered.

The cumulative assessment of permanent seabed loss includes only Oriel at the first tier (combined loss about 0.83 km²; Ch 13 Addendum, section 13.9.7.1), although Oriel also lies on the Mud Belt.

What we ask the Commission to do

7. Require a survey of Nephrops burrow density in the array before any decision, and long-

term monitoring of the Nephrops ground if consent is granted.

3.2.4 Spawning and nursery grounds

Herring.

- The applicant now accepts that herring nursery grounds lie inshore, “overlapping the array area, ECC [export cable corridor] and the northern sections of the ZoI” (Ch 13 Addendum, section 13.3.6.2).
- The nearest active spawning grounds (Dundalk Bay and Mourne) are about 20 km north. With piling removed, the main risk to them, piling noise reaching up to 69 km, has largely gone. We welcome this.

Sandeel. If the seabed of the cable route changes as much from year to year as the applicant now says (Section 3.1.4), one year’s samples cannot be used to rule out sandeel habitat. A precautionary approach should treat the cable route as sandeel habitat.

Cod, plaice, sole, whiting and haddock.

- The applicant confirms that cod, plaice, lemon sole, common sole, whiting and haddock “all have spawning grounds within the fish and shellfish study area” (Ch 13 Addendum, Table A13.9).
- The Commission asked for “critical periods of breeding and spawning” to be identified (RFI Item 10(s)). The applicant’s reply confirms that this “does not include mapping or modelling”.
- No seasonal restriction is proposed for any construction activity, including explosive clearance of unexploded ordnance, to protect spawning.

What we ask the Commission to do

8. Require the cable route to be treated as sandeel habitat unless several years of survey show otherwise.
9. As a condition of any consent, prohibit UXO clearance and loud geophysical survey during key fish spawning periods.

3.2.5 Rocky seabed at the landfall

The applicant’s 2023 survey “indicated the presence of rocky habitat in the shallow subtidal area” of the cable corridor at Bremeore. The applicant states that “this habitat has not been ground truthed for assessment for potential Annex 1 reef habitat” (Ch 12 Addendum, section 12.3.4).

The Marine Institute advised that rock and biogenic reef should be avoided (RFI Item 9(c)). The applicant relies on the “indicative” location of the drilling exit pits to say they will not affect it. The cable route offshore of the exit pits still has to pass through or near this area.

What we ask the Commission to do

10. Require the rocky habitat at the landfall to be ground-truthed for Annex I reef before any

3.2.6 Marine mammals

The waters around Rockabill and Lambay are among the most important in the Irish Sea for harbour porpoise, grey seal and harbour seal. The Rockabill to Dalkey Island SAC is designated for harbour porpoise and lies right beside the cable corridor. Seals are active around Rockabill, between the Rock and the Bill, and large numbers haul out on St Patrick's Island, Rockabill and Cardy Rocks (Figure 5).



Figure 5. Left: common seal at Rockabill (photo: Shane Holland, 2025). Right: seals basking off Skerries (photo courtesy of Mark Ryan Photography)

Still no acoustic survey. The Commission asked the applicant to justify “the lack of empirical acoustic data” (RFI Item 10(d)). The applicant has still not carried out any underwater acoustic monitoring. It relies instead on aerial surveys and existing datasets, describing these as “industry standard” (Ch 14 Addendum, RFI response table). Dropping pile-driving reduces the need for this data, but does not remove it:

- loud work remains, including UXO clearance (below);
- the site lies beside a porpoise SAC;
- porpoises are small, surface briefly and are best detected acoustically, including at night and in winter, when aerial surveys see least.

Unexploded ordnance (UXO) clearance. This is now the loudest activity in the project:

- The number of items to be cleared is unknown (Ch 14 Addendum, section 14.5.2.3).
- The one area rated “medium risk” for UXO is “within the ECC near the coast in the southwest” (section 14.5.2.3), the part of the project closest to the porpoise SAC and the coast.
- High-order detonation of up to 525 kg remains possible “as a last resort”. Even with a bubble curtain, the applicant predicts permanent hearing injury (PTS) to porpoises out to 4.6 km. It predicts **3 harbour porpoises (range 2–6) permanently injured per detonation** (Ch 14 Addendum, Tables A14.12 and A14.13).
- Each high-order detonation is predicted to disturb up to **165 grey seals (2.72% of the management unit), 66 harbour porpoises and 52 bottlenose dolphins** (Ch 14 Addendum, Table A14.15). The applicant rates the overall magnitude low on the assumption that detonations will be few (Section 3.1.7), and presents the dolphins against an enlarged population (Section 3.1.5).

- Harbour porpoise and all other cetaceans are strictly protected under Annex IV of the Habitats Directive. Predicting permanent injury to a strictly protected species should be resolved before consent, not left to a post-consent protocol.

Temporary hearing damage (TTS). The Commission asked for the mitigation protocol to cover TTS, “as this may constitute injury under Irish legislation and guidance” (RFI Item 10(o)). The applicant refused. It relies on a position statement by its UK consultants (Appendix A14.4). That statement itself records that:

- Irish guidance states that “TTS may constitute an injury”;
- in Germany TTS “is classified as injury and mitigation must apply”;
- the cellular damage behind TTS “may not be fully reversible”.

The Commission should apply the Irish guidance, not a UK consultant’s interpretation of it.

No seasonal timing. The Commission asked the applicant to consider avoiding the seal pupping and porpoise calving seasons (RFI Item 10(q)). The applicant replied that, since piling has been dropped, “temporal mitigation does not need to be considered”. UXO clearance and geophysical surveys still produce intense noise. They can be timed to avoid the pupping and calving seasons.

Mitigation in the dark. The protocol relies on marine mammal observers watching visually. Passive acoustic monitoring is used only as a supplement, and the applicant accepts that it “cannot replace an MMO during periods of low visibility conditions or at night” (Ch 14 Addendum, RFI response 10(p)). The protocol should say plainly whether high-noise work can start at night or in poor visibility.

Masking. The Commission asked for masking effects to be mapped (RFI Item 10(s)). The applicant declined because there are “no industry standard ... masking thresholds”. Having no agreed threshold does not mean there is no effect.

Dead cetaceans on our coast. SWEG members photographed and recorded seven dead cetaceans, mostly harbour porpoises and, we believe, some dolphins, on the Fingal and Meath coast in 2025 and early 2026 (Figure 6). Locally we would normally expect to see one or two in a year. Some of these strandings were reported by SWEG members and others by members of the public. Survey vessels were operating offshore at the time, including a survey vessel in the Irish Sea off the Fingal coast in summer 2025. We do not claim that the surveys caused these deaths: no post-mortems were carried out. But the strandings show that the local porpoise and dolphin populations are already under pressure. They also show why the stranding records the applicant did not obtain from the Irish Whale and Dolphin Group matter (RFI Item 10(m)).

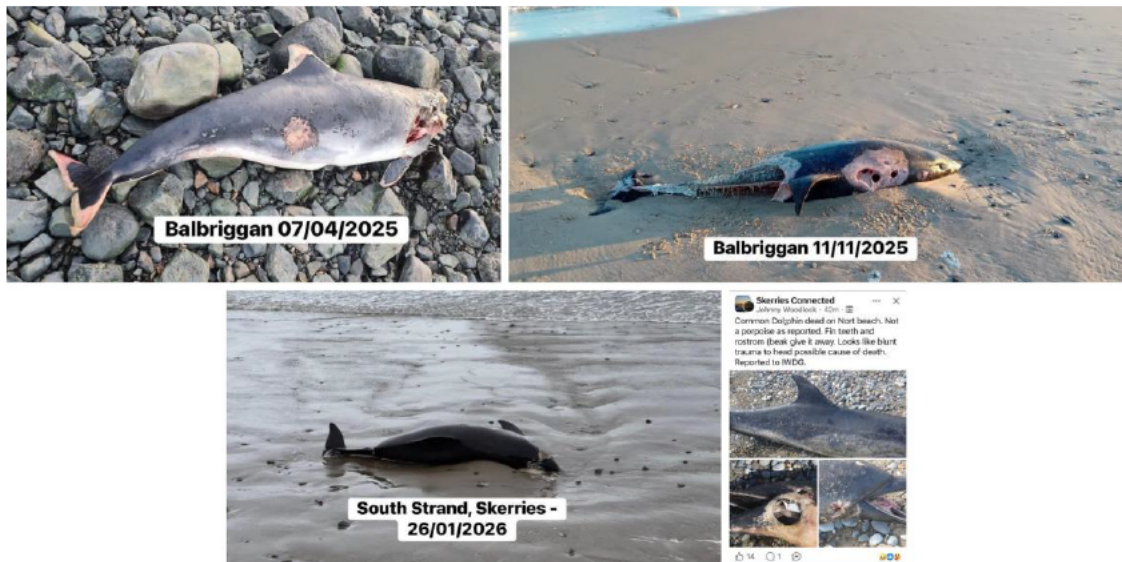


Figure 6. Dead cetaceans found on the Fingal coast: Balbriggan, 7 April 2025; Balbriggan, 11 November 2025; South Strand, Skerries, 26 January 2026; and a common dolphin on the North Beach, Skerries, reported to the Irish Whale and Dolphin Group (SWEG members and members of the public)

Seals at the landfall. The new surveys at Bremore found small numbers of seals: a peak of six harbour seals and, at Cardy Rocks, nine grey seals. No pupping was found (Ch 14 Addendum, section 14.3). These surveys covered the landfall only. Local observations show many more seals along this coast: seals haul out in large numbers on St Patrick's Island, where they also breed, and on Rockabill and Cardy Rocks (Figure 7). A dead seal was washed up on the South Beach in Skerries in 2026.



Figure 7. Seals hauled out and breeding on St Patrick's Island, Skerries (photo: Shane Holland)

What we ask the Commission to do

11. Require underwater acoustic monitoring of porpoise in and around the site, as the Commission requested.
12. Require the bottlenose dolphin assessment to be redone against the official management unit population of 293, or the applicant to justify the 8,225 figure, and the common dolphin baseline to be corrected.
13. As conditions of any consent:
 - (a) no high-order UXO detonation without a bubble curtain;

- (b) the mitigation protocol to cover TTS in line with Irish guidance;
- (c) no UXO clearance or loud geophysical survey during the seal pupping and porpoise calving seasons;
- (d) no high-noise work started at night or in poor visibility;
- (e) stranding monitoring, with post-mortem examination, before, during and after construction.

3.2.7 Ecosystem services

The Commission asked for an assessment of effects on ecosystem functions and services (RFI Item 4). The applicant states that it “has not revised assessments in the respective Chapters of the EIAR”. It provides only a synopsis report (Appendix A3.3), which concludes there is no material impact. This does not meet the Commission’s request.

What we ask the Commission to do

14. Require the full assessment of ecosystem services that the Commission asked for.

3.2.8 Overall: are the effects significant?

In SWEG’s view:

- **The seabed.** The permanent loss of more than half a square kilometre of a habitat on the OSPAR threatened list, across most of the array, should be treated as **significant**, as the Commission itself indicated. The applicant has not given evidence for any lower rating. Because the area figures are inconsistent, the true size of the loss is not known.
- **Nephrops and other shellfish.** The effect may be locally significant for the Nephrops ground and the fishery. It cannot be assessed properly without burrow-density data.
- **Fish spawning.** Removing piling has substantially reduced the risk. The main remaining uncertainty is sandeel habitat along the cable route. This matters mainly because sandeel and young herring are food for the Rockabill terns and the auks of the North-west Irish Sea SPA (Section 2.1.7).
- **Marine mammals.** Predicted permanent injury to porpoises from UXO clearance beside a porpoise SAC, together with the refusal of the TTS, seasonal-timing and acoustic-survey requests and the errors in the dolphin figures, means the Commission cannot yet be sure the effects are not significant.

Sources for Section 3

- **Commission’s further information request** (10 April 2025): Items 3(b), 4, 9(a)–(g), 10(d), 10(m), 10(o)–(q), 10(s) and 11(a)–(e).
- **RFI Response Report** (2026), pp. 5–6 (Item 3).
- **Addendum to EIAR Chapter 12** (Benthic Subtidal and Intertidal Ecology, 2026): RFI response table; sections 12.2.3, 12.3.2.4, 12.3.4, 12.3.5, 12.5.2.3, 12.5.2.4 and 12.5.3.1; Tables A12.5, A12.8 and A12.13.

- **Addendum to EIAR Chapter 13** (Fish and Shellfish Ecology, 2026): RFI response table; sections 13.3.4, 13.4.2, 13.3.6.1, 13.3.6.2, 13.5.3.3 and 13.9.7.1; Tables A13.7, A13.9, A13.12 and A13.13; Figure A13.5.
- **Addendum to EIAR Chapter 14** (Marine Mammal Ecology, 2026): RFI response table; sections 14.3, 14.3.2.2, 14.3.2.3 and 14.5.2.3; Tables A14.4, A14.12, A14.13 and A14.15.
- **Appendix A14.4**, TTS Position Statement (SMRU Consulting).
- **Addendum to EIAR Chapter 6**: sections 6.3.2, 6.5.2, 6.5.4 and 6.11.2; Tables A6.5 and A6.6.
- **Appendix A5.1**, Design Refinements.
- **Seagreen 1**: “Back-analysis and insights on suction caisson self-weight penetration from Seagreen 1 offshore wind farm”, ISFOG 2025 (ISSMGE).
- **East China Sea**: “Field observations from large scale Suction Bucket Jacket installation for an Offshore Wind Farm in East China Sea” (ISSMGE).
- **Horns Rev 2**: Ziton, “Mono Bucket foundation successfully decommissioned”; Recharge, 13 July 2015.
- **IAMMWG (2023)**, Review of management unit boundaries and abundance estimates for cetaceans in UK and adjacent waters (Irish Sea bottlenose dolphin MU: 293).

4 CUMULATIVE EFFECTS OF THE PHASE ONE WIND FARMS

4.1 WHY THIS MATTERS

NISA is one of five Phase One wind farms planned off the east coast: Oriel, NISA, Dublin Array, Codling and Arklow Bank 2. Several large UK and Isle of Man wind farms are also planned or being built in the Irish Sea. The same seabirds, porpoises, dolphins and seals will meet all of them. A wind farm that looks acceptable on its own can still contribute to serious harm when its effects are added to those of its neighbours.

The French State's 2026 scientific assessment (see Section 2.2.8) shows how uncertain this area still is. It found that the pressures from wind farms are likely to interact with each other and with other human pressures at sea, "without the cumulative effects of these interactions being capable, today, of being assessed robustly".⁶⁴ It also concluded that, with large-scale, long-term deployment of offshore wind, "lasting transformations of marine biodiversity are likely".⁶⁵ That is a reason for more caution in assessing NISA together with the other Phase One wind farms, not less.

The law requires this to be assessed. Under Article 6(3) of the Habitats Directive, a project must be assessed "either individually or **in combination with other plans or projects**". The EIA Directive requires an assessment of cumulative effects.

The Commission recognised this. Its further information request asked the applicant to:

- redo its cumulative assessment in line with the UK Planning Inspectorate's 2024 advice, with all the Phase One projects included as "Tier 1" (Item 5);
- assess cumulative effects on birds by season (Item 8(d)(i)), and on migratory birds (Item 8(d)(ii));
- include Lambay Island SAC in the in-combination assessment (Item 9(h));
- assess the cumulative noise from **concurrent pile driving across the Phase One projects**. This was to include mapping of masking and behavioural effects, and modelling of concurrent construction with at least one other wind farm (Items 10(r) and 10(s)).

Having read the relevant parts of the applicant's response, SWEG submits that the cumulative assessment is still **incomplete, internally inconsistent and, for the site NISA actually sits in, largely missing**.

4.2 BIRDS: THE SPA THAT NISA WOULD BE BUILT IN IS NOT ASSESSED "IN COMBINATION" FOR 20 OF ITS 21 SPECIES

This is in our view the most serious gap.

The applicant's own screening table (NIS Addendum, Table A6.9, pp. 676–678) decides which bird populations are taken forward to the in-combination assessment. For the **North-west Irish Sea SPA**, the site the whole wind farm lies within, **only one species, red-throated diver, is taken forward**. All

⁶⁴ Ifremer and CNRS (2026), Résumé ESCo, p. 2. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

⁶⁵ Ifremer and CNRS (2026), Résumé ESCo, p. 2. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

the others are excluded, including species whose predicted losses from NISA alone are well above the applicant's own 1% threshold:

North-west Irish Sea SPA species	Predicted increase in deaths from NISA alone (applicant's figure)	Taken forward to in-combination assessment?
Great black-backed gull	5.551%	No
Kittiwake ("restore" objective)	2.626%	No
Herring gull ("restore" objective)	0.968%	No
Guillemot	0.554%	No
Lesser black-backed gull	0.257%	No
Razorbill	0.215%	No
Roseate tern	0.193%	No
Common tern	0.133%	No

The reason given for excluding most of them is the same each time: *"Within the NWIS cSPA there are no WTGs from other OWFs so there is no other collision risk or displacement risk to consider in-combination with the proposed development."*

SWEG submits that this reasoning is wrong:

- **Seabirds do not stay inside lines on a map.** The kittiwakes, guillemots, gulls and terns of the North-west Irish Sea SPA feed, travel and migrate up and down the Irish Sea. They will pass Oriel to the north, Dublin Array, Codling and Arklow to the south, and the UK and Isle of Man wind farms to the east. Birds killed at those wind farms are lost from the SPA's population just as birds killed inside it are.
- **The applicant does not apply this reasoning anywhere else.** For the colony SPAs at Lambay, Ireland's Eye and Howth Head, the applicant *does* add up deaths at wind farms located outside those SPAs (NIS Addendum, sections 6.4.8–6.4.11). It is inconsistent to accept that birds from Lambay can be killed at Dublin Array, but deny that birds of the SPA surrounding Lambay can be.
- **The applicant itself applies a different rule for divers.** For red-throated diver, the one species it does take forward, the applicant includes Dublin Array and Oriel because they lie "within 10 km of the NWIS cSPA" (NIS Addendum, section 6.4.7.1). In other words, it accepts that wind farms *outside* the SPA can affect the SPA's birds. That is exactly the effect it denies for the other species.
- **The applicant admits the evidence is lacking.** In the same section the applicant states: *"There is no consistent evidence base across projects to support a robust in-combination assessment."* SWEG agrees. Under Article 6(3) of the Habitats Directive, the consequence of that admission is that the absence of adverse effects has not been shown.

- **The sums are already in the applicant's own documents.** The applicant's EIAR cumulative assessment adds up kittiwake deaths across 26 wind farms: about **754 kittiwakes a year** (Ch 15 Addendum, Table A15.77). It simply does not relate any share of that total to the North-west Irish Sea SPA.
- **Several of these species must be "restored", not just maintained.** For kittiwake and herring gull, the SPA's conservation objective is to restore their favourable condition. A combined assessment is all the more necessary where a population is already in poor condition.

What we ask the Commission to do

1. Require a full in-combination assessment for every qualifying species of the North-west Irish Sea SPA. That assessment must account for deaths at other wind farms of birds belonging to the SPA's populations. Until that is done, the Commission cannot be certain that there will be no adverse effect on the SPA's integrity.

4.3 ROCKABILL'S TERNS ARE NOT ASSESSED IN COMBINATION AT ALL

The same table excludes all three tern species at the Rockabill SPA from the in-combination assessment (NIS Addendum, Table A6.9, p. 678). For roseate tern, the reason given is that *"There are no other relevant projects ... that have published impacts to the Rockabill roseate tern population"*.

- **No published figure is not the same as no effect.** The burden is on showing that harm will not occur, not on others to prove that it will (European Commission guidance on wind energy and Natura 2000, C(2020) 7730, section 3.5).
- **The applicant's own EIAR contradicts it.** The cumulative roseate tern table predicts collisions at Dublin Array (Ch 15 Addendum, Table A15.91). Rockabill holds about 85% of the European roseate tern population. NISA's own surveys counted 308 roseate terns in the turbine area in August 2025, during this post-breeding period. The roseate terns at risk at Dublin Array are therefore very likely to include Rockabill birds.
- **"Unknown" has been treated as zero.** In the same roseate tern table, **13 of the 23 wind farms are listed as "Unknown"**, yet the total treats them as contributing nothing. Every other Phase One project apart from Dublin Array is entered as **0.0**.
- **The SPA's own targets require barriers and prey to be assessed.** The Rockabill SPA conservation objectives for roseate tern include targets of "no significant increase" in barriers to connectivity and "no significant decline" in available prey biomass (NPWS, 2013).
- **Barrier effects are excluded from every in-combination assessment.** The applicant screens out barrier effects completely at the in-combination stage (NIS Addendum, p. 693). Terns from Rockabill will in future have to fly around a chain of wind farms along the east coast, not just NISA, to feed their chicks and during migration. With Oriel to the north and Dublin Array and Codling to the south, the result could be a near-continuous line of turbines along the east coast. That combined barrier has not been assessed. Tracking of Sandwich terns in the North Sea found that the gap between two neighbouring wind farms "was largely unused by commuting and foraging birds", which the researchers described as "a further aspect of cumulative OWF influence that has not previously been detected for seabirds during the breeding season" (Fijn, 2024, p. 248). The same study calls for "a flyway-wide

cumulative approach to study, mitigate and compensate” the combined effects of wind farms (p. 284).⁶⁶

What we ask the Commission to do

2. Require an in-combination assessment for Rockabill’s roseate, common and Arctic terns. It should cover collision, displacement and barrier effects, during both breeding and post-breeding periods. Where another project’s effect is unknown, it should be estimated, not set to zero.

4.4 ERRORS AND GAPS IN THE CUMULATIVE BIRD TABLES

Comparing the applicant’s cumulative tables with their own totals shows a number of problems. These are matters of simple arithmetic and consistency that can be checked on the face of the documents.

4.4.1 Kittiwake: some wind farms are left out of the total. In Table A15.77 (Ch 15 Addendum, pp. 15.189–15.191), the “annual total” column for the other wind farms adds up to about 790 kittiwake deaths a year. The total the applicant uses is 736. The difference comes from two sources:

- wind farms that only published an annual figure, not a breakdown by season, have been dropped from the total altogether (Burbo Bank Extension 23.0, Twin Hub 9.7, Ormonde 3.3);
- one breeding-season figure was excluded as outside foraging range (West of Orkney 17.1).

4.4.2 Razorbill: two rows are identical and the totals do not add up. In Table A15.52 (Ch 15 Addendum, p. 15.145), the rows for **Moor Vannin** (Isle of Man) and **Arklow Bank Phase 2** are identical in every column (1,194; 76; 653; 214; 2,136). This is almost certainly a copying error. The column totals given in the table (e.g. annual total 24,016) also do not match the sum of the rows shown (about 20,138).

4.4.3 Guillemot: the totals are inconsistent, and the higher-risk results are set aside. In Table A15.50 (Ch 15 Addendum, pp. 15.141–15.142):

- the “annual total with the proposed development” (82,848) does not equal the other projects’ annual total plus NISA’s ($67,759 + 22,061 = 89,820$);
- more importantly, at the higher displacement and mortality rates the applicant itself presents, the cumulative breeding-season loss is **1.1–2.7% of baseline deaths** (Table A15.51). That is above the applicant’s own 1% threshold. The conclusion of “low” magnitude is based only on the lowest rates.

4.4.4 Only projects with published numbers are counted.

- The applicant states that projects are included in the numbers “only ... if publicly available information on project impacts are available” (Ch 15 Addendum, p. 15.134).
- No Tier 2 or Tier 3 projects are included for any species.
- Other pressures on the same birds, such as fisheries bycatch, are excluded as “part of the baseline” (p. 15.133).

⁶⁶ Fijn, R.C. (2024). *Tracking Terns: Year-round movement ecology of Sandwich Terns in a changing marine environment*. PhD thesis, University of Amsterdam: <https://hdl.handle.net/11245.1/a69ffd0e-1573-4431-be1c-d5c17f130ed5>

The result is a cumulative total that can only err on the low side.

4.4.5 Figures from different methods are simply added together.

- The figures for the other Phase One projects are taken from their own applications. These used different survey data, seasons, displacement rates and collision assumptions from those NISA now uses after the Commission's request.
- The applicant itself classes the Dublin Array data as only "Medium" confidence, from the "original submission" (Ch 15 Addendum, Table A15.48).
- NISA's own predicted roseate tern collisions rose about tenfold once the new aerial surveys were added. There is no indication that the other projects' figures have been checked in the same way.

4.4.6 The comparison populations dilute the result. The EIAR cumulative totals are compared with very large "regional" populations, for example over 930,000 kittiwakes and over 1.3 million guillemots. Against those numbers almost any loss looks small. The question for the Habitats Directive is the effect on the protected populations of the North-west Irish Sea, Rockabill, Lambay, Ireland's Eye and Howth Head SPAs. For the North-west Irish Sea SPA and Rockabill, that question has not been answered (5.2 and 5.3 above).

What we ask the Commission to do

3. Require the applicant to:
 - correct the cumulative tables;
 - include projects where only annual totals exist;
 - estimate, rather than omit, effects where figures are unknown;
 - apply consistent methods across projects;
 - base its conclusions on the full range of displacement and mortality rates, not just the lowest.

4.5 MARINE MAMMALS: OTHER WIND FARMS' PILING HAS BEEN LEFT OUT

4.5.1 A welcome change. The applicant now proposes suction-bucket foundations for the turbines, so NISA itself would not use impact piling. SWEG welcomes this. It removes the loudest source of underwater noise from NISA's own construction.

4.5.2 But the cumulative picture has been narrowed, not completed.

- Because NISA would not pile, the applicant has screened piling at the other wind farms out of the in-combination assessment entirely. It has also stopped assessing effects at the scale of whole marine mammal populations (NIS Addendum, section 6.3.1, pp. 644–646).
- The Commission did not ask whether NISA would pile. It asked for the cumulative effect of concurrent construction across the Phase One projects (Items 10(r) and 10(s)).
- Codling (construction stated as 2026–2039), Dublin Array (2029–2030, cables to 2031) and Arklow Bank 2 (2027–2030) all overlap with NISA's construction (2027–2030), according to the applicant's own Table A6.3.

- While those projects are piling, NISA would be adding unexploded ordnance (UXO) clearance, geophysical surveys and up to **70 vessels on site at once** (3,032 return trips). The harbour porpoises of the Rockabill to Dalkey Island SAC would experience all of these together. That combined disturbance has not been assessed.

4.5.3 The applicant's own figures approach or exceed the guideline limit for porpoise SACs. The applicant uses the UK guidance on noise in harbour porpoise SACs (JNCC 2020). Under that guidance, noise disturbance "is considered to be significant if it excludes harbour porpoises from more than: 1. 20% of the relevant area of the site in any given day, or 2. an average of 10% of the relevant area of the site over a season". Its own results show:

- **24% of the SAC** if NISA and Codling carry out low-order UXO clearance near the SAC at the same time. That is above the limit. The applicant dismisses this as "extremely unlikely", but offers **no commitment** to prevent it. It commits only to avoid concurrent *high-order* detonations, which could affect 53% of the SAC (NIS Addendum, pp. 655–656);
- **18.7% of the SAC** if six projects carry out geophysical surveys at once, close to the limit (p. 652);
- these figures do not include piling at other wind farms;
- the applicant does not assess the second test, the **seasonal average of 10%** of the SAC.

A conclusion of "no adverse effect beyond reasonable scientific doubt" cannot rest on an assumption that an exceedance is "unlikely", with no binding measure to prevent it.

4.5.4 Vessels. The applicant states that vessel numbers for the other projects are "not available" and assumes they will be "of a similar scale" to NISA's (p. 660). That would mean several hundred vessels and over 10,000 return trips across the Phase One projects. No cumulative calculation is made, and the 2024 conclusion is carried forward unchanged.

4.5.5 Masking. The Commission asked for maps of masking and behavioural effects (Item 10(s)). The applicant says masking "cannot be explicitly modelled or assessed" because there are no agreed thresholds (NIS Addendum, p. 53). SWEG accepts that the science is developing. But that is a reason for more caution, not for leaving the effect out.

4.5.6 A minor inconsistency. For geophysical surveys, the text gives NISA's overlap with the SAC as 0.04 km² for the export cable corridor and 0.39 km² for the array. Table A6.6 gives the reverse, with a different percentage (pp. 652–653).

What we ask the Commission to do

4. Require:

- an in-combination noise assessment for the Rockabill to Dalkey Island SAC and Lambay Island SAC that includes piling at the other Phase One projects alongside NISA's UXO clearance, surveys and vessels;
- assessment against both the daily (20%) and seasonal (10%) limits;
- a binding condition preventing concurrent UXO clearance (low- or high-order) with Codling or any other project near the SAC;
- a quantified cumulative vessel assessment.

4.6 CONCLUSION ON CUMULATIVE EFFECTS

The applicant was given a clear opportunity, and specific instructions, to assess the effects of NISA together with the other Phase One wind farms. In SWEG's view, the result falls short in four ways:

- the SPA that NISA would be built in is assessed in combination for only one of its 21 species;
- Rockabill's terns are not assessed in combination at all;
- the cumulative bird tables contain arithmetical errors and omissions that all point towards understating the effects;
- for marine mammals, the loudest activity at the other wind farms, piling, has been left out. The applicant's own figures already show the guideline limit for the porpoise SAC being exceeded in one scenario.

Without a complete and accurate in-combination assessment, the Commission cannot reach the certainty that Article 6(3) requires. SWEG respectfully submits that permission should be refused. At the very least, no decision should be made until these gaps are filled and the public has had an opportunity to comment.

Sources for Section 4

- **Commission's further information request** (10 April 2025): Items 5, 8(d)(i)–(ii), 9(h), 10(r)–(t).
- **NIS Addendum (2026):**
 - Table A6.3 (marine mammal projects and construction dates);
 - section 6.3.1 (pp. 644–646);
 - section 6.3.2 and Tables A6.6–A6.8 (pp. 652–660);
 - Table A6.9 (pp. 676–678);
 - section 6.4.6 (p. 693);
 - section 6.4.7.1 (pp. 693–694);
 - RFI response table (pp. 53–54).
- **Ch 15 Addendum (2026):**
 - section 15.9.3 (pp. 15.133–15.134);
 - Table A15.48;
 - Tables A15.50–A15.52 (pp. 15.141–15.145);
 - Table A15.77 (pp. 15.189–15.191);
 - Table A15.91 (pp. 15.204–15.205).
- **NPWS (2013):** Conservation Objectives: Rockabill SPA 004014, Version 1.
- **European Commission (2020):** Guidance document on wind energy developments and EU nature legislation, C(2020) 7730, section 3.5.
- **JNCC, Natural England and DAERA (2020):** Guidance for assessing the significance of noise disturbance against conservation objectives of harbour porpoise SACs (England, Wales and Northern Ireland). JNCC Report 654. See also JNCC (2025), Updated Effective Deterrent Ranges (EDRs) for assessing the significance of noise disturbance in harbour porpoise SACs, JNCC Report 803.

5 VISUAL IMPACT, SEASCAPE AND TOURISM

5.1 OUR POSITION IN BRIEF

SWEG supports offshore wind. We do not accept, however, that **35 turbines 316 metres high (or 49 turbines 290 metres high), with the nearest only 12.4 km from Skerries**, will have no significant effect on the coast of north Fingal. Each turbine would be almost as tall as the Eiffel Tower. The array would stretch across most of the sea view from Skerries, Loughshinny, Rush and Balbriggan. It would stand **behind Rockabill and the Skerries islands**, so that from the coast the islands and the lighthouse would no longer be seen against open sea and sky but against a backdrop of turbines several times their height. The array would stay there for at least 35 years.

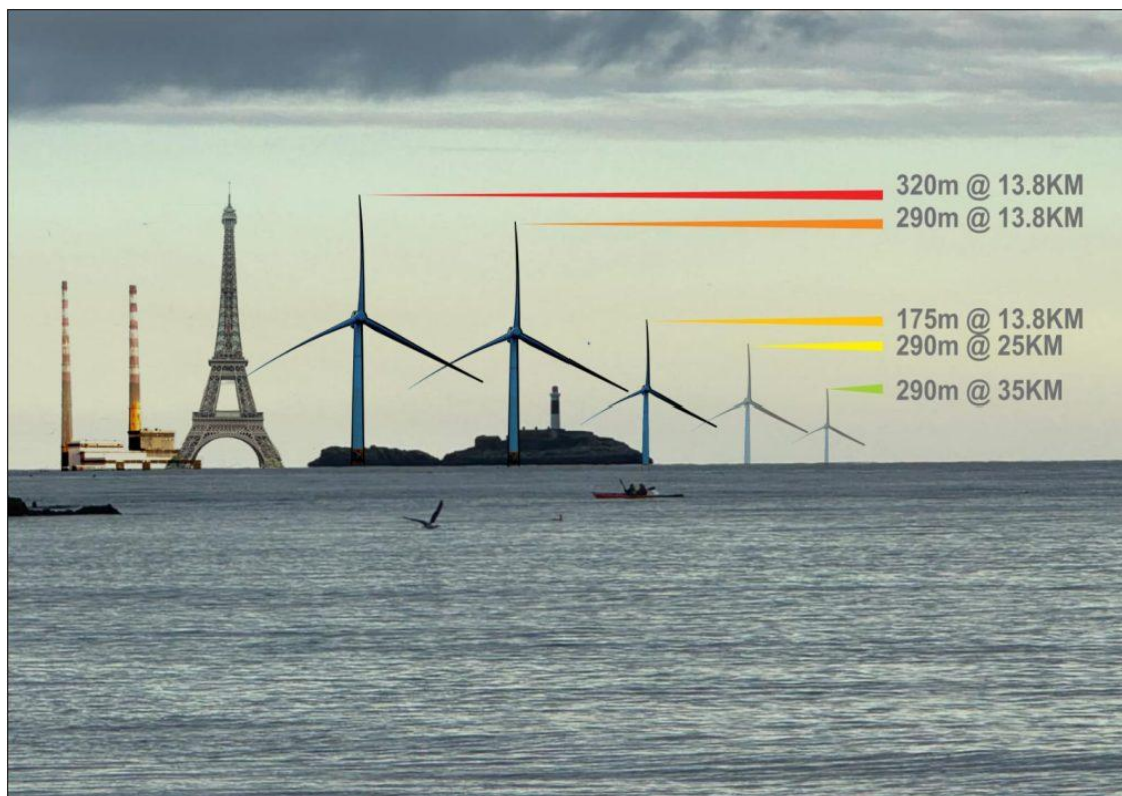


Figure 8. Illustration of the apparent height of turbines seen from Skerries, compared with Rockabill (about 7 km away). Poolbeg chimneys and the Eiffel Tower are shown at 13.8 km for comparison with turbines of different heights at that distance; the figure also shows 290 m turbines at 25 km and 35 km (SWEG)

We made this case in our 2024 submission (Section 3.2, Visual Impact, and Section 3.3, Cultural Heritage, Tourism and Economy). Blue Ireland made it in its own submission (Part 1, “Distance to shore & Visual impact”, pp. 56–60). Both submissions relied on research by **White Consultants** for the UK and Welsh governments. That research shows that turbines of this height are normally placed **around 30 km or more** from a sensitive coast, not 12–13 km.

The further information does not answer this concern. The turbine heights, the number of turbines and the area where they would go are the same as in 2024. The nearest turbine is now **closer** to shore for Option 1. And the applicant’s **own** viewpoint assessment still rates the effect at Skerries, Loughshinny and Ardgillan in the second-highest category in its own scale. The only reason it says these effects are “not significant” is a threshold it chose itself.

5.2 WHAT THE APPLICANT SAYS

The applicant's conclusion is that there are **no significant seascape, landscape or visual effects**, and therefore no significant effect on tourism or on the "sense of place" of the coast:

- *"Visual effects from the majority of assessed viewpoints range from imperceptible to slight or moderate-slight, with no significant effects identified in EIA terms."* (Ch 33 Addendum, section 33.5.3.3. The same wording is used in the RFI Response Report, Item 13.)
- *"Despite the introduction of offshore wind turbines, the fundamental structure, scale and openness of the receiving seascape will be maintained."* (Ch 33 Addendum, 33.5.3.3)
- On tourism: *"The magnitude of the impact is considered to be low as the impact will be imperceptible and long-term in nature. The sensitivity of the existing environment is considered to be low."* (Ch 33 Addendum, 33.5.3.3)
- In reply to our 2024 submission, the applicant said that the White Consultants research, the Dutch White Paper and the UK OESEA3 report *"can only be taken as the opinion of the authors rather than established guidance for this jurisdiction"*. (Response to Submissions Report, p. 5.7.35)

5.3 THE APPLICANT'S OWN ASSESSMENT FINDS EFFECTS IN THE SECOND-HIGHEST CATEGORY AT SKERRIES, LOUGHSHINNY AND ARDGILLAN

The phrase "the majority of assessed viewpoints" hides the most important results. In the applicant's own viewpoint tables, the three viewpoints closest to the array score far higher than "slight":

Viewpoint	Applicant's rating of the effect	Source
VP24 Amenity Area, Skerries (the spit between the South Beach and the harbour)	Major-moderate / Negative / Long-term	Ch 29 Addendum, Table of array viewpoints; A29.1 Addendum p. 18–19
VP25 Loughshinny	Major-moderate / Negative / Long-term	Ch 29 Addendum, same table
VP23 Ardgillan Castle grounds	Major-moderate / Negative / Long-term	Ch 29 Addendum, same table
VP21 Balbriggan Beach, VP26 Rush Coast Road, VP36 and VP37 Lambay Island, VP13–VP17 and VP20 (Clogherhead to Gormanston)	Moderate / Negative / Long-term	Ch 29 Addendum, same table
Shenick Island (Martello tower and promontory fort) and Rockabill Lighthouse, as heritage settings; the applicant applies the same result to St Patrick's Island	"medium magnitude and a moderate significance of effect"	Response to Submissions Report, p. 5.7.36

The applicant itself says of Skerries that VP24 *"represents the clearest and closest views towards the site from the settlement of Skerries and any other portion of the coastline"* (A29.1 Addendum). It says that at Ardgillan *"the proposed WTGs will fill most of the framed sea horizon"*, and that the

development “represents the introduction of built elements into a seascape currently only occupied by Rockabill Lighthouse and passing vessels” (Ch 29 Addendum, p. 29.20).

Having found all this, the applicant adds: “However, it must be reiterated that Major-moderate effects are not deemed to be significant effects in EIA terms” (Ch 29 Addendum, p. 29.20). Its 2024 method sets the line so that only effects of **“Major” or greater** count as significant (2024 EIAR Chapter 29, section 29.2, and the note to Table 29.7).

That line is the applicant’s choice, and it is set higher than normal practice in the UK. The applicant itself relies on UK guidance and practice.

- The applicant’s method is based on the UK *Guidelines for Landscape and Visual Impact Assessment* (GLVIA3) and on Scottish (NatureScot) guidance. It says these are used “in lieu of any equivalent adopted guidelines in the Irish Context” (2024 EIAR Chapter 29, section 29.2.2).
- The UK government’s own review of offshore wind visual assessments (White Consultants 2020) records that across the 23 UK offshore wind farm assessments it analysed, **“major-moderate is classified as significant in the vast majority”** of them (para. 5.30).
- The same review looked at how planning decisions were actually made. It found that **“Medium magnitude of effects leading to major/moderate significant effects were accepted as significant by Examining Authority panels and inspectors”** (para. 3.71).
- The UK guidance matrix it reproduces (Table 5.3 and para. 5.11) treats **“major and major/moderate effects”** as significant. It adds that even moderate effects “could be judged as significant, depending on the particular circumstances arising”.

In other words, judged by the practice the applicant says it follows, **the applicant’s own results show significant visual effects at Skerries, Loughshinny and Ardgillan.**

The applicant also rated the Skerries viewpoint only **“High-medium”** in sensitivity, not “High”. It gave Ardgillan “High”. We believe the Skerries coast, with its five islands, two Special Protection Areas, Martello towers, harbour, Rockabill Lighthouse, the Fingal Coastal Way and the view to the Mourne that inspired Percy French, deserves at least the same rating as the grounds of Ardgillan Castle. Based on the applicant’s own matrix, a “High” sensitivity with any larger magnitude of change moves the result into “Major”, which even the applicant accepts is significant.

5.4 WHAT THE WHITE CONSULTANTS RESEARCH SHOWS, AND WHY IT IS NOT JUST “OPINION”

Our 2024 submission and Blue Ireland’s both relied on two reports by White Consultants:

- **White Consultants (2020), *Review and Update of Seascape and Visual Buffer Study for Offshore Wind Farms***. Final report, March 2020. It was commissioned (through Hartley Anderson) as part of the UK Department for Business, Energy and Industrial Strategy’s Offshore Energy Strategic Environmental Assessment programme.

- **White, Michaels and King (2019), *Seascape and Visual Sensitivity to Offshore Wind Farms in Wales: Strategic Assessment and Guidance, Stage 3*. NRW Evidence Report No. 331⁶⁷, prepared for Natural Resources Wales.**

These are not personal opinions. They were **commissioned by government bodies** to guide where offshore wind farms should go. They are based on the actual findings of professional visual assessments of real wind farms in English, Welsh and Scottish waters, using the same GLVIA3 method the applicant uses.

How far away turbines of NISA's size typically still have a "medium" or "low" visual effect. White 2020 brings together its own analysis and the Welsh study in its Table 13.1. Table 5.4 summarises the Welsh figures:

Turbine height to blade tip	"Medium" visual effect: typical distance	"Low" visual effect: typical distance	Source
250–300 m (NISA Option 1: 290 m)	27.5 km (up to 31.1 km)	38.6 km (up to 47.6 km)	White 2020, Table 13.1
226–300 m	27.9 km (up to 31.4 km)	41.6 km (up to 52.7 km)	Welsh study, in White 2020 Table 5.4
301–350 m (NISA Option 2: 316 m)	24–35 km (wireline study); 32.8 km (Welsh study)	35–44 km (wireline study); 44 km (Welsh study)	White 2020, Table 13.1
107–145 m (for comparison)	14.0 km	19.2 km	White 2020, Table 13.1

In plain terms, for turbines the size of NISA's:

- at roughly 25–35 km, they typically still have a **medium** visual effect;
- to bring the effect down to **low**, they typically need to be 35–45 km away;
- **NISA's nearest turbine would be 12.4 km away.** That is closer than the distance at which even turbines a third of the height (107–145 m) typically still have a medium effect (14 km).

The report sums this up as a rough rule of thumb (para. 5.33). The average distance for a medium effect is about **100 times** the turbine height, and for a low effect about **133 times**. For a 316 m turbine, that means about 32 km and 42 km respectively. NISA's nearest turbine is only about **40 times** its height from the shore. Anything closer than the medium-effect distance means a greater effect than "medium".

The buffers White 2020 recommends. The report's final table (Table 13.4, "Possible range of buffers for single offshore developments") suggests these minimum distances:

Coast type	225–300 m turbines	301–350 m turbines
National Parks and AONBs with coastal qualities and Heritage Coast	40 km	40 km

⁶⁷ White, S., Michaels, S. and King, H. (2019). *Seascape and Visual Sensitivity to Offshore Wind Farms in Wales: Strategic Assessment and Guidance*. NRW Evidence Report No. 331, Natural Resources Wales.

Coast type	225–300 m turbines	301–350 m turbines
National Parks, AONBs, landscape World Heritage Sites	39 km	40 km
Heritage Coasts, National Trails; coastal heritage sites, historic parks and gardens	between the high and medium figures	between the high and medium figures
Medium sensitivity seascapes (the lowest category in the table)	27.5 km	30 km

Even for the lowest category of coast in the table, White recommends about 27.5–30 km for turbines of NISA's size. The report also says that undeveloped coast without designations should be treated at least as medium sensitivity (para. 13.75). NISA's 12.4 km is less than half the smallest of these figures.

Other relevant findings in White 2020:

- **How often the turbines would be seen.** Across the UK coastal weather stations studied, visibility was just under 24 km about half the time, about 34 km 20% of the time and about 40 km 10% of the time. The report says *"Most people might consider 50% of days (24km) as being too frequent"* (paras 13.69–13.70). At 12.4 km, NISA would on these figures be visible on well over half of all days.
- **Earlier government research found "large" effects at 13 km.** The UK's OESEA3 wireline work (reproduced in White 2020, Table 2.1) rated arrays of 10 MW and 15 MW turbines at 13 km from shore as having a "Large" effect. NISA's turbines are larger than either.
- **30 km is the limit of what the eye can make out, not the limit of significant effects** (para. 3.30). Visual acuity *"is unlikely to be a limiting factor"* for turbines this size (para. 13.68).
- **Significant effects have led to refusal at long distances.** Navitus Bay (200 m turbines, 19–27 km from the Dorset and Isle of Wight coasts) was refused. Significant effects at a viewpoint 27 km away influenced the refusal (paras 3.71 and 13.72).
- **Some assessments underestimate effects.** In reviewing assessments against built wind farms, the report found that *"some underestimate effects"* (para. 13.64).
- **Aviation lighting was not part of the analysis** (para. 5.12), so lighting adds to the daytime effects above (see 5.8).

What the Welsh study adds (NRW Report 331, 2019). The Welsh study divided the Welsh seas into zones. For all inshore zones (up to 22.6 km from shore) it found:

- that *"Up to 22.6km from shore the sensitivity of seascape is generally considered to be high for wind farm development"* (Executive Summary 2.4);
- that *"All turbine sizes would be likely to exceed low magnitude of effect"*, and *"Turbines above 175m would be likely to exceed medium magnitude of effect"* (visual susceptibility tables, e.g. Zones 3, 6, 8 and 12);
- that even between 22.6 km and 44 km, *"Turbines 300-350m would be likely to exceed low magnitude of effect"*.

Several high-sensitivity inshore zones were judged *"too sensitive to have ability to accommodate any offshore wind farm development"* (Zones 6 and 8).

Ireland's own strategic assessment points the same way. White 2020 (para. 6.47) records that the SEA for Ireland's own Offshore Renewable Energy Development Plan (2010) used these magnitude bands for **5–7 MW turbines**:

- **"Large: 0–15km from the coast – notable change";**
- **"Medium: 15–24km – moderate change";**
- **"Small: 24–35km – minor change".**

NISA's turbines are roughly 14–20 MW each and far taller, yet its nearest turbine is in the **"Large"** band of the Irish State's own SEA.

Applying the applicant's own matrix to these findings:

- a **High** sensitivity coast with a **Medium** effect gives **Major-moderate**;
- a **High** sensitivity coast with a **High** effect gives **Major**, which the applicant accepts is significant.

At 12.4 km, all of this research points to a high effect, not a medium one.

On the applicant's "not guidance for this jurisdiction" point:

- The applicant's whole visual assessment rests on UK and Scottish guidance, because Ireland has no equivalent. It cannot rely on UK guidance to set its method and then reject UK government research on how that same method plays out in practice.
- Ireland has **no offshore wind visual guidance of its own**. That is a reason for the Commission to give more weight to the best available evidence, not less.
- The applicant replied that visual effects depend on "more contextual factors than solely the mathematical relationship between turbine height vs distance" (Response to Submissions Report, p. 5.7.34). That misses the point. The White distances are **not** a formula. They are drawn from the professional, context-based judgements of real assessments and real planning decisions.

We note, to be fair, that White 2020 records some arrays being approved closer to **developed, flat urban coastlines**. Rampion and Gwynt y Môr were approved about 13 km from Brighton and the north Wales resorts, and Burbo Bank extension and Westernmost Rough about 8 km from flat coastal settlements (para. 13.76). The report explains that this was because *"some developed flat coastlines have greater tolerance"* than undeveloped coasts. North Fingal is not such a coast. It is a coast of islands, headlands, harbours, protected bird colonies and heritage features, with views out to Rockabill and along to the Mournes. The turbines at those wind farms were also much smaller than NISA's.

We also refer the Commission to:

- **the Dutch White Paper on Offshore Wind Energy (2014)**. As set out in our 2024 submission, it aimed to keep turbines outside the 12-nautical-mile zone (about 22 km) as far as possible, and rated the impact of 250–320 m turbines at 13 km from the coast as "Large or Very Large". White 2020 (para. 6.40) also records that the Dutch government assessed even an array **22 km** off the Holland coast as **negative** for both visibility and dominance;
- **the UK OESEA3 Environmental Report (2016)**, which concluded that for high-value, high-sensitivity coasts a buffer of about **30 km** could apply to developments of a range of sizes (p. 291, as quoted in our 2024 submission and in White 2020, para. 13.3).

5.5 DISTANCE FROM SHORE ELSEWHERE

White 2020 has a full chapter on international practice (Chapter 6, “An updated International perspective”). Its findings are clear:

- **The trend is to go bigger and further out.** *“European nations tend to start with developments closer to shore and then place larger arrays with larger turbines significantly further offshore”* (para. 6.66). *“The trend in the most recent and larger planned schemes, is for larger turbines, in significant numbers, and further offshore for the more experienced nations”* (para. 6.70).
- **The European average is about 40 km.** At the end of 2017, the average distance offshore of grid-connected European wind farms was **41 km** (para. 6.9). Consented wind farms with **10–15 MW turbines averaged 40.1 km** offshore (Table 6.4). NISA’s turbines are larger again, at 12.4 km.
- **Ireland is the exception, not the rule.** White notes that *“average distances offshore are reducing due to late entrants Ireland, France and Sweden who are starting their offshore development closer to shore”* (para. 6.70).
- **Germany:** *“most planners voluntarily keep to a minimum distance of 30km from the shore, as a result the wind farms become hardly visible from land”* (para. 6.26). Germany’s 2019 draft site plan limits turbines *within sight of the coast* to a height of **125 m** (para. 6.30). Operational German wind farms average **55 km** offshore and consented ones **52 km** (para. 6.28). Planners and developers *“have favoured a 30km minimum distance offshore to deter any refusals based on the visual and noise impacts”* (para. 6.68).
- **Belgium:** a wind farm concession **12.5 km** off the coast at Knokke was granted in 2002 and then *“withdrawn by the Government due to local opposition”*. Later applications for other wind farms **between 5 km and 16.5 km** offshore *“were also rejected”* (para. 6.32). Belgium then zoned wind farms from just inside the **22 km** territorial limit outwards, *“at distances considered too far for visual intrusion”* (para. 6.33). Its operational wind farms average **36 km** offshore (para. 6.35).
- **Netherlands:** turbines off the Holland coast are to be at least **22 km** from shore (para. 6.40). The newer zones are around **60 km** out (para. 6.41).
- **USA:** the earliest proposal, Cape Wind, *“has been subject to prolonged objection, partly on visual setting grounds”* (para. 6.66).

Blue Ireland added more recent examples (Blue Ireland Part 1, pp. 56–58):

- Denmark’s Thor wind farm is at least **22 km** offshore;
- Seagreen is 27 km, Berwick Bank about 30 km and Morven 40 km off the Scottish coast;
- Mona, Morgan and Morecambe in the Irish Sea are each at least **22 km** from shore.

The applicant’s examples. In reply to our 2024 submission, the applicant listed wind farms closer to shore than 22 km (Response to Submissions Report, p. 5.7.34). Most involve **much smaller turbines** or **very different circumstances**:

Applicant’s example	Distance	Turbines
Middelgrunden, Denmark	2–3.5 km	20 × 2 MW, 102 m tall (White 2020, Table 6.1 and para. 6.20). Built as a community cooperative; reduced from three rows to a

Applicant's example	Distance	Turbines
		single curving line after public involvement (see 5.6).
Nysted ⁶⁸ , Denmark	about 10 km	72 × 2.3 MW (White 2020, Table 6.1). Its own assessment recognised the array as “a ‘significant element in the coastal landscape’” (para. 6.18).
Vesterhav ⁶⁹ Nord and Syd, Denmark	5.5–10 km	41 × 8.4 MW, up to 193 m tip. After local opposition, the turbines were moved as far out as the designated zone allowed: Vesterhav Syd’s 20 turbines are 9–10 km out, about double the original distance; Vesterhav Nord’s 21 turbines are 5.5–8.4 km out.
Hollandse Kust Zuid ⁷⁰ , Netherlands	about 18.5 km	11 MW, 125 m hub and 200 m rotor (about 225 m tip)
Korsnäs, Finland	15 km	Not built. Scenarios assessed in 2026 range from 92–150 turbines of 15 MW (260 m tip) to 100 turbines of 25 MW (350 m tip). The developer moved the project area “further away from the Kvarken World Heritage Site, nature reserves and from fish spawning grounds”. ⁷¹

Even the newest of these, Hollandse Kust Zuid, uses turbines about 90 m shorter than NISA’s, at 6 km further from shore. None of the built examples combines turbines over 300 m tall with a distance of about 12 km from a coast of high scenic and heritage value. The one unbuilt example, Korsnäs, would be further out, at 15 km, and its developer moved it away from protected sites and spawning grounds: the opposite of what has happened at NISA. Early nearshore wind farms with small turbines tell the Commission nothing about whether a 316 m array at 12.4 km is acceptable. Belgium’s experience with a wind farm at 12.5 km is the closer comparison.

Moving further out is possible. Blue Ireland pointed out, from the national seabed mapping (INFOMAR), that there is a considerable area of seabed 65 m deep or less up to 25 km offshore, especially to the north-east of Skerries. It also noted that fixed foundations are being installed in 64–76 m depths at Morven in Scotland (Blue Ireland Part 1, p. 59). The applicant now proposes suction-bucket jacket foundations (Ch 6 Addendum). That makes its argument that the array cannot be moved further out harder, not easier, to sustain. This links directly to the avoidance case in Section 1 of our submission.

SWEG’s alternative layouts. In our 2024 submission we proposed moving the array into the far north-east of the Maritime Area Consent area. SWEG has since prepared two alternative layouts within the consent area, for 500 MW and 700 MW, that keep all turbines at least 15 km from Rockabill, further offshore and away from the main bird migration routes, while staying in feasible

⁶⁸ The Wind Power, Nysted: https://www.thewindpower.net/windfarm_en_1145_nysted.php

⁶⁹ Power Technology, Vesterhav Nord and Syd: <https://www.power-technology.com/projects/vesterhav-nord-and-syd-offshore-wind-project-north-sea-denmark>; Offshore Energy, Vattenfall pushes Danish nearshore wind farms farther offshore: <https://www.offshore-energy.biz/vattenfall-pushes-danish-nearshore-wind-farms-farther-offshore>

⁷⁰ Hollandse Kust Zuid: https://en.wikipedia.org/wiki/Hollandse_Kust_Zuid_Offshore_Wind_Farm

⁷¹ Ramboll (May 2026), *Summary: assessment of the regional economic impacts of the Korsnäs offshore wind farm project*, for Vattenfall and Metsähallitus (scenarios and 15 km distance); Metsähallitus, Korsnäs offshore wind farm project description (relocation): <https://www.metsa.fi/en/responsible-business/wind-power/korsnas-offshore-wind-farm/description-of-the-korsnas-offshore-wind-farm-project/>

water depths (Figure 9). These were presented to local councillors. We put them forward only as a compromise, if the Commission does not accept that the project should be refused at this location (see Section 1.4.3).

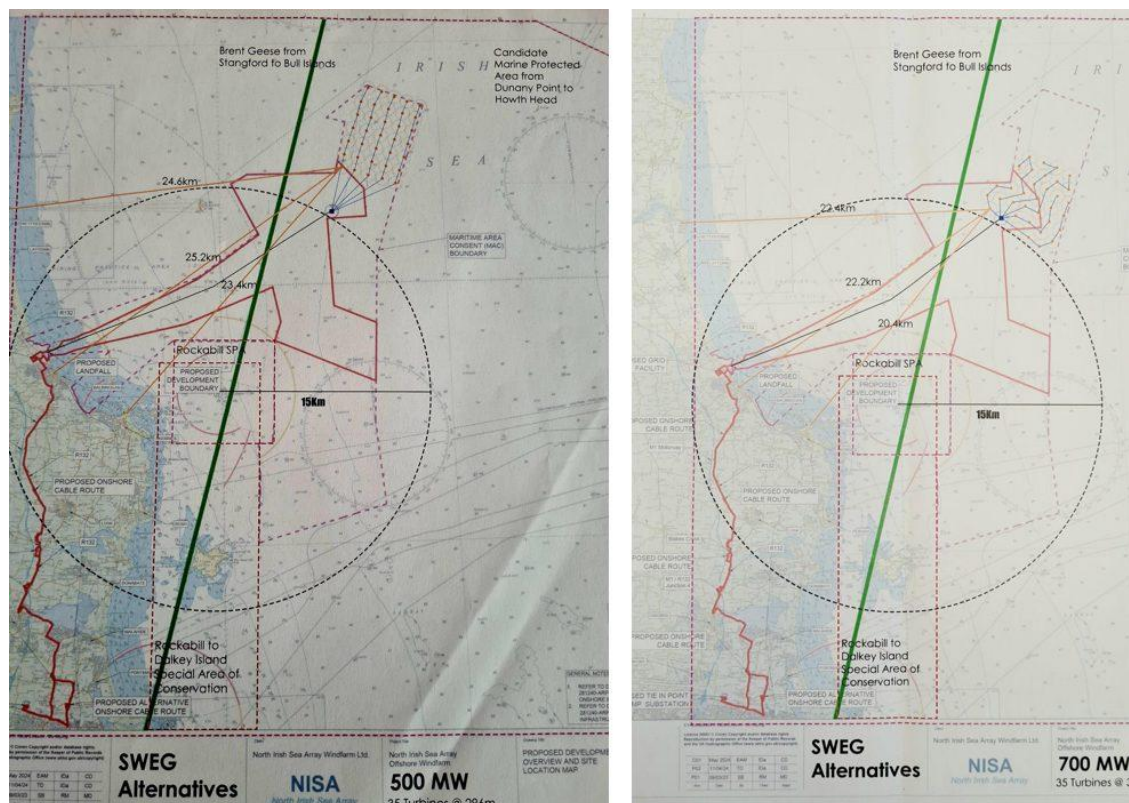


Figure 9. SWEG's alternative layouts within the Maritime Area Consent area, for 500 MW (left) and 700 MW (right), each keeping turbines at least 15 km from Rockabill (maps prepared for SWEG by architecture graduate Shauna Murphy)

On 14 May 2026, a motion by Councillors Ryan and Quinn seeking an oral hearing on NISA was passed by majority vote at the Balbriggan Area Committee meeting of Fingal County Council (Motion No. 66).

5.6 WHAT REAL PUBLIC PARTICIPATION LOOKS LIKE, AND WHAT HAPPENED HERE

The applicant's own lead example shows what meaningful public participation can achieve. White 2020 describes **Middelgrunden** as follows (paras 6.19–6.20). It had 102 m turbines just 2–3.5 km from a very popular recreational area near Copenhagen harbour, yet it “received very little opposition considering the visual impact”. White says “The reason is believed to be the strong public involvement, both financially and in the planning phase, as well as refinement of the design of the scheme. This was modified from three lines of turbines to a smaller number of turbines in a single curving line”. The project's own account confirms the change: from 27 turbines in three rows to 20 in one line, after public protests. It was built as a cooperative with more than 8,500 local co-owners (H. C. Sørensen⁷², *Middelgrunden Wind: land–sea interaction*, C4MSP presentation, 2021).

White 2020 quotes the lessons-learned study by Sørensen et al. (2002): “although active public involvement is a time and resource requiring challenge, it is to be recommended as it may lead to mitigation of general protests, blocking or delaying projects, and increase future confidence,

⁷² Sørensen, H. C. (2021). Middelgrunden Wind: land–sea interaction. C4MSP presentation, VASAB: <https://vasab.org/wp-content/uploads/2021/02/Hans-Chr-Soerensen-C4MSP-Middelgrunden-Wind-land-sea-interaction-03032021.pdf>

acceptance and support” (para. 6.19). From the Danish experience it concludes that *“public interaction at an early stage is more beneficial than setting offshore limits”* (para. 6.67). In other words, where turbines are placed close to shore, the public must be involved while the layout can still be changed, and the layout must change as a result.

Nothing like this has happened with NISA:

- **The pre-application “consultation” was non-statutory.** It consisted of information events (which the applicant dates to July 2023, “November 2024” and April 2024) and an online “Virtual Consultation Room” (Response to Submissions Report, p. 5.7.1). The public was shown the developer’s design at each stage. There was no process through which local views on siting, height or the number of turbines could shape the design.
- **Concerns raised were not acted on.** We raised the under-scaling of the photomontages with the applicant’s representatives in May 2024. The applicant did not change its approach (SWEG 2024, pp. 63–64; Response to Submissions Report, p. 5.7.46). Since then, the heights, the number of turbines and the location have not changed at all (see 5.10).

The applicant’s own Consultation Report claims that the “primary objective of the public consultation process has been to provide opportunities for members of the public ... to contribute to the planning and design of the proposed development” (2024 EIAR Appendix 1.2, quoted at Response to Submissions Report, p. 5.7.1). We cannot identify a single feature of the design that changed because of what the public said about visual impact or tourism.

EU and international law expect more than this. The EIA Directive requires that the public be given *“early and effective opportunities to participate”* (Directive 2011/92/EU as amended, Article 6(4)). The Aarhus Convention requires *“early public participation, when all options are open and effective public participation can take place”*, and that *“due account is taken of the outcome of the public participation”* (Articles 6(4) and 6(8)). For NISA, the main choices of site, scale and distance from shore were made before the public had any real say. The only formal opportunity, the planning application itself, comes when those options are effectively closed.

5.7 THE PHOTOMONTAGES AND THE SCALE OF THE TURBINES

In 2024 we showed, with calculations checked by Dr Tom Pius Molony (applied mathematics, formerly TCD and UL), that the nearest 316 m turbine would appear about **3.49 times the height of Rockabill Lighthouse** (46.5 m above sea level) from Skerries. We also showed that the applicant’s photomontages appeared to under-represent the turbines’ height by about **13% (VP25 Loughshinny) to 16%** (SWEG 2024, Section 4.1.7 and pp. 63–69).

The applicant replied that its photomontages follow NatureScot guidance and are surveyed “to within 10cm of the turbine locations” (Response to Submissions Report, p. 5.7.46). It did not engage with our arithmetic. Our 2024 calculation used a distance of 13.8 km to the nearest turbine. The applicant now says the nearest turbine would be **12.4 km** from the coast. A closer turbine looks taller relative to the lighthouse, so if anything the ratio would now be higher than 3.49.

We also note that the applicant’s main Skerries photomontage (VP24) **cuts off Rockabill Lighthouse**, the one object of known height that lets a viewer judge scale. The 2024 application did include photomontages showing the turbines against Rockabill (Figure 10), and we showed in 2024 that they under-represented the turbines’ height. The 2026 photomontages no longer show the array against Rockabill at all.

North Irish Sea Array (NISA) - Photomontages

35 - 49 no. Turbines
Project Option 1: 49 turbines
Project Option 2: 35 turbines

Option 1 viewed from Skerries (Red Island) with 49 turbines:



Option 2 viewed from Skerries (Red Island) with 35 turbines:



Figure 10. The applicant's 2024 photomontages from Skerries, showing the array behind Rockabill. SWEG showed in 2024 that these under-represented the turbines' height

5.8 NIGHT-TIME EFFECTS

The applicant's further information states that the **Department of Defence has asked for the turbines to be lit with "Type C medium intensity fixed red obstacle lighting"**. New night-time photomontages have been prepared (Ch 29 Addendum, section 29.5.6.4, and Appendix A29.3). Even so, the applicant states that its 2024 conclusion of no significant night-time effects "remains unchanged".

The applicant's own night-time assessment for Skerries (VP24) says that *"the open sea to the northeast is relatively dark unless ships are passing"*. It accepts that the turbine lights will appear *"in a portion of the view not previously occupied by fixed light sources other than the Rockabill Lighthouse"*, giving *"a reduced sense of open sea and associated darkness and distance"* (A29.1 Addendum, VP24 night view). That assessment assumed **flashing** lights. The **fixed** (non-flashing) red lights requested would be visible every night, on the closest offshore wind farm to the Fingal coast, for 35 years. We ask the Commission to look at the new night-time photomontages itself, rather than rely on the applicant's statement that nothing has changed. White Consultants also noted that its distance findings do **not** include the effect of aviation lighting (White 2020, para. 5.12), so lighting would add to the daytime effects described above.

5.9 TOURISM AND THE "SENSE OF PLACE"

Fáilte Ireland raised concerns. The Commission's further information request (Item 13(a)) arose because Fáilte Ireland, the State's tourism development authority, raised concerns about the effects on tourism. The applicant's answer leans on three things, none of which we think is enough.

(a) It depends entirely on the finding of "no significant visual effects". The tourism chapter says *"As confirmed by the Seascape, Landscape and Visual Impact Assessment (Chapter 29), there are no significant operational phase seascape or visual effects"* (Ch 33 Addendum, 33.5.3.3). It then calls the tourism impact **"imperceptible"**. That cannot be right when the applicant's own Chapter 29 rates

the view from Skerries, the town closest to the array, as **Major-moderate**, one step below its top category. An effect cannot be both “Major-moderate” for the viewer and “imperceptible” for the visitor standing in the same place.

(b) It rates the sensitivity of east coast tourism as “low”. In the same section the applicant describes the east coast as “*an attractive destination for tourists and residents alike due to the meditative nature of the coastal spaces*” and rates its sense-of-place sensitivity as “**medium**”. Yet it rates tourism sensitivity as “**low**”. Fingal’s own Tourism Strategy 2024–2029 puts the 88 km coastline, the Dublin Coastal Trail and “slow tourism” at the heart of the county’s offer. Skerries depends on its harbour, islands, beaches, sailing, kayaking, sea swimming, the Skerries Mills and events such as the **3-Island Challenge** currach race, which attracts crews from Ireland, the UK, the US and Spain (SWEG 2024, Section 3.3). We do not accept that the tourism sensitivity of this coast is “low”.

The local currach-rowing and boat-building club, Currachaí na Sceirí, whose members have removed some 24,000 items of rubbish from the Skerries islands since 2018, shares this concern. Its annual 3-Island Challenge, the largest currach race in Ireland, brings crews from across Ireland, the UK, Spain and the USA to race around the Skerries islands, all part of the SPA network (Figure 11). The club fears that it would be much harder to promote the race with an array of giant turbines so close to shore.



Figure 11. The 3-Island Challenge currach race off Skerries, with Rockabill in the background (photo courtesy of Maxwell Photography)

(c) It relies on an unpublished Fáilte Ireland draft. The applicant quotes findings from a Fáilte Ireland report on *Visitor Awareness and Perceptions of Renewable Infrastructure in the Irish Landscape*, which it says is “currently being drafted” and whose findings “were shared with the Developer” (Ch 33 Addendum, 33.5.3.3). The public has not seen this report and cannot check it. We do not know:

- whether it deals with **offshore** wind at all, or mainly onshore infrastructure;

- whether it deals with turbines anything like 316 m tall;
- whether any of the visitors surveyed were at a coast with a wind farm 12 km offshore.

Even based on the applicant's own summary, among visitors who noticed renewable energy infrastructure, **about four in ten did not say it had no effect on their enjoyment**, and for one in three it did play a part in their choice of destination. Those are not small numbers for a town whose tourism depends on its sea views.

It is unfair for the applicant to rely on a draft that is not available to the public or, as far as we know, to the Commission. We ask the Commission to give it no weight unless it is published and all participants have an opportunity to comment on it.

Cultural heritage and sense of place. In 2024 we explained the importance of St Patrick's Island (a 6th-century monastic site), Shenick Island and Rockabill to the identity of Skerries. We also pointed to the solstice alignment between Rockabill and the Baltray standing stones. The applicant did not assess St Patrick's Island or the Baltray stones directly, because they are not national monuments. It assessed Shenick Island and Rockabill Lighthouse as having effects of **moderate** significance. It then said *"it is fair to apply this result"* to St Patrick's Island (Response to Submissions Report, pp. 5.7.35–36). This is part of the "sense of place" the Commission asked the applicant to address. The applicant's conclusion that it "will remain intact" is not consistent with its own findings.

Fingal County Council. The applicant repeatedly relies on Fingal County Council's 2024 view that there would be no significant seascape effects (Response to Submissions Report, pp. 5.7.34–36). We respectfully disagree with that view. We note that the Council's own Development Plan describes "the sensitive coast of Fingal". In any case, the Council's view does not change the applicant's own finding of Major-moderate effects at three Fingal viewpoints.

5.10 THE DESIGN CHANGES SINCE 2024 DO NOT CHANGE THIS ANALYSIS

The applicant presents its further information as including "design refinements". For visual impact, these make no meaningful difference, and in one respect they make things worse:

Design element	2024 application	2026 further information	Effect on visual impact
Turbine tip height	Option 1: 290 m. Option 2: 316 m (311 m in an aviation zone)	Unchanged. 290 m; 316 m (311 m for 8 turbines in the aviation zone)	None
Rotor diameter and hub height	250 m and 165 m (Option 1); 276 m and 178 m (Option 2)	Unchanged	None
Number of turbines	49 or 35	Unchanged	None
Area within which turbines are placed	Array area 11.3 km from land at its closest	Unchanged. The applicant states the "unchanged offshore development area" means "no material change to	None

Design element	2024 application	2026 further information	Effect on visual impact
		the bare-ground ZTV patterns” (Ch 29 Addendum, 29.3.1.1)	
Nearest turbine to the coast	13 km (Option 1); 12.3 km (Option 2)	12.4 km for both options (Ch 6 Addendum, 6.3.2)	Worse for Option 1: the nearest turbine is 600 m closer
Land from which turbines could be seen	62.1% (bare ground); 27.3% (allowing for buildings and trees)	64.7% and 28% (Ch 29 Addendum, 29.3.1.2)	Slightly worse
Skerries, Loughshinny and Ardgillan viewpoints	Major-moderate / Negative	Major-moderate / Negative (unchanged)	None
Night-time lighting	White flashing aviation lights assumed (red modelled)	Fixed red obstacle lighting requested by the Department of Defence	Potentially worse
Turbine-free gap around Rockabill	3 nautical miles	3.06 nautical miles (about 110 m more)	Negligible

The only viewpoint assessments the applicant has changed are four to the south (Portrane, Donabate, Malahide and Howth Harbour), where the array’s south-eastern edge has been trimmed (Ch 29 Addendum, 29.5.6.1). **Nothing has changed for Skerries, Loughshinny, Rush, Balbriggan, Ardgillan or Lambay.** The applicant’s own words confirm that the envelope of development is “very similar”.

The 2026 photomontages also do not show the array against Rockabill, the landmark against which local people and visitors would judge it, and their pale, hazy skies do not reflect the stark light of a clear morning. Seen from Skerries, the array would lie to the north-east, where the turbines would often be seen against the rising sun, as dark silhouettes (Figure 12).



Figure 12. Sunrise behind Rockabill, seen from Skerries. The NISA turbines would stand in this view (photo: Martin McNamara)

Our 2024 objection on visual impact therefore stands in full, and the further information gives the Commission no new reason to reach a different view.

5.11 WHAT WE ASK THE COMMISSION TO DO

1. **Find that the visual effects at Skerries, Loughshinny and Ardgillan are significant.** The applicant's own "Major-moderate / Negative / Long-term" findings meet the threshold of significance used in UK practice, the practice its method is based on. The effects at Rush, Balbriggan and Lambay are "Moderate" and close to that threshold.
2. **Treat the White Consultants research (2019 and 2020), the UK OESEA3 report and the Dutch White Paper as relevant evidence, not as mere "opinion".** Note that the applicant itself relies on UK guidance because Ireland has none.
3. **Give no weight to the unpublished Fáilte Ireland draft unless it is published and all participants have an opportunity to comment on it.** Ask the applicant to explain why it rates the tourism sensitivity of the north Fingal coast as "low".
4. **Require an independent check of the photomontage scaling, using Rockabill Lighthouse as a reference, for the 2026 layout with the nearest turbine at 12.4 km.** Require a photomontage from the south end of the South Strand, Skerries, that includes Rockabill Lighthouse.
5. **Assess the night-time effect of the fixed red obstacle lighting requested by the Department of Defence, viewed from Skerries and Loughshinny.** Do not simply accept that the 2024 conclusion "remains unchanged".
6. **Weigh the visual and tourism effects together with the bird effects in Sections 1 and 2 of our submission when considering alternatives.** Locating turbines of this size further offshore would reduce **both**.

7. **Take into account that there was no meaningful early public participation on the siting, height or number of turbines, contrary to the spirit of Article 6(4) of the EIA Directive and Article 6 of the Aarhus Convention. Give the applicant's claims about consultation little weight. Ask the applicant to identify any design change made in response to public comments on visual impact.**
8. **In line with our 2024 submission and Blue Ireland's, refuse permission for the development as proposed. If the Commission is minded to permit any development, no turbine of this height should be placed within about 22 km of the Fingal coast. That is the minimum distance now widely used in comparable countries, and still less than the distance at which White Consultants found the visual change from such turbines typically falls to "medium".**

Sources for Section 5

Applicant's documents (2026 further information):

- Addendum to EIAR Chapter 29, Seascape, Landscape and Visual (RFI Update, 2026): sections 29.3.1.1, 29.3.1.2, 29.5.6.1, 29.5.6.4; array viewpoint table; p. 29.20.
- Appendix A29.1 Addendum, Visual Impact Assessment at Representative Viewpoint Locations (2026): VP24 entry.
- Addendum to EIAR Chapter 33, Socio-Economic, Tourism and Recreation (2026): section 33.5.3.3; Table A33.5.
- Addendum to EIAR Chapter 6, Description of the Proposed Development – Offshore (2026): sections 6.2.1 and 6.3.2; Tables A6.1 and A6.2.
- Response to Submissions and Observations, section 5.7 (SWEG): pp. 5.7.1, 5.7.34–36 and 5.7.46.
- RFI Response Report, Item 13.

Applicant's 2024 EIAR: Chapter 29, section 29.2.2 (guidance relied on) and Table 29.7 (significance matrix and "Major or greater" threshold).

Other submissions:

- SWEG submission to ABP, 8 August 2024: Sections 3.2, 3.3 and 4.1.7.
- Blue Ireland Coalition, Part 1: pp. 56–60.

Published research and policy:

- White Consultants (2020). *Review and Update of Seascape and Visual Buffer Study for Offshore Wind Farms*. Final report, March 2020, for BEIS OESEA. Relevant parts: paras 3.30, 3.71, 5.11, 5.12, 5.30, 5.33, 6.8–6.9, 6.18–6.20, 6.26–6.28, 6.30, 6.32–6.35, 6.40–6.41, 6.47, 6.66–6.70, 13.3, 13.64, 13.68–13.70, 13.72, 13.75–13.76; Tables 2.1, 5.3, 5.4, 6.1, 6.4, 13.1 and 13.4.
- White, S., Michaels, S. and King, H. (2019). *Seascape and Visual Sensitivity to Offshore Wind Farms in Wales: Strategic Assessment and Guidance. Stage 3*. NRW Evidence Report No. 331, Natural Resources Wales. Relevant parts: Executive Summary 2.4; zone tables (visual susceptibility) for Zones 2–4, 6–8 and 10–13.
- DECC (2016). *UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3), Environmental Report*, p. 291 (as quoted in SWEG 2024).

- Netherlands Ministry of Infrastructure and the Environment and Ministry of Economic Affairs (2014). *White Paper on Offshore Wind Energy* (as quoted in SWEG 2024).
- Fingal Tourism Strategy 2024–2029.
- H. C. Sørensen (2021). *Middelgrunden Wind: land–sea interaction*. C4MSP presentation, VASAB. Original layout of 27 turbines in three rows changed to one line of 20 after “public protests”; 8,553 co-owners.
- Directive 2011/92/EU (as amended by 2014/52/EU), Article 6(4); Aarhus Convention (1998), Articles 6(4) and 6(8).
- Turbine details for the applicant’s comparison wind farms: Hollandse Kust Zuid (Wikipedia); Vesterhav Nord and Syd (Power Technology); Nysted (The Wind Power); Vattenfall pushes Danish nearshore wind farms farther offshore (Offshore Energy).

6 ONSHORE WORKS AT BREMORE AND BALBRIGGAN, AND CONCERNS RAISED IN GORMANSTON

We support the residents of Balbriggan, Bremore and Gormanston who raised concerns about the onshore works. Several of those concerns have not been properly answered.

6.1 THE GRID FACILITY AT BREMORE

The adopted Flemington Local Area Plan provides for up to 650 homes immediately south of the grid facility (RFI Item 13(e); RFI Response Report, pp. 77–80).

- **Visual impact.** The applicant itself rates the effect on the nearest planned homes as “Major”, which is significant on its own scale. It reduces this to “Major-moderate” only through tree planting that screens the 17 m buildings “over time” (RFI Response Report, p. 79). Until the trees mature, the effect remains significant. The facility would stand near the top of the rise at Bremore, which makes it more prominent. From the applicant’s drawings, SWEG members estimate its highest point at about 45 m above sea level, not counting lightning rods, compared with about 14 m above sea level for nearby Bremore Castle.
- **Mitigation not secured.** The improved building finish is “subject to final agreement with EirGrid and Fingal County Council”. The noise enclosures could be replaced, “alternatively”, by lower-noise units (Response to Submissions Report, section 3.1.4.2; RFI Response Report, p. 79).
- **Construction noise.** The applicant accepts “the potential for a significant construction phase noise impact” on the plan lands over about 24 months. It dismisses this because no housing application has yet been lodged (Response to Submissions Report, section 3.1.4.2; RFI Response Report, p. 80).
- **Shared access.** The Commission raised the adjoining entrances. The applicant simply “assumes” that the future housing access will be designed around the substation (RFI Response Report, p. 80).
- **Future expansion.** The Bremore substation is designed “to accommodate potential future connections from other projects” (Response to Submissions Report, section 3.1.2). The application does not say what this could mean for Bremore.

6.2 THE LANDFALL AT BREMORE

- **Archaeology.** Seven archaeological areas lie within the landfall site. In the worst case “all seven archaeological sites will be affected” (Response to Submissions Report, section 3.3.3.3). The mitigation strategy is still a “draft” (Appendix 25.4), further test trenching will happen only after consent, and the Bremore passage tombs lie close by.
- **Location not fixed.** The exact cable location within the development boundary is still undecided (Response to Submissions Report, section 3.3.3.1).

6.3 THE CABLE ROUTE THROUGH BALBRIGGAN

The applicant’s own figures (Response to Submissions Report, section 3.2.5.3) show:

- single-lane closures on the R132 south of Balbriggan for **99 weeks**;

- single-lane closures on the newly upgraded Harry Reynolds Road for **15 weeks**;
- a full closure of the R132 north of the town for **1–2 weeks**.

The applicant accepts these effects are “significant”. It has only partly met the Commission’s request (RFI Item 19(a)):

- 24-hour working “may now be considered”;
- the phasing plan remains “indicative” until a contractor is appointed;
- the Communication Management Plan was omitted from the application “due to an inadvertent oversight” (Response to Submissions Report, sections 3.2.5.4 and 4.2.3.5).

6.4 CONCERNS RAISED IN GORMANSTON

- **Bird surveys.** The applicant says breeding bird surveys took place between April and June. Its own table shows the 2024 surveys were carried out in July and early August (Response to Submissions Report, section 3.3.3.4). Its surveys recorded at most 91 curlew, while residents report flocks of over 1,000 near Cardy Rocks.
- **Public engagement.** A request for a public meeting in Gormanston was refused as coming from “one community member” (Response to Submissions Report, section 3.6.3.4). The Gormanston Community Association’s formal call for a public hearing was answered only by citing the statutory eight-week period (Response to Submissions Report, section 3.6.3.5).
- **Military range.** The Commission asked for confirmation after consulting the Irish Air Corps (RFI Item 17(a)). The applicant reports only a verbal acknowledgment from the Department of Defence. That meeting is dated May 2025 in the RFI Response Report (p. 86), June 2025 in the Response to Submissions Report (section 4.16) and 17 June 2025 in Appendix A1.2, which does not say how the consultation was carried out. No written confirmation from the Air Corps or the Department of Defence is provided.

6.5 WHAT WE ASK THE COMMISSION TO DO

1. Make the grid facility’s noise mitigation, screening and finish binding conditions, with noise limits at the Flemington plan boundary.
2. Require an assessment of construction noise on the planned homes, and a shared-access design agreed with Fingal County Council.
3. Require the archaeological mitigation strategy to be finalised before any decision, preserving the seven archaeological areas in place.
4. Set maximum road-closure durations in Balbriggan as conditions, with full reinstatement of the new cycle infrastructure.
5. Require breeding bird surveys at the landfall within the proper April–June period.

Sources for Section 6

- **Commission’s further information request** (10 April 2025): Items 13(e), 17(a) and 19.
- **RFI Response Report**: pp. 77–80 and 86.
- **Response to Submissions Report**: sections 3.1.2, 3.1.4.2, 3.2.5.3–3.2.5.4, 3.3.3.1, 3.3.3.3, 3.3.3.4, 3.6.3.4–3.6.3.5, 4.2.3.5 and 4.16.

- **2024 EIAR:** Appendix 25.4.

7 DECOMMISSIONING, REMOVAL AND FINANCIAL SECURITY

7.1 WHAT WE ASKED FOR IN 2024

In our 2024 submission (pp. 72–74), we said that the applicant’s Rehabilitation Schedule lacked specific detail, a timetable and a cost estimate. We asked that, before any permission is granted, the applicant should:

- present a credible estimate of the full cost of removing the wind farm and restoring the seabed;
- put in place a sufficient, secured fund for doing so.

We pointed to countries that require a dedicated dismantling fund and a time limit for removal after operation ends.

7.2 THE APPLICANT’S REPLY DOES NOT ANSWER THESE POINTS

The applicant’s reply (Response to Submissions Report, section 5.7.3.4.2.3) gives no new information.

- **No cost estimate.** The reply contains no figure, range or method for estimating the cost of decommissioning. It states only that Condition 21 of the Maritime Area Consent requires “a Rehabilitation Bond to the state to reflect the estimated costs of rehabilitation”. The size of that bond, how it is calculated, when it is lodged and whether it is protected if the operator fails are not stated. None of it is before the Commission.
- **No plan until after permission.** The details will be added to the Rehabilitation Schedule only “at least three months prior to construction”. The Schedule is described as “a live document”. In other words, the public and the Commission are asked to approve the project without seeing how it will be removed.
- **No firm commitment to decommission.** The applicant says that at the end of the wind farm’s life “a decision will be made regarding decommissioning”. It says it is “currently considering” removing infrastructure to 1 m below the seabed, and that the work will follow “best practices at that point of time”.
- **No time limit.** The reply does not respond to our point about a time limit for removal after operation ends.
- **Questions about authorisations deferred.** Our question about which authorisations will be needed is answered only with “relevant authorisations at that point of time”.

7.3 WHAT THE MARITIME AREA CONSENT ACTUALLY PROVIDES

The applicant relies on the Maritime Area Consent. We have read it (Appendix 7.1 of the application), and it offers less protection than the reply suggests:

- **The bond amount is a private matter.** The amount is “agreed between the Grantor and the Holder” (Condition 21.4). It is not published and is not before the Commission. It only has to be posted “not later than 60 days prior to the commencement of any works” (Condition 21.2).

- **The Consent’s own Rehabilitation Schedule is empty.** Appendix 2 of the Consent, headed “Rehabilitation Schedule”, contains no content. The Consent says the Schedule is “to be attached to this Consent following the grant of Development Permission” (Condition 20.1).
- **Removal can wait until 2067.** The Consent lasts 45 years from December 2022 (Condition 3.2.1). The obligation is to rehabilitate “before the expiration of this Consent” (Condition 20.1). The wind farm is designed to operate for 35 years. Nothing in the Consent requires removal soon after operation ends.
- **The Commission’s permission comes first.** The bond condition is expressly “subject to the requirements of any Development Permission” (Condition 21.1). The application for permission must include a Rehabilitation Schedule (Condition 5.1, referring to section 95 of the Maritime Area Planning Act 2021). The Commission is therefore the body that can, and in our view should, fix the essential terms of decommissioning and its funding now.

7.4 THE FURTHER INFORMATION SHOWS THAT MUCH OF THE WIND FARM WILL STAY IN THE SEA

The applicant’s updated project description (Addendum to EIAR Chapter 6, section 6.11.2) states that:

- the new suction-bucket foundations will be **cut 1–2 m below the seabed and left in place**. It says “it is not thought to be reasonably practicable to remove entire piles or suction buckets from the seabed”;
- **“any scour protection will be left in situ”**. That is the rock armour around each foundation: about **37 hectares** of rock for Option 1 (see Section 2.1.7).

Suction-bucket foundations can be removed whole by reversing the suction process. In 2015 the suction-bucket foundation of a measuring mast at the Horns Rev 2 wind farm in Denmark was “completely removed from the site by reversing the suction process”, leaving no visible mark on the seabed (Ziton; Recharge, 13 July 2015). The applicant has therefore chosen a removable foundation but does not commit to removing it.

This also sits uneasily with the applicant’s statement elsewhere that it is “considering that all installed infrastructure to 1m below the seabed will be removed” (Response to Submissions Report, section 5.7.3.4.2.3).

7.5 WHY THIS MATTERS NOW

The wind farm is proposed for 35 years, inside an SPA and beside Rockabill. If the operator cannot or will not pay for removal at the end, the cost and the environmental risk fall on the State and on the local community. The only time to secure removal and its funding is now, through conditions of any permission. Financial security for reinstatement is commonly required as a planning condition for onshore wind farms in Ireland. There is no reason a project of this scale at sea should be treated more leniently. The French State’s 2026 scientific assessment found that knowledge about decommissioning “remains largely insufficient, even though many wind farms should reach the end

of their life in the coming decades”.⁷³ That uncertainty is a further reason to secure removal and its funding now.

7.6 WHAT WE ASK THE COMMISSION TO DO

If the Commission is minded to grant permission, despite our objections in Sections 1 to 6, we ask that it attach conditions:

1. **Cost estimate.** Require a published, independently verified estimate of the full cost of decommissioning and seabed restoration, to be reviewed at regular intervals.
2. **Financial security.** Require financial security for the full cost, such as a bond or escrow fund. It should be index-linked, held independently of the operator, and in place before construction starts.
3. **Duration of permission.** Limit the permission to the stated operational life. Require full decommissioning at the end of that life unless a new consent is granted.
4. **Time limit for removal.** Set a fixed period for removal after operation ends; we suggest two years.
5. **Full removal of foundations and rock armour.** Require removal of the suction-bucket foundations and the rock armour. Leaving any of it in place should be allowed only where the Commission, or the relevant authority at the time, is satisfied on environmental grounds that leaving it would be better for the SPA.
6. **Blades and waste.** Require a decommissioning waste plan that rules out landfill and incineration of turbine blades.

Sources for Section 7

- **SWEG submission to ABP, 8 August 2024**, pp. 72–74.
- **Response to Submissions Report (2026)**, section 5.7.3.4.2.3.
- **Addendum to EIAR Chapter 6 (2026)**, sections 6.5.4 and 6.11.2.
- **Horns Rev 2 removal:** Zitón, “Mono Bucket foundation successfully decommissioned”; Recharge, 13 July 2015.
- **Maritime Area Consent 2022-MAC-005** (application Appendix 7.1): Conditions 3.2.1, 5.1, 20.1, 21.1, 21.2 and 21.4, and Appendix 2.

⁷³ Ifremer and CNRS (2026), Résumé EScO, p. 9. https://www.cnrs.fr/sites/default/files/page/2026-06/Resume_ESCo_Eoliennes_mer_biodiversite>Ifremer_CNRS.pdf

8 OTHER ERRORS, OMISSIONS AND INCONSISTENCIES

The sections above deal with errors in the applicant's information on birds (Section 2.1), marine life (Section 3.1), cumulative effects (Section 4) and visual effects (Section 5). We list here only the most serious remaining points.

8.1 INFORMATION THE COMMISSION ASKED FOR IS LEFT OUT, WHILE THE APPLICANT SAYS IT HAS COMPLIED

The Commission asked for the locations of all turbines, substations and cables "including scour protection" and "including scour and cable protection", in GIS form (RFI Item 1(g) and Appendix A to the request). The applicant states that "scour protection and cable protection locations and extents are not included in this dataset". In the same reply it states that "the data files submitted comply with the requirements of Appendix A" of the request (RFI Response Report, pp. 4–5). They do not. Scour protection is the rock armour that nearly doubles the permanent seabed loss (Section 3.2.2).

8.2 BATS ROOST ON ROCKABILL, BUT THE COMMISSION'S QUESTIONS ABOUT THEM ARE NOT ANSWERED

The Commission, citing the Development Applications Unit, noted evidence of Leisler's bats at Rockabill, about 5–6 km from the array, and asked for the buildings there to be surveyed (RFI Item 15(a)). The surveys **confirmed a Leisler's bat day roost** on Rockabill. The applicant nonetheless concludes that no significant effects arise (RFI Response Report, pp. 83–85). In particular:

- the Commission asked the applicant to "reconsider the tidal range and its impact on the available gap" between the blades and the sea (Item 15(e)). The reply does not mention the tidal range at all. The applicant's own collision model puts that gap at 34.4 m at high tide, and 29.4 m for eight turbines in Option 2 (Section 2.1.1.7);
- the Commission asked for mitigation such as curtailment or feathering of blades to be examined (Item 15(f)). None is proposed;
- the Commission asked for lighting effects on bats to be assessed with lux contours (Item 15(c)). None were produced, on the basis that "lux-based footprint modelling is therefore not applicable".

8.3 SAFE NAVIGATION THROUGH THE ROCKABILL GAP RESTS ON THE APPLICANT'S OWN ACCOUNT OF A MEETING

The Department of Transport's Marine Survey Office (MSO) told the Commission that the layout did not comply with navigation guidance and "strongly disagrees" with the applicant's account of the risk to shipping, fishing vessels and recreational craft near the south-eastern corner and the Rockabill Gap (RFI Item 2(b)). The Rockabill Gap is used by fishing, sailing and leisure boats from Skerries and the Fingal harbours.

The applicant's reply is that the MSO confirmed "their contentment and acceptance of the new proposed layouts" at a meeting in March 2026 (RFI Response Report, p. 5). The Navigational Risk Assessment records the MSO's position only in the applicant's own summaries of meetings held on 28 May 2025, 23 September 2025 and 24 March 2026 (Appendix A17.1, section 4, consultation table). According to the applicant's summary of the September 2025 meeting, the MSO's

navigational concerns “were allayed significantly” because no observations had been raised by those acting on behalf of Bremore Port. For the Irish Coast Guard, the applicant supplies a written response (Appendix A17.5). No letter or other written statement from the MSO is provided. The reply also states that Irish guidance has since been published, but that the navigational risk assessment “is still informed by” the UK guidance, MGN 654. The gap between Rockabill and the turbines was widened by only 0.06 nautical miles, about 110 m.

What we ask the Commission to do

1. Require the applicant to provide the scour and cable protection data it was asked for.
2. Require the applicant to answer Items 15(c), 15(e) and 15(f) on bats properly, taking account of the Rockabill roost and the gap below the blades at high tide.
3. Obtain the Marine Survey Office’s own written confirmation that the layout is acceptable, assessed against the current Irish guidance.

9 CONCLUDING STATEMENT

9.1 As a community group, SWEG fully supports offshore renewable energy as a vital part of the response to the climate crisis. But such infrastructure must be appropriately sited. Green energy targets should not be met at the cost of irreplaceable, legally protected biodiversity. We want Ireland to meet its climate targets without causing lasting harm to the seabirds, marine life and coastline of north Fingal.

9.2 Rockabill is a unique marine sanctuary and Europe's most important breeding colony of the roseate tern. This fragile, highly localised ecosystem cannot simply be replicated elsewhere, and the risk to it cannot be engineered away by mitigation designed by the developer. The EU co-funded the Roseate Tern LIFE project to protect this species, and the project's After-LIFE Conservation Plan names NISA specifically, recording that it requires "resources for major casework urgently" (Section 2.2.1).

9.3 The further information is extensive, and we acknowledge the work that has gone into it. But based on the applicant's own figures it shows larger risks to Rockabill's roseate terns and to the kittiwakes and guillemots of the North-west Irish Sea SPA than the original application did. It does not provide a complete assessment of the combined effects of the Phase One wind farms, and its own viewpoint assessment confirms major-moderate visual effects on our coast. The design changes have not reduced these effects, and in some respects have increased them. The further information does not resolve the fundamental incompatibility between a development of this scale and this location.

9.4 SWEG therefore respectfully asks the Commission to:

1. **refuse permission**, because it cannot be certain, beyond reasonable scientific doubt, that the project will not adversely affect the integrity of the North-west Irish Sea SPA, the Rockabill SPA, the Lambay Island SPA and the Howth Head Coast SPA;
2. **at the very least, make no decision** until the gaps and errors we have identified, in particular in the in-combination assessment, have been corrected and the public has been able to comment;
3. **if it is nonetheless minded to grant permission, limit the project to 500 MW** by removing the turbines closest to Rockabill and moving the array into the north-eastern part of the Maritime Area Consent area, and attach the conditions we have requested in Sections 2 to 7, including on the location of the array, construction timing, monitoring, pollution, decommissioning and financial security.

9.5 We thank the Commission for the opportunity to make this submission.

Signed on behalf of Sustainable Windfarm Environmental Group (SWEG):

Shane Holland, Chairman

Sandra O'Sullivan, Director

Teddy Otto, Treasurer

Sustainable Windfarm Environmental Group, Maypark, 46 Church Street, Skerries, Co. Dublin, K34 H793

20 October 2026

APPENDIX: LETTER FROM MS MARIE LOUISE HEFFERNAN, 29 SEPTEMBER 2026

ASTER ENVIRONMENTAL CONSULTANTS LTD



29/09/26

Dear Commissioners,

I write on behalf of SWEG (Sustainable Windfarm Environmental Group) in response to the significant additional information submitted for the North Irish Sea Array (NISA) offshore wind farm.

We welcome the additional information. However, the Addendum to the Natura Impact Statement still raises serious questions about displacement, collision mortality and cumulative effects on protected bird populations.

Guillemot displacement and Lambay Island SPA

NISA's preferred assessment assumes 50% displacement and 1% consequent mortality. NatureScot Guidance Note 8 (2023, Table 1) advises assessing guillemots and other auks at 60% displacement, with 3% and 5% mortality during breeding and 1% and 3% outside breeding. While Scottish guidance is not binding in Ireland, it is a relevant scientific benchmark. NISA has calculated scenarios using these rates, and the Commission must examine the evidence before discounting their results.

NISA also favours an April–June guillemot breeding season over the March–July Furness approach. It argues that many birds present in July are post-breeding dispersers. The choice materially changes the estimated number of birds exposed: Table A5.16 gives approximately 988 guillemots in the breeding period under NISA's approach, compared with 16,318 under the Furness approach. Under the higher NatureScot mortality scenario, estimated annual guillemot deaths in the project footprint and 2 km buffer are 409 and 827, respectively.

For Lambay Island SPA, NISA's population viability analysis predicts a guillemot population 0.898% smaller after 35 years from NISA alone and 6.321% smaller cumulatively under its preferred rates and seasons. Under the higher NatureScot rates and Furness seasons, the corresponding predictions are 16.185% from NISA alone and 38.048% cumulatively (Addendum, Table A6.36). These are results from the developer's own assessment.

The conservation objective is to maintain favourable conservation condition, including no significant decline in breeding population size. The Commission should examine whether the evidence justifies both the lower mortality rate and the shorter breeding season. It must explain how an adverse effect on Lambay Island SPA can be excluded across the outcomes NISA has modelled. The possibility of density-dependent recovery, discussed but not modelled in the addendum, should not be used to dismiss those outcomes without evidence specific to the colony.

Howth Head Coast SPA kittiwakes

The conservation objective for kittiwakes at Howth Head Coast SPA is to restore favourable condition, including a breeding population trend that is stable or increasing. The assessment must therefore address whether cumulative additional mortality is compatible with recovery.

The addendum predicts approximately 0.3 breeding adult collision deaths annually from NISA alone, but 9.3 annually in combination with other projects. Its population viability analysis predicts a population 0.362% smaller after 35 years from NISA alone and 10.302% smaller cumulatively (Tables A6.32–A6.33). The Commission should explain how the cumulative prediction is compatible with the SPA’s restore objective and a conclusion of no adverse effect on integrity.

Rockabill SPA terns

The addendum predicts 0.4 common tern and 0.7 roseate tern breeding adult collisions annually attributable to Rockabill SPA (Tables A5.48–A5.49). The roseate tern estimate is ten times the 0.07 given in the original NIS, and its stated uncertainty range is 0–3.8.

Rockabill supports an internationally important roseate tern population. The Commission should examine why the estimate changed, assess any cumulative losses, and explain how the available evidence provides sufficient certainty about maintaining the breeding population. The addendum does not present a population viability analysis for the Rockabill tern colony. Flights between Rockabill and feeding areas, and potential barriers to those movements, also require consideration.

Protected populations and precaution

The addendum states that an increase exceeding 1% of annual baseline mortality triggers further population analysis (p. 675). Once undertaken, the results of that analysis must be addressed against each SPA’s conservation objectives. Wider regional population figures may provide ecological context, but cannot replace an assessment of the defined populations for which the SPAs are protected.

Scientific doubt cannot be resolved simply by selecting the assumptions that yield the lowest effects and calling alternative results excessively precautionary. The Commission should give evidence-based reasons for accepting or rejecting the scenarios NISA has presented.

We welcome the additional migratory bird surveys. The Commission should also consider how the revised assessment deals with movement at night, in poor weather and during short periods of passage, which daytime aerial surveys may miss.

Conclusion

The addendum’s own results raise reasonable scientific doubt about whether effects from NISA alone and in combination with other projects are compatible with maintaining the Lambay Island guillemot population and restoring the Howth Head Coast kittiwake population.

We ask the Commission to address the alternative assumptions and population viability results expressly. Unless the doubt is resolved on the evidence, it should not conclude that adverse effects on the integrity of the affected SPAs can be excluded.

Yours faithfully,

Marie Louise Heffernan, CEnv, MCIEEM, MSc



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