Aberdeen Airport

Aberdeen International Airport

Aberdeen International Airport Limited
Dyce, Aberdeen
AB21 7DU
Scotland

T: +44 (0)870 040 0006
W: aberdeenairport.com

FAO Rosanne Dinsdale
Consenting and Licensing Casework Manager
Licensing Operations Team
Marine Directorate

Via Email

ABZ Ref: ABZ3269

2nd September 2024

Dear Rosanne

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN

I refer to your consultation request received in this office on 12th July 2024.

The proposed development has been examined from an aerodrome safeguarding perspective and could conflict with safeguarding criteria. Accordingly, a more detailed assessment requires to be undertaken regarding the potential impact on Aberdeen Airport.

We, therefore, submit a holding objection until we are able to advise you of the results of our investigations.

You should note that where a Planning Authority proposes to grant permission against the advice of Aberdeen Airport, it shall notify Aberdeen Airport, the Civil Aviation Authority and the Scottish Ministers as per Circular 2/2003: Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) (Scotland) Direction 2003.

Yours Sincerely

Redacted

Kirsteen MacDonald

Safeguarding Manager
Aberdeen Airport
Redacted
abzsafeguard@aiairport.com

From: #ABZ Safeguarding
To: MD Marine Renewables
Subject: RE: Ossian Offshore WInd Farm FAO Rosanne Dinsdale
Date: 25 November 2024 09:11:01
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
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image376852.png
image898211.png

Hi Iain
Apologies for the delay. I can confirm there is a radar impact which affects Aberdeen Airport operations. We are working with NATS to establish if this can be mitigated.
Kind regards
Kirsteen

Aberdeen International Airport EST. 1934
#ABZ Safeguarding
abzsafeguard@aiairport.com
www.aberdeenairport.com
Aberdeen International Airport Limited, Dyce, Aberdeen, AB21 7DU

2023 UK NTA NATIONAL TRANSPORT AWARDS 2023
WINNER: TRANSPORT HUB OF THE YEAR 2023

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: Tuesday, September 10, 2024 1:43 PM
To: #ABZ Safeguarding <abzsafeguard@aiairport.com>
Cc: Rosanne.Dinsdale@gov.scot
Subject: RE: Ossian Offshore WInd Farm FAO Rosanne Dinsdale

Good afternoon,
Thank you for responding to the above consultation, MD-LOT acknowledge receipt.
If possible, could you please advise when your investigations will be complete and an outcome will be made available to MD-LOT?
Kind Regards
Iain

Iain MacDonald
Marine Licensing & Consenting Casework Officer, Licensing Operations Team, Marine Directorate
Scottish Government | Marine Laboratory | Aberdeen | AB11 9DB
M: Redacted | E: Iain.Macdonald3@gov.scot
The Scottish Government

To see how we use your personal data, please view our
Marine licensing and consenting: privacy notice - gov.scot (www.gov.scot)

From: #ABZ Safeguarding <abzsafeguard@aiairport.com>
Sent: Monday, September 2, 2024 10:35 AM
To: MD Marine Renewables <MD.MarineRenewables@gov.scot>
Subject: Ossian Offshore WInd Farm FAO Rosanne Dinsdale

Dear Rosanne

Please see attached

Kind regards

Kirsteen

#ABZ Safeguarding
abzsafeguard@aiairport.com
www.aberdeenairport.com
Aberdeen International Airport Limited, Dyce, Aberdeen, AB21 7DU

Aberdeenshire Council

Our Ref: ENQ/2024/1032
Your Ref:

Ask for: Stuart Newlands
Tel: 01467 539834
Email: stuart.newlands@aberdeenshire.gov.uk

Marine Directorate Licensing Operations Team
Scottish Government
Victoria Quay
Edinburgh
EH6 6QQ

1 October 2024

Dear Sir/Madam,

Marine Licence Consultation to Construct and Operate the Ossian Offshore Wind Farm at Ossian Offshore Wind Farm, Approximately 80km South East Of Aberdeen

Thank you for the above consultation received on 12th July 2024. Due to the distance noted between the coastline belonging to Aberdeenshire and the proposed development site, Aberdeenshire Council offer no objection or comment on this proposed development at this time.

Yours faithfully

Redacted

Paul Macari
Head of Planning and Economy

Angus Council

From:	Stephanie G Porter
To:	MD Marine Renewables
Cc:	Jill F Paterson; Iain Macdonald; Rosanne Dinsdale
Subject:	RE: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Local Authorities - Response Requested by 12 November 2024 - AC REF: 24/00444/S36
Date:	23 July 2024 11:44:10

Dear Sir/Madam

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990

MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80KM SOUTHEAST OF ABERDEEN.

I write in relation the above consultation requests.

Having reviewed the submitted information, Angus Council note that the proposed offshore turbines would have a maximum blade tip height of up to 399m above Lowest Astronomical Tide. This is significantly taller than the turbines approved as part of the Seagreen OWT (204m) project which is located between the Angus shoreline and the proposed development. However, it is noted that the proposal is of a similar in height to the turbines (no greater than 390m) forming part of the incipient Morven OWT development which is located between Seagreen and Ossian.

Although the distance from land and other intervening developments will likely reduce impacts associated with the proposal, the potential maximum blade tip height of 399m may lead to seascape and visual impacts which should be assessed through visualisations. Upon review of the submitted documentation it doesn't appear as though visualisations have been provided. Angus Council would encourage the provision of visualisations and would welcome the opportunity to review and provide further comment upon these. Consistent with the feedback provided in relation to the Morven OWT scoping request Angus Council would suggest a viewpoint from the Angus shoreline (near Ethie Haven or Dunninald Castle) be included.

I trust the above proves helpful but if you have any further questions, please do not hesitate to contact me.

Kind regards

Stephanie Porter | Team Leader – Development Standards | Planning & Sustainable Growth | Angus Council | Angus House | Orchardbank Business Park, Forfar, DD8 1AN | (01307 492378)

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: Friday, July 12, 2024 10:22 AM
To: MD.MarineRenewables@gov.scot
Cc: Iain.Macdonald3@gov.scot; Rosanne.Dinsdale@gov.scot
Subject: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Local Authorities - Response Requested by 12 November 2024

Dear Sir/Madam

ELECTRICITY ACT 1989
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APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

On 28 June 2024, Ossian Offshore Wind Farm Limited ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate the Ossian Offshore Wind Farm at a site off the coast of Aberdeen. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application. In addition, the Applicant has provided a Report to Inform Appropriate Assessment, HRA Derogation Case and Compensation Plan.

Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from: https://marine.gov.scot/node/23264

There are three application pages, as follows:

- Section 36 Consent – Construction and Operation of Generating Station – Ossian Offshore Wind Farm
- Marine Licence – Construction and Operation of Generating Station – Ossian Offshore Wind Farm – 00010861
- Marine Licence – Transmission Infrastructure – Ossian Offshore Wind Farm - 00010862

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **12 November 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.

I would be grateful if you could please confirm whether you anticipate that this

application will be determined by under the Scheme of Delegation or by the planning committee. If a report is to be presented to the planning committee, I would be grateful if you could also please confirm the date on which you intend to present the report and recommendation to the committee.

Under Regulation 15 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, "***if an application for Electricity Act consent is made and any documents relating to it are, or have been sent, to a planning authority… the planning authority must take steps to ensure that any such documents are placed on Part I of the register***." The documents should be placed on the register until such time as the planning authority receives a copy of the decision notice in respect of the application. I would be grateful if you could please arrange for this to be done.

Kind regards,
Rosanne

Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot

Department of Agriculture, Environment and Rural Affairs

From:	DAERA Marine Information Requests
To:	MD Marine Renewables
Subject:	RE: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024
Date:	04 September 2024 15:18:59
Attachments:	image001.png

Hi
Apologies for the delayed response. This is a nil return from NI MFD. Thanks
Eamonn

Eamonn Brady | Marine Plan Team | Department for Agriculture, Environment and Rural Affairs
Ground Floor | Clare House | 303 Airport Road West | Belfast | BT3 9ED

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: Friday, July 12, 2024 10:23 AM
To: MD.MarineRenewables@gov.scot
Cc: Iain.Macdonald3@gov.scot; Rosanne.Dinsdale@gov.scot
Subject: CM: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024

Dear Sir/Madam
ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
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If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **3 September 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-

LOT will assume a ‘nil return’.
Kind regards,
Rosanne
Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot

Dundee City Council

From:	Alistair Hilton
To:	MD Marine Renewables
Subject:	RE: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Local Authorities - Response Requested by 12 November 2024
Date:	06 November 2024 14:27:39

Dear Sirs,
Thank you for sending details of this consent application. I can advise that Dundee City Council has no comment on the proposals.

Regards,

Alistair Hilton
Principal Planning Officer (Planning & Economic Development) at City Development

E alistair.hilton@dundeecity.gov.uk
P 01382 433760
W www.dundeecity.gov.uk
A Dundee House, 50 North Lindsay Street, DUNDEE, DD1 1QE

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: 12 July 2024 10:21
To: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Cc: Iain.Macdonald3@gov.scot <Iain.Macdonald3@gov.scot>; Rosanne.Dinsdale@gov.scot <Rosanne.Dinsdale@gov.scot>
Subject: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Local Authorities - Response Requested by 12 November 2024

Dear Sir/Madam
ELECTRICITY ACT 1989
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Offshore Wind Farm
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If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **12 November 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.

I would be grateful if you could please confirm whether you anticipate that this application will be determined by under the Scheme of Delegation or by the planning committee. If a report is to be presented to the planning committee, I would be grateful if you could also please confirm the date on which you intend to present the report and recommendation to the committee.

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Kind regards,

Rosanne

Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot

Dundee Recycling App

East Lothian Council

APPENDIX 1

Marine Scotland application (no reference given)

ELC Reference No.	24/00006/SGC
Proposal	Section 36 application to construct and operate an offshore generating station comprising a maximum of 265 floating wind turbines, either six large or 3 large and up to 12 small offshore sub-station platforms, and inter-array cables'
Location	An area of approximately 859 km2, 80km south east of Aberdeen and some 140km east of East Lothian to site boundary, within the North Sea
Applicant	Ossian Offshore Wind Farm Limited
Ward	Offshore – not applicable

MARINE SCOTLAND CONSULTATION: PROPOSED OSSIAN OFFSHORE WINDFARM, EAST LOTHIAN COUNCIL'S RESPONSE

BACKGROUND

1. An application has been made to Marine Scotland under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore windfarm known as Ossian. In the case of S36 applications planning authorities are a consultee to the application process and not the Consenting Authority. The applicant is also seeking two Marine Licences for these works.

2. Marine Scotland issued a Scoping Opinion on 14 June 2023 for this proposal. The applicant has submitted an Environmental Impact Assessment Report (EIAR) with this application.

PROPOSAL

3. The proposed development would be located in the North Sea, some 140 km from East Lothian, and generally to its northeast. The proposal is for an array of up to 265 floating 3-bladed wind turbines, with a maximum height above Lowest Astronomical Tide to blade tip of 399m, and 224m to hub with a rotor diameter between 236m and 350m. The turbines will be moored and anchored to the seabed, with piling potentially used depending on the method chosen. There will be either 6 large or 3 large and two small offshore substation platforms, and inter-array cabling. The proposal will require aviation lighting of perimeter turbines, of a maximum 2000 candela.

4. Grid connection is not included in the application. In March 2024 the National Grid Electricity System Operator published 'Beyond 2030' setting out their recommendations to achieve a decarbonised electricity network. This notes that Ossian will be offered two grid connection locations, both of which are in Lincolnshire. The applicant confirms this is where landfall infrastructure is intended to connect to the national grid in the covering letter to their application. The applicant states (EIA chapter 1 para 1.3) that they will seek consent for these works separately. No grid connection works are therefore expected in East Lothian as part of this project.

5. The applicant sets out a long list of ports which would be used for construction and operation. None of these are in East Lothian, the closest candidates being at Methil, Rosyth and Leith.

SCHEDULE 9 OF THE ELECTRICITY ACT 1989

6. The application is made under the Electricity Act 1989. This Act requires that in formulating relevant proposals, a licence holder shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna, geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest. The licence holder has a duty to do what they reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.

7. In considering such proposals, Scottish Ministers must have regard to the desirability of these matters, and the extent to which the applicant has complied with their duty of mitigation. The applicant must also avoid causing injuries to fisheries or fish stocks.

THE DEVELOPMENT PLAN

8. As the application is not made under the Planning Act the Development Plan does not have the primacy it normally would for planning decisions. The Development Plan however does give the Council's settled approach to some of the matters set out in Schedule 9 of the Electricity Act. In determining applications under the Electricity Act practice has emerged of the decision maker taking the development plan for the area into account in reaching their decision. The development plan for East Lothian consists of National Planning Framework 4 and the adopted East Lothian Local Development Plan 2018.

National Planning Framework 4

9. National Planning Framework 4 ("NPF4") is Scotland's national spatial strategy for Scotland. It sets out spatial principles, regional priorities, national developments and national planning policy. Relevant NPF4 Policies are:

    1 - Tackling the climate and nature crises
    2 - Climate mitigation and adaptation

3 - Biodiversity
4 - Natural places
11 - Energy
23 – Health and Safety
25 – Community Wealth Building

10. NPF4 identifies 18 National Developments that are significant developments of national importance. National Development 3 of NPF4 (Strategic Renewable Electricity Generation and Transmission Infrastructure) supports renewable electricity generation, repowering, and expansion of the electricity grid, and covers all of Scotland.

Local Development Plan

11. The following policies contained in the Local Development Plan ("LDP") are relevant

WD1 Wind Farms
WD3 (All Wind Turbines)
WD6 (Decommissioning and Site Restoration
NH1 (Internationally Designated Sites)
NH4 (European Protected Species)
NH9 Water Environment
NH13 (Noise)

REPRESENTATIONS

12. Marine Scotland carries out consultation with such environmental bodies as it considers appropriate.

13. Members of the public may make representation to Marine Scotland. They may also make comment to East Lothian Council as a consultee in this process, either via email, in writing or by submission to planning online. No representations have been received from the Council in respect of this application.

COMMUNITY COUNCIL COMMENTS

14. The application is outwith East Lothian Council area with no direct impact on the area. No community councils were consulted.

PRINCIPLE OF DEVELOPMENT

15. The principle of need for a development of this nature is established in NPF4. National Development 3 Strategic Renewable Energy Generation and Transmission Infrastructure supports electricity generation throughout Scotland. The classes of development for National Development 3 include 'off shore electricity generation, including electricity storage, from renewables exceeding 50MW capacity". This proposal therefore is included. NPF4 states that national developments are significant developments of national importance. The statement of need, which does not need to be re-visited in

every proposal, is given in NPF4. It includes that additional generation from renewables is fundamental to achieving a net zero economy.

16. Support in principle for renewable energy generation proposals is also found in NPF4 Policy 11 and ELLDP Policy SEH1: Sustainable Energy and Heat.

CLIMATE

17. East Lothian Council declared a Climate Emergency in 2019.

18. NPF4 Policy 1 states that when considering all development proposals significant weight will be given to the global climate and nature crises. NPF4 Policy 2a requires that proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible.

19. The Scottish Governments Climate Change Plan sets out the Scottish Government's pathway to achieve the ambitious targets set by the Climate Change (Scotland) Act 2009, as amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, and the commitment to end Scotland's contribution to climate change by 2045. Scotland's renewable electricity generation has grown rapidly over the last twenty years, and a large contribution to achieving the commitment set out in the plan will be made by the increased decarbonisation of our electricity system. The Climate Change Plan notes operating a zero-carbon electricity system will mean finding new ways to provide a range of technical services and qualities currently provided by fossil fuel and nuclear generation. Wind turbine development is one technology which helps achieve these goals.

Overall carbon balance

20. Greenhouse gas emissions from the construction of the windfarm are estimated at 9,479,984 tCO2e. Emissions from operation and maintenance, over its 35 year expected lifespan, are 1,488,172 tCO2e. The decommissioning phase is more difficult to estimate but is thought to add a further 385,615 tCO2e. As a comparison, East Lothian as a whole emitted 1,259,700 tonnes annually in 2022 (this includes emissions from industry, which are a bit under half of the total). The emissions associated with grid connection have not been included, despite being part of the project as a whole. This should be taken into account when considering the overall carbon balance of the scheme.

21. The emissions avoided by the scheme cannot be predicted with certainty, as the future mix of generating sources of the grid cannot be known. In addition the wind resource may be different over the scheme's lifetime than expected. The EIA reports (chapter 17, para 124) that the long run marginal emissions avoided associated with the operation and maintenance phase would be 882,416 tCO2e. Against the current UK grid average, avoided emissions would be 69,878,823 tCO2e. The difference in scale is partly due to the long run marginal calculation assuming no unabated fossil fuel use post-2035, which may not come to pass.

22. The EIAR considers the effect to be beneficial, and therefore that no mitigation or monitoring is necessary. However, the main source of emissions is the construction phase, which is likely to take place close to the peak of emissions globally. Table 17.21 shows the emissions from the project are 0.16% of the UKs carbon budget for 2028-2032, and 0.7% from 2033-2037. This is not negligible, even if as stated in the EIAR that whole lifecycle and combined emissions are likely to overstate its emissions. As the IPCC Special Report on Global Warming of 1.5 degrees Centigrade notes, "Every bit of warming matters, every year matters, every choice matters".

23. Although the proposal is expected to avoid greenhouse gas emissions, especially in comparison to fossil fuel generation, it still emits greenhouse gas emissions in itself especially in manufacture and construction. Emissions should be minimised as far as possible in line with NPF4 Policy 2a in through design and methods of construction.

24. At its meeting on Tuesday 3 September 2019 the Council's Planning Committee decided that a condition requiring a developer to submit for the approval of the Planning Authority a report on the actions to be taken to reduce the carbon emissions from the completed development should be imposed on all relevant applications.

25. Therefore, the Council would recommend that greenhouse gas emissions are fully taken into account and mitigated at every stage, consistent with the requirements of Policy 1 and 2 of NPF4 and supported by Policy SEH2 of the ELLDP.

BIODIVERSITY

26. East Lothian Council declared a Nature Emergency in October 2023. Both the development plan and Schedule 9 to the Electricity Act contain provision protecting biodiversity. In addition NP4 Policy 3 seeks biodiversity enhancement, with support for development proposals for national development only where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks, so they are in a demonstrably better state than without intervention, including future management. NPF4 Policy 3biii requires that assessment of potential negative effects which should be mitigated prior to identifying enhancement, and then 3biv requires provision of significant biodiversity enhancement is provided *in addition to* mitigation.

27. The interest of European Sites and Sites of Special Scientific Interest are protected both by policy and legislation, as are some individual species including marine mammals.

28. The EIAR looked at ornithology and marine mammals. The impacts on ornithology were
    - temporary habitat loss and disturbance;
    - indirect impacts from construction/decommissioning noise;
    - indirect impacts from UXO clearance;
    - disturbance and displacement from the physical presence of wind turbines and maintenance activities;
    - barrier to movement;
    - collision with wind turbines;

- changes to prey availability; and
- entanglement.

29. Overall the assessment concluded there would be no significant effects arising from the Array alone though minor adverse effects on some species were identified.

30. Cumulative effects assessed included:
    - disturbance and displacement from the physical presence of wind turbines and maintenance activities; and
    - collision with wind turbines.

    Overall it was found that there will be significant cumulative effects on kittiwake arising from the combined displacement and collision with wind turbines when Berwick Bank is included. The Report to Inform Appropriate Assessment found that there would be potential adverse impact on integrity for 7 Special Protection Areas, including the Forth Islands SPA in respect of gannet and seabird assemblage, with regards to gannet and kittiwake. A derogation case was prepared for these. Compensation measures proposed include control of mink and reduction of bycatch of seabirds in the Portuguese fishing fleet.

31. The Council has requested sight of NatureScots response on this matter. The impact on seabirds could potentially be connected to those in or near East Lothian. If this is the case, the Council would request compensation for this within East Lothian. Enhancement should also be considered in line with NPF4 Policy 3. If enhancement cannot be carried out on site, measures to promote conservation of seabirds such as interpretation or promotion could also be considered. Alternatively the Council would be open to discussion of other biodiversity enhancement measures, such as those identified in its Tree and Woodland Strategy or forthcoming Local Biodiversity Action Plan.

32. Impacts on marine mammals assessed included injury and disturbance, effects from electromagnetic frequency emissions, entanglement and altered prey availability. After mitigation included in the proposal it was concluded there would be no likely significant effects, either alone or cumulatively.

33. Impacts on benthic ecology was considered, including habitat loss and disturbance, and increased risk of invasive non-native species. No significant effects were identified, either alone or cumulatively. Impacts on fish and shellfish ecology were also looked at, including habitat loss and disturbance, underwater noise and unexploded ordnance clearing. Overall it was concluded that there would be no likely significant effect either alone or cumulatively, after taking into account designed in measures.

34. The Council's Biodiversity Officer raises no objection to the proposed wind farm.

LANDSCAPE AND VISUAL IMPACT

35. Both the development plan and Schedule 9 to the Electricity Act contain provision to protect landscape. The applicant states that the proposed development will not be visible from East Lothian.

36. Given the significant distance from the application site to East Lothian, the Council's Landscape Officer agrees with this and has no objection to the proposal.

HISTORIC ENVIRONMENT

37. Both the development plan and Schedule 9 to the Electricity Act contain provisions to protect elements of the historic environment. As the proposal is not within or visible from East Lothian there is no impact on the historic environment here directly or indirectly.

NOISE

38. The development plan contains policy protecting the amenity of communities and individual dwellings, including from noise.

39. The EIAR considers noise in relation to marine mammals and fish, on which NatureScot and others will comment.

40. The proposal is too distant from East Lothian for noise at the windfarm area to affect sensitive receptors here. At Scoping, the Council requested information be included on helicopter movements. Helicopter movements could potentially be used for crew transfers. The EIAR states that total helicopter movements in site preparation is 3942 return trips. Total vessel movement excluding helicopters for site preparation is 7834. During operation and maintenance phase, there is expected to be 216 helicopter return trips and 508 return trips from other vessels. The applicant has stated in correspondence that the extent to which helicopters will be used in construction and operation of the project is yet to be determined, and the location of bases that might be used is also not known. Routine helicopter operations are not currently being considered but would be used to facilitate unforeseen repairs or emergency response, using established airports. The applicant states it is highly unlikely that any helicopter flights to, from or over East Lothian will be required.

41. Our Senior Environmental Protection Officer raises no objection.

WATER ENVIRONMENT

42. The development plan contains policy protecting the water environment.

43. The Council's interest in the water environment in this application is that pollution incidents do not occur which affect East Lothian's coastal areas or where the clean-up

costs could fall to the Council. The proposal is a considerable distance from our shores though potentially vessels servicing the proposal, or vessels displaced by the Array, could pass more closely. The EIAR considers the severity of the effect of vessel to vessel collision risk, or vessel to structure allision, to be serious, but the frequency of occurrence to be extremely unlikely. The regulatory regime around shipping will help avoid incidents. A Marine Pollution Contingency Plan is proposed, which would be implemented should an incident occur. The applicant considers that given this, it is extremely unlikely that in the event of an incident, that pollutants would affect East Lothian's coast.

44. Neither the Council's Emergency Planning team nor Team Manager – Structures and Flooding Infrastructure object to the proposal. SEPA refer Marine Scotland to their Standing advice and other guidance.

TRANSPORTATION AND ACCESS

45. There is no expected activity on East Lothian's transport network.

46. The Council's Roads Services do not object.

ECONOMY

47. NPF4 Policy 11c states that development will only be supported where it maximises net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities. NPF4 Policy 25 Community Wealth Building Part a) supports proposals that contribute to local or regional wealth building strategies and that are consistent with local economic priorities, while Part b) supports community ownership.

48. The EIAR includes a Socio-Economic chapter. This considers social and economic effects. This considered economic benefit from employment and gross value added (gva), impacts associated with the construction operation and maintenance and decommissioning of the array. The EIAR (chapter 18 para 81) estimated that the direct economic impact could be £1.3 billion GVA and 19,960 years of employment in Scotland, half of which related to the manufacture of floating wind turbine installations, and £1.6 million GVA and 24,040 years of employment in the UK. Spending in the supply chain and by staff would also support wider economic impacts. The only specific mention of East Lothian was as part of the study area should the port of Leith be chosen as a construction port.

49. Economic effects arising from changes to commercial fisheries were considered, with none identified. No significant economic effects were identified from changes to shipping and marine recreation either. Changes to tourism were not anticipated due to the lack of visibility of the proposal from land. Social and cultural effects, mainly from increased activity and population around the construction ports were considered, however this will not be within East Lothian. Demand for housing and other services could increase during construction around the construction port chosen. Cumulatively

with other projects and plans, the EIAR concludes there is likely to be a temporary, beneficial and moderate significant effect on the Scottish economy during construction.

AVIATION

50. The development plan contains policy on aviation safety. Others will comment on this. No aviation lighting will be directly visible from land within East Lothian.

SAFETY, ACCIDENTS AND DISASTERS

51. The intent of NPF4 Policy 23 is to protect people and places from environmental harm, and mitigate risks arising from safety hazards. The EIA regulations include assessment of the potential impact from major accidents and disasters. The EIAR chapter 16 covers this. This considers both the potential for accidents and disaster to the Array, and that the array might cause. None of these, other than collision of shipping, has the potential to significantly affect East Lothian. This risk is governed by other regulation.

EIA ISSUES

52. The Council notes that the impacts of grid connection are not included, though this is part of the project as a whole. However is for Marine Scotland to determine if the EIA Report is satisfactory, and meets the terms of the legislation. The Council has nothing that it would wish to be considered further within the EIAR as far as interests in East Lothian are concerned.

CONCLUSION

53. The proposal is part of a National Development. The principle of need is therefore established. The Council has declared a Climate Emergency and recognises the importance of addressing climate change and strong policy support for renewable energy in the development plan and elsewhere. The proposal has considerable benefits in terms of decarbonisation of the electricity supply and therefore on greenhouse gas emissions for a given amount of electricity generation. However, the effect on emissions in the short term is negative and this should be mitigated as far as possible in line with NPF4 Policies 1 and 2.
    - The Council is satisfied that from an East Lothian perspective the proposed development is acceptable, subject to the imposition of conditions.

RECOMMENDATION:

1. That Marine Scotland is informed that East Lothian Council does not object to the granting of consent under Section 36 of the Electricity Act 1989 for the reasons set out in this report; and

2. That should Marine Scotland be minded to grant consent, that East Lothian's Chief Planning Officer be authorised to undertake any discussions with Marine Scotland regarding conditions

Edinburgh Airport

From:	Safe Guarding
To:	MD Marine Renewables
Cc:	Safe Guarding
Subject:	Ossian Offshore Wind Farm
Date:	01 August 2024 10:21:48
Attachments:	image001.png Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024.msg

Good morning,
In respect of the attached, I can confirm the location of this development falls out with our Aerodrome Safeguarding zone for Edinburgh Airport therefore we have no objection/comment.
With best regards,
Claire

Claire Brown
Aerodrome Safeguarding & Compliance Officer

t: +44 (0)131 344 3845 m: Redacted
My working hours are Monday-Friday
www.edinburghairport.com

Edinburgh Airport Limited
Room 3/54, 2nd Floor Terminal Building
EH12 9DN, Scotland

Fife Council

From:	Martin Mcgroarty
To:	Rosanne Dinsdale
Cc:	MD Marine Renewables
Subject:	Re: 24/01835/CON - Ossian OWF - S36 Consent/ML Application - Consultation - Response by 12.11.24
Date:	19 August 2024 17:09:49

Rosanne,

Further to my email from last week, below, my colleagues in Archaeology have a request to make, which is as follows:

> *"We would only be interested in sites of archaeological remains that were inadvertently discovered, particularly within the routes for cables within the Forth, but the EIA already includes a Protocol for Archaeological Discoveries. Our interest would be in Ossian sharing archaeological information from their survey of known anomalies and of any chance discovery of archaeological remains within our area of interest to enable FC's Historic Environment Record to be enhanced accordingly."*

I'd be grateful if this could be passed on to the relevant people.

Many thanks,
Martin

Martin McGroarty
Lead Professional (Minerals)
Development Management
Planning Services
Fife Council
Fife House
North Street
GLENROTHES
Fife
KY7 5LT
development.central@fife.gov.uk
www.fife.gov.uk/planning
Follow us on twitter: @FifePlanning
LISTEN | CONSIDER | RESPOND

From: Martin Mcgroarty <Martin.McGroarty@fife.gov.uk>
Sent: 13 August 2024 10:29 AM
To: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Cc: rosanne.dinsdale@gov.scot <rosanne.dinsdale@gov.scot>
Subject: 24/01835/CON - Ossian OWF - S36 Consent/ML Application - Consultation - Response by 12.11.24
FAO Rosanne Dinsdale

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 The Electricity (Applications for Consent) Regulations 1990

MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO

CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

Rosanne,

Thank you for the consultation regarding the above matter.

Having consulted colleagues in Archaeology and Natural Heritage, I can confirm that Fife Council has no objection or comment to make on the proposal.

Kind regards,
Martin

Martin McGroarty
Lead Professional (Minerals)
Development Management
Planning Services
Fife Council
Fife House
North Street
GLENROTHES
Fife
KY7 5LT
development.central@fife.gov.uk
www.fife.gov.uk/planning
Follow us on twitter: @FifePlanning
LISTEN | CONSIDER | RESPOND

Forth Ports

From:	Sandra Robson
To:	MD Marine Renewables
Cc:	Iain Macdonald; Rosanne Dinsdale; Pamela Smyth
Subject:	RE: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024
Date:	02 September 2024 11:07:53

I refer to the below application and confirm Forth Ports has no objection to the works however, any vessels connected with the licence entering Forth Ports' waters and ports follow our arrival notification processes, and that if any civils/survey works are to take place in our area then we must be notified first and may require a works licence and notice to mariners.

Kind regards

Sandra Robson | PA to the Chief Legal and Property Officer | Forth Ports Limited

Head Office | 1 Prince of Wales Dock | Edinburgh | EH6 7DX

T: 0131 555 8700 |DD: 0131 555 8709 |Mob: Redacted https://forthports.co.uk

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: 12 July 2024 10:23
To: MD.MarineRenewables@gov.scot
Cc: Iain.Macdonald3@gov.scot; Rosanne.Dinsdale@gov.scot
Subject: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024

Dear Sir/Madam

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990

MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

On 28 June 2024, Ossian Offshore Wind Farm Limited ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate the Ossian Offshore Wind Farm at a site off the coast of Aberdeen. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application. In addition, the Applicant has provided a Report to Inform Appropriate Assessment, HRA Derogation Case and Compensation Plan.

Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from: https://marine.gov.scot/node/23264

There are three application pages, as follows:

- Section 36 Consent – Construction and Operation of Generating Station – Ossian Offshore Wind Farm
- Marine Licence – Construction and Operation of Generating Station – Ossian Offshore Wind Farm – 00010861
- Marine Licence – Transmission Infrastructure – Ossian Offshore Wind Farm - 00010862

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **3 September 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.

Kind regards,

Rosanne

Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot

Historic Environment Scotland

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

By email:
MD.MarineRenewables@gov.scot

Marine Directorate (Marine Renewables)
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Enquiry Line: 0131 668 8716
HMConsultations@hes.scot

Our case ID: 300064563
Your ref: 00010861 & 00010862
23 August 2024

Dear Marine Directorate

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Ossian Offshore Wind Farm - Section 36 and Marine Licences

Thank you for consulting us on this Environmental Impact Assessment (EIA) Report, which we received on 12 July 2024. We have reviewed the report and considered the proposed development in terms of our historic environment interests. This covers World Heritage Sites, scheduled monuments and their settings, category A-listed buildings and their settings, inventory gardens and designed landscapes, inventory battlefields and Historic Marine Protected Areas. As the proposed development is offshore, we are also offering advice on the undesignated historic environment.

We understand that the proposals are for 265 floating turbines up to 399m in height, with associated transmission infrastructure within the array area. The application covers the array area only, not the export transmission cables or onshore infrastructure.

Our advice

The proposed development does not raise historic environment issues of national significance, and therefore we do not object.

We welcome that the applicants have considered the marine historic environment in the EIA and presented the results of their assessment in chapter 19 and the associated technical report (appendix 19.1); we also welcome the provision of a Written Scheme of Investigation (WSI), and a Protocol for Archaeological Discoveries (PAD) (appendix 19.2). We have some comments on these documents, which are included in the annex to this letter.

Our comments should be treated as a material consideration, and this advice should be taken into account in your decision making. Our decision not to object should not be taken as our support for the proposals. This application should be determined in

accordance with national and local policy on development affecting the historic environment, together with related policy guidance.

Further information

Decisions that affect the historic environment should take the Historic Environment Policy for Scotland (HEPS) into account as a material consideration. HEPS is supported by our Managing Change guidance series.

We hope this is helpful. If you would like to submit more information about this or any other proposed development to us for comment, please send it to our consultations mailbox, hmconsultations@hes.scot. If you have questions about this response, please contact Mary MacLeod Rivett at mary.macleod@hes.scot.

Yours sincerely

Historic Environment Scotland

ANNEX

The EIA Report

We welcome the inclusion of a chapter on the marine historic environment in the Report. We hope that the following comments may be helpful.

In section 19.4, tables 19.1 & 19.2, which cover legislation and policy relating to the marine historic environment, we recommend the inclusion of a section relating to guidance on the assessment of the marine historic environment.

In section 19.9, the applicants present their methodology for assessing effects on the marine historic environment. They refer to the Principles of Cultural Heritage Impact Assessment (IEMA et al., 2021), but for best practice in Scotland, we recommend that the EIA Handbook should be preferred. Table 19.10 sets out potential effects on the historic environment from the maximum design scenario, and table 19.14 sets out the designed in measures to deal with the potential identified impacts. The applicants conclude, in section 19.16, that there are not likely to be significant effects on marine archaeology from the development. We accept this conclusion, dependent upon the detail and execution of the WSI and PAD, discussed below.

The Technical Report

In our earlier review of the draft technical report, to which we responded on 19 December, 2023, we noted that the applicants should consult the following sources of information: United Kingdom Hydrographic Office, relevant Historic Environment Records, HES records (including protected wrecks, scheduled monuments and MPAs), Scottish Government (Marine Directorate)'s protected wrecks, GeoIndex (offshore) maintained by the British Geological Survey (BGS), relevant Admiralty charts, and existing archaeological and published sources. In the submitted report, the table of data (table 3.1) does not cover all these sources.

Written Scheme of Investigation & Protocol for Archaeological Discoveries

In general, the protocols outlined in the WSI and PAD are appropriate. However, the WSI is a high-level document. The approach outlined in Appendix 19.2 (para 131) of submitting more detailed method statements relating to different phases of work, for example UXO and boulder clearance for further consultation is necessary and appropriate.

We note it is proposed that archaeological interpretation will include examination of survey data within the vicinity of known wreck sites and previously identified archaeological anomalies, and areas that will be subject to direct impacts from the array (Appendix 19.2 para 65). However, it is important to be able to illustrate that all direct and indirect impacts on known and unknown sites have been assessed. This is normally done by assessing all survey data. It is not clear how the approach described would enable avoidance of significant effects on marine archaeology. We recommend that all survey

data is subject to archaeological interpretation to ensure that all potential direct and indirect impacts on presently unknown wreck sites are taken into amount.

Historic Environment Scotland
23 August 2024

Joint Radio Company

From:	JRC Windfarm Coordinations Old
To:	MD Marine Renewables
Subject:	Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024 [WF325702]
Date:	30 July 2024 11:56:48

Dear scottish,

A Windfarms Team member has replied to your co-ordination request, reference **WF325702** with the following response:

If any details of this proposal change, particularly the disposition or scale of any turbine(s), this clearance will be void and re-evaluation of the proposal will be necessary.

Please do not reply to this email - the responses are not monitored.
If you need us to investigate further, then please use the link at the end of this response or login to your account for access to your co-ordination requests and responses.

Dear Sir/Madam,

***Site Name**: Ossian Offshore Wind Farm*

***Site Centre at NGR**: 453532 795992*

***Hub Height**: 244m **Rotor Radius**: 175m*

*This proposal is **cleared** with respect to radio link infrastructure operated by the local energy networks.*

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal. Please note that due to the large number of adjacent radio links in this vicinity, which have been taken into account, clearance is given specifically for a location within the declared grid reference (quoted above).

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek re-coordination prior to submitting a planning

application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.

JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.

Regards

Wind Farm Team

Friars House
Manor House Drive
Coventry CV1 2TE
United Kingdom

Office: 02476 932 185

JRC Ltd. is a Joint Venture between the Energy Networks Association (on behalf of the UK Energy Industries) and National Grid.
Registered in England & Wales: 2990041
About The JRC | Joint Radio Company | JRC

We hope this response has sufficiently answered your query.
If not, please **do not send another email** as you will go back to the end of the mail queue, which is not what you or we need. Instead, **reply to this email by clicking on the link below or login to your account** for access to your co-ordination requests and responses.

https://breeze.jrc.co.uk/tickets/view.php?auth=o1xtqgaaafqqmaaaax2klplkxAYeWA%3D%3D

Marine Directorate - Science, Evidence, Data and Digital

E: MD-SEDD-RE_Advice@gov.scot

Rosanne Dinsdale
Marine Directorate Licensing Operations Team
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

19 SEPTEMBER 2024

OSSIAN OFFSHORE WIND FARM – SECTION 36 CONSENT AND MARINE LICENCE APPLICATION

Marine Directorate advisers have reviewed the request and provide the following advice.

Oceanography/Physical Processes

The MD-SEDD oceanography advisor has reviewed Chapter 7 (Physical Process), and supporting appendix 7.1, of the Ossian Offshore Wind Farm (OWF) Environmental Impact Assessment (EIA) report, mainly focusing on tidal and water column processes.

The proposed windfarm is in a region of shelf sea that is likely to experience seasonal stratification, and MD-SEDD have previously advised the potential changes to water column structure including magnitude, timing and extent of seasonal stratification, be scoped into the EIA report. Water column structure is controlled by competing processes including atmospheric heating, freshwater input and mixing. An offshore windfarm could affect water column mixing by the structures generating turbulent wakes (e.g. Dorrell et al. 2022) and/or by altering the near sea surface wind speeds (e.g. Christiansen et al. 2022). MD-SEDD consider the structure induced mixing is more likely to have near-field effects, whereas the wind speed deficit is likely to have more subtle far-field effects.

MD-SEDD advise that the EIA report does not adequately describe the baseline water column processes or perform sufficient impact assessment on seasonal stratification, as was

previously advised in MD-SEDD scoping advice. In the baseline description (paragraphs 25, 28), the difference in sea surface and sea bottom salinity are quantified (from models) and is used as evidence of weak (salinity) stratification. There is no quantification of the difference in sea surface to sea bottom temperature in Chapter 7, i.e. the thermal stratification. MD-SEDD advise that thermal stratification is likely to dominate in this region. The report states "stratification even under the most extreme conditions is classified as weak" but this is based on the salinity model data, rather than temperature. The supporting appendix 7.1 does present modelled temperature data and comments in paragraph 43 that “temperatures from a depth of circa 35 m [are] almost identical to temperatures at the bed”. There are no comments on the difference between surface and bottom temperature, which is significant. MD-SEDD advise the baseline description does not comment on the depth of the thermocline, surface mixed layer depth, and how this varies through the year as was advised at scoping.

MD-SEDD advise that within the determination in the significance of effects, very little evidence is provided to support justification, comparisons are made to other OWFs with fixed foundations and in shallower seas. There is no acknowledgement that the proposed development is using floating foundations, and located in much deeper water that is likely to have very different physical sensitivities (e.g. water column stratification)

MD-SEDD advise that the worst case scenario does not appear to have been used in this assessment. In paragraph 97, the report argues the floating foundations will have (relatively shallow) drafts of 25 m which are unlikely to interact with the thermocline. MD-SEDD advise there is no review of the thermocline depth in the baseline description to support this. Paragraph 97 also acknowledges that a deeper foundation draft of 40 m is within the design envelope but that this was not selected for the assessment on stratification due to the lower surface obstruction. MD-SEDD advise that, depending on thermocline depth, this 40 m draft could lead to more enhanced vertical mixing.

MD-SEDD advise that the future baseline scenario (section 7.7.3) utilises insufficient evidence to form justifications. Comparisons with climate change are not based on evidence (e.g. models), e.g. in paragraph 43 the following statement is not supported by any evidence: "Seasonal stratification may also increase in magnitude and be prevalent through more months of the year, due to a rise in ocean temperatures. This may result in increased impacts to tidal fronts, should infrastructure be developed above or below the sea surface." Similarly, in section 7.11, paragraph 100 mentions that changes to stratification could counteract

changes due to climate change. Again, whilst this is a potentially valid point, no evidence is provided.

MD-SEDD note that the analysis of the potential impact on stratification, e.g. how much additional mixing would be required at this site to change the timing and/or nature of stratification, is qualitative and based on the limited published evidence available. This qualitative approach was previously advised by MD-SEDD at scoping, however MD-SEDD advise that the EIA report does not adequately describe the baseline for this approach to be justified here.

MD-SEDD agree with the assessment that the magnitude of impact to seasonal stratification is medium (paragraph 109). The magnitude of potential change is un quantified in the EIA report, but potential changes to seasonal stratification would occur through the lifetime of the project, i.e. more than five years. The EIA report states that the sensitivity of the receptor (seasonal stratification) is negligible, but it is not clear whether the applicant has considered the potential knock on consequences to primary productivity and higher trophic levels. Overall, MD-SEDD agree that the significance of impact is likely to me minor for this development. MD-SEDD advise there is relatively little information available to support these justifications and that further evidence is required. MD-SEDD also advise the cumulative impact of ScotWind has the potential to be higher and advise that further research and monitoring be required to reduce this uncertainty.

MD-SEDD advise that potential impacts on the oceanography from marine developments are not well known. Developments, such as Ossian, are proposed in areas of ocean much deeper than previous applications, and in areas that seasonally stratify. As such this is a major evidence gap with the potential to have impacts on multiple receptors due to potential changes in productivity. MD-SEDD advise that pre, during and post construction monitoring, particularly of the thermocline and primary productivity (e.g. chlorophyll) through the seasons, is required to ensure the assessment within the EIA is justified.

Commercial Fisheries

MD-SEDD are content that the baseline assessment and data sources used provide a thorough picture of the commercial fisheries baseline within the study area.

MD-SEDD advise that there are multiple issues identified with the assessment of significance (section 12.11) which are highlighted below.

- When discussing the classification of magnitude of impact (e.g. paragraph 84), the assessment refers to the 'reversibility' of the impact and/or the impact being 'intermittent' or 'continuous'. None of these terms are included in Table 12.7 (Definition of Terms Relating to the Magnitude of an Impact) as criteria with which to define the magnitude of impact, and no definition of these terms is given in relation to what would correlate to low/medium/high magnitude of impact levels.
- 'Local/regional spatial extent' is referred to when discussing the magnitude of impact but this does not correspond with the terminology in Table 12.7 which refers instead to limited/moderate/extended physical extents. It is unclear how these match with each other. There is no clear definition between what is referred to as local versus regional extent.
- When discussing the sensitivity of receptors the terms 'vulnerability' and 'recoverability' are used, although these are included in Table 12.8 (Definition of Terms Relating to the Sensitivity of the Receptor), no definition is given as to what vulnerability or recoverability represent or how they are determined as low/medium/high.
- The justifications given when classifying both the magnitude of impact and sensitivity of receptors are often lacking any detail to back up statements being made such as 'medium reversibility' or 'low vulnerability'. How these conclusions have been drawn is therefore unclear. General descriptions of the baseline are often made but not always linked to the statements of classification.
- The sensitivity of mobile demersal gear and pelagic trawl gear to the impact of 'increased snagging risk' is listed as medium with no justification or evidence as to why this is being classed as medium and not high or very high (paragraph 187). MD-SEDD disagree with this classification as mobile fishing gear is very vulnerable to snagging on infrastructure such as dynamic cables and mooring lines within the water column.
- It is unclear if the historic small sized haddock fishery has been included when assessing the magnitude of impact upon the demersal otter trawl and demersal seine fleets. It is mentioned within the assessment but it's influence on the final classifications of magnitude of impact are not explained.
- Table 12.6 lists the maximum design scenario used within the assessment. This table states the maximum design for the wind turbine mooring system is "catenary mooring line type with up to 6 mooring lines and anchors (per foundation); mooring line radius:

up to 700 m". However in Chapter 3, the maximum number of anchors and therefore number of mooring cables is given as 9 in each scenario.

MD-SEDD advise the numerous issues identified prevent an accurate assessment, however given the extremely low level of fishing identified in the baseline within the array area, MD-SEDD agree with the outcomes of the assessment which finds no significance in EIA terms for the impacts caused by the array area alone.

MD-SEDD note the proposal for monitoring of commercial fisheries to increase the knowledge of how commercial fisheries will interact with operational offshore windfarms and to ensure the baseline assessment remains valid. MD-SEDD request clarification on the length of monitoring proposed as in one response to the scoping opinion the developer states this will be the first 5 years of operation (Table 12.3, June 2023 MD-LOT, page 4), however in another they state they agree to long term monitoring throughout the lifetime of the project (Table 12.3, June 2023 SFF Scoping Representation (April 2023), page 5). Later in the chapter it states the approach to monitoring will be detailed in the FMMS post-consent (Table 12.13). MD-SEDD advise the length of monitoring is clarified.

MD-SEDD note that the cumulative effects assessment has identified likely significant cumulative effects from the array combined with other projects. Commercial fisheries monitoring is proposed as additional mitigation which the assessment states will lower the cumulative effects to be non-significant in EIA terms. MD-SEDD do not agree that monitoring of fishing activity will reduce the cumulative impacts identified in the cumulative effects assessment, and as such advise that these cumulative effects remain significant in EIA terms. MD-SEDD note that participation in a regional commercial fisheries working group is stated as additional mitigation in paragraph 395 however this is also included in Table 12.10 (Designed In Measures Adopted as Part of the Array) so this would not be deemed additional mitigation and should have been taken into account in the initial assessment of significance.

References

Christiansen, N., Daewel, U., Djath, B., & Schrum, C. (2022). Emergence of Large-Scale Hydrodynamic Structures Due to Atmospheric Offshore Wind Farm Wakes. Frontiers in Marine Science, 9. https://doi.org/10.3389/fmars.2022.818501

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Yours sincerely,

Renewables and Ecology Team

Marine Directorate – Science, Evidence, Data and Digital

Marine Laboratory, 375 Victoria Road,
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www.gov.scot/marinescotland

Marine Directorate - Science, Evidence, Data and Digital (Socioeconomics advice)

Scottish Government
Riaghaltas na h-Alba

Ossian Offshore Wind Farm

Marine Analytical Unit Response
Marine Directorate

The Ossian Offshore Wind Farm Environmental Impact Assessment ("EIA") report includes descriptions of a range of potential impacts. This response focuses only on the assessment of social and economic impacts.

Assessment of impacts

All socio-economic impacts identified during the scoping stage were assessed. The assessment was carried out for all stages of the project.

No site specific surveys were conducted. The report states that "socio-economic impacts are determined by level of expenditure" and that since the construction and operation ports are not known, they cannot provide an assessment of socio-economic impacts. This is a limited view of socio-economic impacts as it restricts social impacts to only what is observed through economic impacts. In addition, although the inclusion of potential ports was welcome, the report provides a long list of possible ports, even ones that are already identified as not plausible for the needs of the project. It would be more useful if the list focused on a short-list of plausible options only. This would allow for more in-depth analysis and significance testing. Furthermore the level of data provided for these port locations is aggregated to a "local study area", in some cases this seems to include multiple local authorities. To provide one example, Rosyth has a population of 15,157 in 2022 according to Census data but the license application states a population of 1,546,300, which appears to be a summation of the surrounding local authorities. Demographic information that focused on the ports and immediate surrounding areas would have been a more useful metric than the high level aggregated data provided for these potential ports when discussing effects on population.

The report states that since construction and operation and maintenance port(s) are not yet known, the social impact assessment has been based on the population and workforce of the local areas surrounding a long list of potential construction and operation and maintenance port(s).

They use magnitude and significance methodology that is dependent on a predicted change of around 0.5-1% of the population of the study area in order for the impact to be determined to be significant. They assessed the sensitivity of community and social assets by looking at the magnitude of the most beneficial and most adverse scenarios for the local study areas with the lowest and the highest populations (as defined by local study area).

All social impacts have been determined to be negligible as they cannot produce enough impact to affect the aggregated population. We would like to note that magnitude and significance methodology is not always adequate for assessing social

impacts on communities, as from the macro perspective of national economy and society, these impacts may be seen as affecting only a small group of people. In reality, changes within communities might be quite significant, especially given the potential cumulative effects of the upcoming ScotWind developments. We, therefore, encourage the developer to give careful consideration to methodologies used to assess the significance of social impacts, and to reflect this in their future licensing documents.

Impacts of decommissioning and cumulative effects are not provided overall due to lack of information around port location, and details related to the decommissioning process. Some cumulative effects of the array itself are provided, but all were determined to have a negligible impact.

Sensitivity of tourism was not conducted as ports are not known.

Summary of anticipated impacts

The assessment considered the following potential effects:

- Change in employment levels;
- Change in GVA levels;
- Change in demand for housing and local services;
- Change in the volume and value of tourism;
- Change in socio-cultural conditions;
- Distributional effects.

These effects were considered for the following areas:

- A variety of ports, noting that port locations won't be known until a later stage.
- Scotland;
- UK.

<u>Impacts</u>

In terms of significance of effects, the assessment anticipated moderate (significant) beneficial effects in terms of economic impacts for Scotland. In addition, a moderate to major (significant) beneficial effects could be seen for the port chosen but there is a large degree of uncertainty due to the port being unknown at this stage. The analysis identified major (significant) beneficial impacts regarding the contribution to the UK energy sector.

With regards to housing and local services, it is anticipated that Scotland and the UK will experience negligible or low (not significant) effects on the demand for housing during all phases of the development.

Consultation and engagement

They stated that it was not possible to engage with local communities due to not knowing the location of the construction and/or operation and maintenance ports. As such they only consulted local authority and economic development agencies based around the east coast of Scotland. The report states that "*Although the construction and operation and maintenance ports are not known at this time, once selected the*

Applicant will engage with local communities and relevant stakeholders to identify and address potential challenges and work to increase benefits to the local community area.". However no indication is given as to who that might be, or how they will be engaged with.

A letter was written to each stakeholder, summarising the proposed approach to assessing socio-economic impacts, including the economic and social impacts to be considered. Comments were sought on the approach, the impacts to be included and any comments on the socio-economic impacts particularly relevant to the geographic areas that stakeholder organisations are responsible. A follow up meeting was held with Dundee city council and Scottish enterprise.

Summary

Overall, the desk top assessment of socio-economic impacts is conducted to a satisfactory standard for a project of this size. The project did not engage with communities in line with MAU advice post scoping due to the identity of these local communities being unknown, thereby limiting the feedback within the report to a narrower range of stakeholders than desired.

Maritime and Coastguard Agency

Vaughan Jackson
Maritime and Coastguard Agency
UK Technical Services Navigation
105 Commercial Road
Southampton
SO15 1EG

www.gov.uk/mca
2nd September 2024

Licensing Operations Team,
Marine Directorate,
Scottish Government,
Victoria Quay,
Edinburgh,
EH6 6QQ.

By email to MD.MarineRenewables@gov.scot

Dear Marine Directorate,

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND A MARINE LICENCE UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WINDFARM.

Thank you for the opportunity to comment on the application for consent under Section 36 of the Electricity Act 1989 and marine licence under the Marine (Scotland) Act 2010 for the Ossian Offshore Windfarm. The MCA's remit for Offshore Renewable Energy Installations (OREIs) is to ensure that the safety of navigation is preserved, and our Search and Rescue capability is maintained, whilst progress is made towards government targets for renewable energy. The Navigation Risk Assessment (NRA) and the shipping and navigation elements of the Environmental Impact Assessment Report have been reviewed and we would like to comment as follows:

Navigation Risk Assessment
Anatec Limited has undertaken a detailed Navigation Risk Assessment (NRA) in accordance with MCA guidance (MGN 654) and NRA risk assessment methodology. We are satisfied that appropriate traffic data has been collected in accordance with MGN 654, which includes two 14-day marine vessel traffic surveys in winter 2022 (7th – 21st December) and summer 2023 (2nd – 18th July). In addition, 12 months of Automatic Identification System (AIS) data for 2022 has also been collected.

The MCA is content that the hazard log presented in Appendix B, Table B.1 of the NRA is a reasonable and proportional assessment of the risks. A completed MGN 654 Checklist has also been provided in Appendix A, Table A.1 as part of the NRA, and the MCA is satisfied that all recommendations have been addressed.

It is noted that some of the older studies carried out regarding Navigation, Communication, and Position Fixing Equipment are referred to in Section 12 of the NRA. There may be additional benefit in referring to more recent helicopter trials and documents written by the MCA in 2019, titled: "MCA

report following aviation trials and exercises in relation to offshore windfarms" and "MCA report following aviation trials at Hornsea Project 1 windfarm". Some issues identified in the 2005 paper are relevant today, but there are now some different systems and aircraft in operation and windfarms have become larger and further offshore.

Emergency Response and Search and Rescue
A SAR checklist based on the requirements in MGN 654 Annex 5 will need to be completed in agreement with MCA before construction starts. This will include the requirement for an approved Emergency Response Co-operation Plan (ERCoP) and will be incorporated as a condition of the Marine Licence.

During SAR discussions, particular consideration will need to be given to the implications of the site size and location. Attention should be paid to the level of radar surveillance, AIS and shore-based VHF radio coverage and give due consideration for appropriate mitigation such as radar, AIS receivers and in-field, Marine Band VHF radio communications aerial(s) (VHF voice with Digital Selective Calling (DSC)) that can cover the entire wind farm sites and their surrounding areas.

Specific comments on emergency response and search and rescue are as follows:

9.3 (100) – currently there are 10 operational bases, and this will increase to 12 when the two new (seasonal only) bases go live.

101 – not incorrect but this is not in addition to 12 as currently mentioned in 100.

9.4 (107) – a point on hoaxes. I can understand why they may have been excluded since no-one was ultimately at risk, however, a response is still required up until the point a hoax is confirmed and therefore the windfarm could still have an impact on the effectiveness of that response.

Cumulative Impacts
A Cumulative Effects Assessment (CEA) has been made based on existing and proposed developments in the study area as presented in Volume 3, Appendix 6.4: Cumulative Effects Screening and Appendix 6.5: Cumulative Effects, Location of Projects and Plans. These developments are summarised in Section 14, table 14.1 and figure 14-1 of the NRA. The assessment also summarises the main commercial routes and those with potential for deviations. 11 routes are identified and presented in table 14.2. It is noted that a tiered approach to assessment has been adopted. The projects that have not submitted scoping requests or consent applications or and are more than 50nm from the array area or 2nm from the cable corridor (referred to in table 3.4 of the NRA as Tier 3 'pre-scoping'), have not been considered for in combination assessment. We are content with this approach to the CEA at this stage.

In the scoping report, we made comment regarding the proximity to other offshore developments in particular the proposed Morven and Bell Rock offshore wind farms. This is captured in section 4, Table 4.1. Following discussions with the Applicant throughout the consultation process including the HAZID workshop and during a meeting held in May 2024 the MCA concluded that:

'The information presented to us from the projects on the 2nd May 2024, provided evidence of alternative routing to both the east and west of the Morven and Ossian projects and relatively low traffic volumes. It was concluded that the current gap between the projects remains an option for through navigation, but it is more likely that vessels navigating the area will avoid it.

Any traffic passing through the gap would do so on the Masters discretion and the numbers of vessels that may consider this, based on the current activity in the area and expert opinion, would likely be

low. Because of this a justification for the extension of the gap to 5nm on safety grounds, when alternatives are available and the expected traffic deviation changes are considered, will not be made at this time, and the MCA is content with the boundaries bordering the gap between Ossian and Morven to remain as they are. It must be noted that this is an exceptional case and our position will neither influence nor set a precedent to other proposed wind farm boundaries in the UK.'

Layout Design

The turbine layout design will require MCA and Northern Lighthouse Board (NLB) approval prior to construction to minimise the risks to surface vessels, including rescue boats, and search and rescue aircraft operating within the site. The MCA will seek to ensure all structures are aligned in straight rows and columns with a minimum of two lines of orientation. Further advice will be provided to the project once the layout discussions have started.

Marking, Lighting and Construction Programme

The MCA will seek to ensure the turbine numbering system follows a 'spreadsheet' principle and is consistent with other windfarms in the UK. All lighting and marking arrangements will need to be agreed with the MCA and the NLB. The MCA requires all aviation lighting to be visible 360° and compatible with night vision imaging systems, as detailed in CAP 764 and MGN 654 Annex 5. We would also expect to see some form of linear progression of the construction programme avoiding disparate construction sites across the development area, and the consent needs to include the requirement for an agreed construction plan to be in place ahead of any works commencing.

Wet Storage

Reference is made in the NRA, paragraph 369 and Chapter 13, paragraph 115 to wet storage. It is stated that: *'Precise plans for fabrication and wet storage locations are unknown at this stage. Where enabling works are required within port limits to facilitate fabrication and storage these will be subject to the relevant assessment and licensing for the port works. Wet storage within the site boundary will be limited.'* Although stated as 'limited', Paragraph 487 of the NRA states there may be a need to wet store components on the seabed within the array area. As the charted depths in the array range from approximately 60m-80m, it is not expected that any storage would increase the risk to surface navigation. However, the MCA will need to be informed of materials to be stored within the array and made aware of any that will exceed a 5% reduction in surrounding depth referenced to Chart Datum.

Further reference is made in Table 13.11 of Chapter 13: Shipping and Navigation, and Table 18.1 of the NRA and states that the Construction Method Statement (CMS) will elaborate on the plans for wet storage solutions. The MCA agree that wet storage options are yet to be fully explored and we would encourage the applicant when discussing any potential options to consult other relevant maritime stakeholders including the MCA and NLB.

Mooring Arrangements

Third Party Verification of the mooring arrangements for all floating devices will be required prior to construction to provide assurance against loss of station. Ideally this will be a condition of the marine licence. Guidance on regulatory expectations on mooring arrangements can be found on our website: https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping.

The applicant has stated in Chapter 13 Shipping and Navigation Paragraph 215 and section 16.6.1 paragraph 469, that they will put in place a system that continually monitors each individual WTG. The proposal is to have the capability of tracking each turbine in the event of a loss of station. The use of GPS in this system would be expected but inclusion of AIS on all turbines, the overall particulars of this system and recovery arrangements in case of a loss of station will need further discussion with the MCA and NLB prior to construction.

Hydrographic Surveys
MGN 654 requires that hydrographic surveys should fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final data supplied as a digital full density data set, and survey report to the MCA Hydrography Manager. Further information can be found in MGN 654 Annex 4 supporting document titled 'Hydrographic Guidelines for Offshore Developers', available on our website: https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping. This includes surveys during the pre-construction, post-construction and post-decommissioning stages. We would like to highlight the need to provide the data in either GSF or CARIS format and that Total Vertical and Horizontal Uncertainty (TVU & THU) calculations must be provided.

Cable Routes
As this Application concerns the array area only, we except that the exact export cable route, cable burial protection index and cable protection are issues that are yet to be fully developed. Regarding the inter array and interconnector cables referred to in section 6.3 of the NRA it is noted that a Cable Burial Risk Assessment (CBRA) is to be carried out and its findings adhered to (see table 18.1 of the NRA and Table 3.34 Chapter 3: Project Description). Any consented cable protection works must ensure existing and future safe navigation is not compromised. The MCA would accept a maximum of 5% reduction in surrounding depth referenced to Chart Datum.

High Voltage Alternating Current (HVAC) is planned to be used for the inter-array cables. Chapter 3: Project Description, paragraph 66 does state that High Voltage Direct Current (HVDC) is still being considered for the interconnector cables. As any potential use of HVDC is currently planned to remain within the array area in close proximity to the floating foundations and with the justifications presented by the Applicant in paragraph 199 of the NRA and in discussion with the MCA, we are content that a pre-construction compass deviation study will not be required.

Safety Zones
The requirement and use of safety zones as detailed in the application is noted, and MCA will comment on the safety zone application once submitted, as a statutory consultee.

Liaison with local MCA Marine Office
The applicant should be reminded that their contractors and subcontractors must have the required certification for all vessel operations, and early engagement with the local MCA Marine Office should be undertaken where necessary to ensure there are no issues with regards to survey and inspections, towage, and safety requirements. Various additional certificates including a loadline exemption for the turbine platforms will be required prior to any towage to site and the applicant must ensure any ballast water requirements are addressed.

Embedded Mitigation
We have the following comments on the proposed risk controls in section 18, Table 18.1.

1. Cable Burial Risk Assessment
    - In case of damage to, or destruction or decay of, the authorised project seaward of MHWS or any part thereof, excluding the exposure of cables, notification must be issued to MCA, NLB, the Kingfisher Information Service of Seafish and the UKHO within 24 hours of becoming aware.
    - In case of exposure of cables on or above the seabed, the undertaker must within three days following identification of a potential cable exposure, notify mariners and inform Kingfisher Information Service of the location and extent of exposure. Copies of all notices must be provided to the MCA, NLB, and the UKHO within 5 days.

- The plan must include proposals for monitoring offshore cables including cable protection during the operational lifetime of the authorised scheme which includes a risk-based approach to the management of unburied or shallow buried cables.
- Attention should be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed and subject to the traffic volumes, an anchor penetration study may be necessary.

2. Navigation Safety and vessel Management Plan (NSVMP)
    - Local notification to mariners must be issued at least 14 days prior to the commencement of the authorised project or any part thereof advising of the start date of each work and the expected vessel routes from the construction ports to the relevant location. They must be updated and reissued at weekly intervals during construction activities and at least 5 days before any planned operations (or otherwise agreed) and maintenance works and supplemented with VHF radio broadcasts agreed with the MCA.
    - The Kingfisher Information Service of Seafish, must be informed of details of the vessel routes, timings and locations relating to the construction of the authorised project or any part thereof by email to kingfisher@seafish.co.uk :-
        i. at least 14 days prior to the commencement of offshore activities, for inclusion in the Kingfisher Fortnightly Bulletin and offshore hazard awareness data, and;
        ii. as soon as reasonably practicable and no later than 24 hours of completion of all offshore activities.
    - Post construction monitoring is required and must include vessel traffic monitoring by automatic identification system for a duration of three consecutive years following the completion of construction of the authorised project. An appropriate report must be submitted to the MCA and NLB at the end of each year of the three-year period.

Conclusion

The comments detailed above are not considered to be blocks to development, but they are provided to highlight any areas which may require further discussion. Subject to the applicant meeting requirements addressed in this letter, and meeting licence conditions which will be provided to Marine Directorate, it provides a cautious acceptance of the application for consent.

Yours faithfully,

Redacted

Vaughan Jackson
Offshore Renewables Project Lead
UK Technical Services – Navigation

Redacted

Peter Lowson
Offshore Energy Liaison Officer
HM Coastguard Governance, Policy, Standards and International

Ministry of Defence

Defence Infrastructure Organisation

Defence Infrastructure Organisation

Teena Oulaghan
Safeguarding Manager
Ministry of Defence
Safeguarding
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Application Ref: Ossian Offshore

Our Reference: DIO10058405

Rosanne Dinsdale
Marine Directorate
Scottish Government
Victoria Quay
Edinburgh
EH6 6QQ

03 September 2024

Dear Rosanne,

ELECTRICITY ACT 1989 The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 The Electricity (Applications for Consent) Regulations 1990.

MARINE AND COASTAL ACCESS ACT 2009 The Marine Works (Environmental Impact Assessment) Regulations 2007.

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTHEAST OF ABERDEEN.

Thank you for consulting the Ministry of Defence (MOD) in relation to the application for an order granting development consent for the Ossian Offshore Wind Farm through your communication dated 12 July 2024.

The Defence Infrastructure Organisation (DIO) Safeguarding Team represents the MOD as a consultee in UK planning and energy consenting systems to ensure that development does not compromise or degrade the operation of defence sites such as aerodromes, explosives storage sites, air weapon ranges, and technical sites or training resources such as the Military Low Flying System.

I write to advise the safeguarding position of the MOD in relation to the above applications to construct and operate the Ossian Offshore Wind Farm.

This submitted Environmental Impact Assessment (EIA) Report relates only to infrastructure including all construction, operation and maintenance, and decommissioning activities associated with the array. The Project Design Envelope (PDE) approach has been followed by the applicant and the scheme will comprise of up to 265 floating wind turbines, with a maximum height to blade tip of up to 399 metres above Lowest Astronomical Tide (LAT) that will be located off the east coast of Scotland, approximately 80 km south-east of Aberdeen. In addition to the turbine and associated floating foundations there will be up to six large Offshore Substation Platforms (OSPs) or three large and up to

twelve small OSPs. The floating turbines and the OSP's will be connected via a network of dynamic/static inter-array cables and interconnector cables between the OSPs.

The principal concerns of the MOD with respect to this proposed wind farm relate to the impact of the development on the operation and capability of air defence radar systems, and the potential to create a physical obstruction to air traffic movements.

At this time the MOD must **object** to the proposed development on the basis that the scheme would have a significant and detrimental impact on the effective operation and capability of air defence radars deployed at Remote Radar Head (RRH) Buchan and RRH Brizlee Wood.

Air Defence (AD) radar

The proposed turbines would be located approximately 88.3km from, detectable by, and will cause unacceptable interference to the AD radar at RRH Buchan and approximately 147.9km from, detectable by, and will cause unacceptable interference to the AD radar at RRH Brizlee Wood.

Wind turbines have been shown to have detrimental effects on the operation of radar. These include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced, hence turbine proliferation within a specific locality can result in unacceptable degradation of the radar's operational integrity. This would reduce the RAF's ability to detect and deter aircraft in United Kingdom sovereign airspace, thereby preventing it from effectively performing its primary function of Air Defence of the United Kingdom.

Our assessments have determined that, when operational, the proposed wind farm will cause unacceptable and unmanageable interference to the effective operation of air defence radar deployed at RRH Buchan and RRH Brizlee Wood.

The need to mitigate the impacts of the proposed development upon the effective operation of RRH Buchan and RRH Brizlee Wood has been recognised by the applicant and are set out in Chapter 14: Aviation, Military and Communications of the Offshore Environmental Statement (28 June 2024). Whilst the applicant has indicated the need to mitigate these impacts, to date no mitigation scheme has been submitted for assessment.

Therefore, on the basis of the information provided, and until a suitable mitigation scheme has been submitted, assessed, and accepted, the MOD must **object** to this proposal due to the impact it will have on the AD radars at both RRH Buchan and RRH Brizlee Wood.

Physical Obstruction

In this case the array is adjacent to Low Flying Area 11 (LFA 11). Within these areas fixed wing aircraft may operate as low as 250 feet or 76.2 metres above ground level to conduct low level flight training. The addition of turbines in this location would introduce a physical obstruction to low flying aircraft operating in the area.

In the event that the applicant is able to overcome the objections listed above, MOD would require that conditions are added to any consent issued requiring the submission, approval and implementation of an aviation lighting scheme, and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction. The applicant has acknowledged the MOD requirement for MOD accredited aviation safety lighting in table 14.11 in Chapter 14, Aviation, Military and Communications of the Offshore Environmental Statement (28 June 2024).

As this development includes structures that exceed a height of 60m above Highest Astronomical Tide (HAT) it would be subject to the lighting requirements set out in the Air Navigation Order 2016. In addition to any CAA requirements, the MOD will require the submission, approval, and implementation

of an aviation safety lighting specification that details the installation of MOD accredited aviation safety lighting.

With regard to the remainder of the proposed development including the proposed offshore export cable corridor(s) and proposed onshore transmission infrastructure (comprising the proposed onshore export cable corridor(s), proposed onshore convertor station and the proposed landfall location (s) associated with Ossian will be subject to a separate EIA report(s) and consent application(s) in the future.

For the avoidance of any doubt, MOD objects to the proposal on the grounds of the unacceptable impact that the development would have on:

- air defence radar systems sited at RRH Buchan and RRH Brizlee Wood.

I trust this adequately explains our position on this matter.

Yours faithfully,

Redacted

Teena Oulaghan
Safeguarding Manager

National Air Traffic Services

From:	AULD, Alasdair E
To:	MD Marine Renewables
Cc:	NATS Safeguarding; Rosanne Dinsdale; Iain Macdonald
Subject:	RE: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024 [SG35019]
Date:	24 July 2024 11:42:54

NATS notes the references within the Array Environmental Impact Assessment: Chapter 14 relating to the impact on the NATS radar at Perwinnes and the need for mitigation to be put in place.
NATS will continue to work with the developer to explore mitigation options and will keep Scottish Ministers abreast of progress.
Regards,
Alasdair
NATS Safeguarding

NATS Internal

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: Friday, July 12, 2024 10:23 AM
To: MD.MarineRenewables@gov.scot
Cc: Iain.Macdonald3@gov.scot; Rosanne.Dinsdale@gov.scot
Subject: [EXTERNAL] Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024

Dear Sir/Madam
ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990
MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007
APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.
On 28 June 2024, Ossian Offshore Wind Farm Limited ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate the Ossian Offshore Wind Farm at a site off the coast of Aberdeen. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application. In addition, the Applicant has provided a Report to Inform Appropriate Assessment, HRA Derogation Case and Compensation Plan.
Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from: https://marine.gov.scot/node/23264
There are three application pages, as follows:

- Section 36 Consent – Construction and Operation of Generating Station – Ossian Offshore Wind Farm
- Marine Licence – Construction and Operation of Generating Station – Ossian Offshore Wind Farm – 00010861
- Marine Licence – Transmission Infrastructure – Ossian Offshore Wind Farm - 00010862

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **3 September 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.

Kind regards,

Rosanne

Rosanne Dinsdale
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NATIONAL TRUST *for* SCOTLAND

National Trust for Scotland- Response to Ossian Offshore Windfarm Application

2 September 2024

1. Summary

The National Trust for Scotland cares for over 1 million seabirds around Scotland, including some of our most vulnerable and important colonies. One of the biggest threats to seabirds is climate change, which the development of offshore windfarms will be critical to tackling. However, developing Scotland's renewable capabilities must be done sensitively and not inadvertently damage the species and habitats they aim to protect. The Trust is supportive of offshore wind expansion but believes developments must be located in the right places, and at the right scale, for nature.

The Trust believes that offshore windfarms should not be located where they are projected to have significant negative impacts on natural and cultural heritage (particularly those elements designated of international or national importance within Special Protection Areas, Special Landscape Areas, Marine Protected Areas etc) unless:

(a) mitigation is proposed that will reduce impact to an acceptable level; or
(b) compensation measures are proposed that will produce net positive, additional outcomes that adequately compensate for the impacts.

The Trust has expressed its view that offshore windfarms based further offshore (i.e. floating) are likely to be less impactful to seabirds. In response to the Berwick Bank Offshore Windfarm application, the Trust strongly recommended the windfarm be re-located to a site further offshore as this would be less impactful on the nature and heritage of St Abb's Head National Nature Reserve (NNR), which is owned by the Trust.

We are therefore pleased to see that Ossian is a floating offshore windfarm, located farther out to sea and so less impactful on important seabird colonies. The progression towards floating offshore wind which Ossian is part of is very positive. Although the Trust is encouraged by the work that has gone into Ossian, we have concerns over the scope of the EIA and the evidence base for, and effectiveness of, the proposed compensation.

The Trust's primary concern is that the St Abb's Head to Fast Castle Special Protected Area (SPA) has not been included in the scope of the EIA. Evidence on foraging ranges indicate our seabird assemblage at St Abb's Head NNR is likely to be impacted by Ossian therefore it's important the EIA is reassessed to include the St Abb's Head to Fast Castle SPA.

We are also concerned that evidence from St Abb's Head NNR used to justify the American mink compensation is not robust and have concerns about the effectiveness of the bycatch compensation being in Portugal instead of in Scottish waters.

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NATIONAL TRUST for SCOTLAND

2. Areas of concern

2.1 St Abbs to Fast Castle SPA must be included in the scope of impacted SPAs

St Abb's Head NNR is home to internationally important seabird colonies. The cliffs are populated by about 45,000 seabirds during the breeding season. This includes internationally important numbers of guillemots and nationally important numbers of kittiwakes, razorbills and shags. In recent years a new Gannet colony has been established and now hosts 118 breeding pairs. Due to this St Abb's Head NNR is a popular birdwatching site. The Trust's seabird population monitoring means we hold a dataset spanning more than 30 years, which allows us to see with clarity the impacts of external events such as Avian Flu on our populations.

The Trust is deeply concerned that the St Abb's Head to Fast Castle SPA has been omitted from the EIA. Evidence indicates Razorbill, Guillemot and Gannet colonies at St Abb's Head NNR will likely be impacted by Ossian thesefore it's essential the EIA is carried out again with the St Abb's Head to Fast Castle SPA in scope.

Razorbill (which the St Abb's Head to Fast Castle SPA is designated for) have a mean max +1SD foraging range of 122.2 km and Ossian is 125.5 km away from St Abbs Head NNR, meaning Razorbill foraging range scoping threshold is just 3.3 km from array area. However, foraging radii are widely accepted to be highly variable between colonies, years and individuals[1]. While the developer has followed the guidance in not including Razorbill in the scope of the EIA, given the uncertainty over foraging radii and the very near inclusion of Razorbill, we believe a more robust approach would be to include Razorbills in the St Abb's Head to Fact Castle SPA in the EIA.

Guillemot (which the St Abb's Head to Fast Castle SPA is also designated for) foraging ranges are less well documented and classed as low confidence[2], though available tracking data does show their foraging ranges can be just as large as that of Razorbill[3]. The Trust is concerned that guillemots in the SPA have not been included in the EIA because of a poor understanding of their foraging ranges due to a lack of tracking data, rather than because there is a body of evidence showing that they are unlikely to be using the Ossian array area. Again, although the developer has followed NatureScot guidance in not including Guillemot, the Trust believes the uncertainty about Guillemot foraging ranges means the St Abb's to Fast Castle SPA should also be included in the scope of the EIA. This is particularly important given the very large size and international significance of the Guillemot population at St Abb's Head NNR.

The St Abb's Head to Fast Castle SPA was designated in 1997 and was updated to include a marine extension in 2009. In these years, no gannets nested at St Abb's Head NNR however since 2016 we have seen a colony establish itself. The importance of a new Gannet colony establishing itself cannot be understated, especially in the face of the extreme pressures seabirds are currently under. The colony is fragile and needs support. It is also of importance to St Abb's Head NNR's reputation as a birdwatching site. NatureScot guidance suggests a

[1] Cleasby et al (2023); Woodward et al (2024)
[2] Woodward et al (2024)
[3] Wakefield et al (2017); Woodward et al (2024)

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foraging range of 509.9 km should be considered for Gannet[4], meaning gannets breeding at St Abb's Head NNR are likely to be impacted by Ossian.

Although the SPA has not been reassessed since the Gannet colony was established, meaning gannets are not a qualifying feature, the Trust strongly feels it would appropriate for the developer to consider the gannet colony in the EIA and proposed compensation.

In addition, the Trust highlights that an adverse effect on Integrity was predicted for the Flamborough and Filey Coast SPA and the Forth Islands SPA, but the St Abb's Head to Fast Castle SPA is geographically closer to Ossian.

The Trust would also welcome more information on what basis Razorbill, Guillemot and Gannet were screened out for minimal and maximum impact scenarios in the RIAA.

2.2 Cumulative impact on seabirds

The Trust is particularly concerned about the cumulative impact of offshore wind farms in the Firth of Forth. If consent is granted for Berwick Bank alongside Ossian the cumulative impacts could be significant for the seabirds in surrounding SPAs (including the St Abb's Head to Fast Castle SPA if the scope of Ossian's EIA is expanded to include it).

Across 20 years, 40,606 puffins, kittiwakes, guillemots and razorbills are predicted to be removed from the population due to Berwick Bank. Ossian adds to this, with NatureScot predicting a loss of up to 1687 guillemots, 111 razorbills, 79 puffins, 36 fulmars, 46 gannets and 31 kittiwakes per year. This could be particularly significant for example in the case of Kittiwake:

Species	Ossian cumulative excluding Berwick Bank	Cumulative including Berwick Bank
Kittiwake	34.11	405.6

Another important reason for the windfarms to be assessed cumulatively is that if the scope of the Ossian EIA is expanded to include the St Abb's to Fast Castle SPA, and Berwick Bank is approved and built, the baseline for St Abb's to Fast Castle that Ossian uses would change.

A decision is yet to be made on Berwick Bank, but the outcome of this would likely have a material impact on the decision on Ossian. Therefore, we strongly encourage the impact of developments in close proximity to be assessed cumulatively.

2.3 Effectiveness of compensation measures

2.3.1 American mink

The Trust is concerned that some of the data used in support of the American mink compensation measure cannot be evidenced. The derogation evidence report states: *"Furness*

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et al., (2013) notes two counts of mink predation at British kittiwake colonies, one of which was at St. Abbs Head, Scotland, where the individual mink predated half of the kittiwake colony during one breeding season."

The Trust cannot verify this statement regarding St Abb's Head NNR. The Trust's annual seabird report[5] states that mink predation was suspected rather than confirmed. It also states that the suspected predation occurred within one sub-colony (Horsecastle), meaning only chicks of 56 breeding pairs were likely to have been impacted rather than half the colony. The suspected event also appears to have been a one-off rather than a continued source of annual mortality. The Trust requests further information on the source for this statement but given the information in the 2001 annual seabird report, we do not believe it provides credible evidence for the progression of eradication of American mink as a compensation measure.

The Trust would also like to flag that although mink control would undoubtedly benefit seabird populations in the vicinity of the impacted SPAs and wider area, the quantification of this to exact numbers has a high level of uncertainty.

The calculations presented within the Appendix 2: Compensation Plan are based on 200 chicks killed per mink per season and have been calculated on an annual basis. This number is based on *"one study, [in which] 200 guillemot chicks were found in a single mink den (T. Björnsson pers. comm in Clode and Macdonald, 2002). It is therefore considered highly precautionary to assume that one mink might predate 200 seabirds from a given colony in a breeding season"*.

Given this, the Trust feel the number of chicks killed per season is a serious overestimation. To state this with a degree of accuracy would require the annual predation rates at each SPA from mink to be ascertained however, this information is lacking. If the compensation measure were to be taken forward it should include additional effort on monitoring to acquire site specific predation rates and subsequent adaptive management measures.

The Trust is also concerned the compensation measure may lack additionality. The Trust welcomes the guarantee from the developer to fund the MCP programme for 35 years after 2026 and support wider SISI projects, however as mink control is already carried out under the MCP programme, we query if it is in fact a normal activity to preserve the SPA network therefore not additional. This query is based on Habitats Regulations Guidance which states: *"any measure that is being or will be undertaken by government bodies to ensure that the site is in favourable conservation status or that protected features are in favourable condition, should not be considered as compensation"*.

[5] Rideout, KJ and Harris, S (2001) St. Abbs Head NNR seabird report 2001

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2.4.2 Bycatch

The Trust welcomes the idea of bycatch mitigation as compensation however, we think this is targeted in the wrong place and delivering the compensation in Scottish waters would be more effective.

Recent evidence suggests razorbills largely remain in Scottish coastal waters during mid-winter[6] which causes concern about how effective this compensation measure can be. Moreover, research shows that it is mainly west coast breeding Guillemot and Razorbill that overwinter further south, and these mainly stop in the Bay of Biscay rather than going as far as Iberian Peninsula[7].

On top of this, evidence for Guillemot mortality due to bycatch in Scottish waters from UK vessels are between 1,800 and 3,300 per annum, 100-200 for Razorbill and a few hundred for Gannet[8]. Combined, the evidence base suggests that a more effective compensation measure would be to support bycatch measures Scottish waters as this would have a better chance of mitigating impacts on Scottish SPA populations.

The Trust would welcome an explanation of why bycatch compensation in Portuguese waters was chosen over bycatch compensation in Scottish waters and requests an assessment of if re-locating this compensation to Scottish waters would be more effective.

We also note that the developer states that numbers compensated for will be defined based on more evidence-based monitoring of bycatch rates for each species pre- and post-mitigation numbers. This approach will provide a more realistic understanding of effectiveness but also means there a lack of certainty in anticipating whether levels of mitigation required will be reached.

Finally, the compensation plan states: *"By providing expertise and securing funding, the Applicant is able to provide additional resources and deliver compensation in partnership with SPEA. Without this funding this programme of bycatch reduction would not be possible"*. The Trust requests clarity on what this expertise is and where specifically, the funding will be allocated.

3. Concluding remarks

The Trust requests the EIA is expanded in scope and re-run to include the St Abb's Head to Fast Castle SPA. To not do this would result in a lack of critical information on seabird impacts and would in turn undermine and weaken any decision taken on Ossian. The Trust is very willing to assist the developer in its assessment of the SPA.

[6] Buckingham et al (2022) Interspecific variation in non-breeding aggregation: a multi-colony tracking study of two sympatric seabirds. Mar Ecol Prog Ser. Vol 684, 181-197 : https://doi.org/10.3354/meps13960

[7]

[8] Northridge et al (2020)

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The Trust also has concerns about the effectiveness of the proposed compensation measures, as well as some of the data used to arrive at the proposed measures.

We welcome the development of floating offshore wind development and are eager to work closely with the Marine Directorate and developers to ensure developments are located in the right places, at the right scale, for nature.

Yours sincerely

Stuart Brooks

Redacted

Director of Conservation and Policy

National Trust for Scotland

Natural England

Date: 24 September 2024
Our ref: 481920
Your ref: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation

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Scottish Government
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BY EMAIL ONLY

Dear Rosanne

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

- Electricity Act 1989
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
- The Electricity (Applications for Consent) Regulations 1990
- Marine and Coastal Access Act 2009
- The Marine Works (Environmental Impact Assessment) Regulations 2007

Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application – Consultation

Location: Ossian Array – approximately 80km South East of Aberdeen

Thank you for seeking our advice on the scope of the Section 36 Consent and Marine Licence Application which we received on 12 July 2024. We also thank you sincerely for the extensions you granted us for this response. The following constitutes Natural England's formal statutory response.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

The advice contained within this letter is provided by Natural England, which is the statutory nature conservation body within English territorial waters (0-12 nautical miles).

Due to our remit, we have limited our advice to chapters on Fish and Shellfish Ecology, Marine Mammals and Offshore Ornithology within the RIAA documents, Derogation documents and EIA documents. Within these bounds we have restricted our advice on impacts to habitats and species from English Marine Protected Areas and habitats and species in English waters.

The following documents have been reviewed for this response:

HRA documents:

- riaa_-_executive_summary_and_conclusion
- riaa_-_part_1_-_introduction
- riaa_-_part_1_-_appendix_1a_-_lse_screening_report
- riaa_-_part_2_-_assessment_on_special_areas_of_conservation
- riaa_-_part_3_-_assessment_on_special_protection_areas_and_ramsar_sites
- riaa_-_part_3_-_appendix_3a_-_offshore_ornithology_spa_apportioning_tech
- riaa_-_part_3_-_appendix_3a_-_annex_a
- riaa_-_part_3_-_appendix_3b_-_offshore_ornithology_spa_pva_technical_rep

Derogation documents:

- derogation_case_0
- derogation_case_-_appendix_2_-_compensation_plan_0
- derogation_case_-_appendix_2_-_annexes_0
- derogation_case_-_appendix_2_-_ecological_evidence_report_0
- deroga4_0
- derogation_case_-_appendix_4_-_compensation_environmental_impact_assessment_report_0
- derogation_case_-_appendix_5_-_compensation_no_likely_significant_effects_report_0

EIA documents:

- non-technical_summary_2
- volume_1_-_introduction
- volume_1_-_introduction_-_table_of_contents
- volume_1_-_introduction_-_overarching_glossary
- volume_1_-_introduction_-_chapter_3_-_project_description
- volume_1_-_introduction_-_chapter_6_-_eia_methodology
- volume_2_-_technical_assessments_-_chapter_9_-_fish_and_shellfish_ecology
- volume_2_-_technical_assessments_-_chapter_10_-_marine_mammals
- volume_2_-_technical_assessments_-_chapter_11_-_offshore_ornithology
- volume_2_-_technical_assessments_-_chapter_15_-_infrastructure_and_other_users
- volume_2_-_technical_assessments_-_chapter_20_-_inter-related_effects
- volume 3_technical reports_appendix 5.1_Consultation Responses
- volume 3_technical reports_appendix 5.1_annex A_eDNA PROPOSED APPROACH NOTE BENTHIC SUBTIDAL ECOLOGY AND FISH AND SHELLFISH ECOLOGY
- volume 3_technical reports_appendix 5.1_annex B_MARINE MAMMAL METHODOLOGY NOTE
- volume 3_technical reports_appendix 5.1_annex C_– Underwater Sound from Piling_Modelling Methodology
- volume 3_technical reports_appendix 5.1_annex D_MARINE MAMMAL CONSULTATION NOTE 1
- volume 3_technical reports_appendix 5.1_annex E_MARINE MAMMAL CONSULTATION NOTE 2
- volume 3_technical reports_appendix 5.1_annex F_OFFSHORE ORNITHOLOGY EIA CONSULTATION 1_SUPPLEMENTARY INFORMATION
- volume 3_technical reports_appendix 6.3_Enhancement Mitigation and Monitoring Commitments
- volume 3_technical reports_appendix 6.4_Cumulative Effects Screening
- volume 3_technical reports_appendix 6.5_Cumulative Effects_Location of Projects and Plans
- volume 3_technical reports_appendix 9.1_Fish and Shellfish Ecology Technical Report
- volume 3_technical reports_appendix 9.1_Fish and Shellfish Ecology Technical Report

- volume 3_technical reports_appendix 10.2_annex A_Marine Mammal Digital Aerial Survey Data Report
- volume 3_technical reports_appendix 10.2_annex B_Seal Haul Out and Telemetry Data Report
- volume 3_technical reports_appendix 10.2_Marine Mammal Technical Report
- volume 3_technical reports_appendix 10.3_Marine Mammals iPCod Monitoring Report
- volume 3_technical reports_appendix 11.1_annex A_Offshore Ornithology Design-Based Abundance Estimates
- volume 3_technical reports_appendix 11.1_annex B_Offshore Ornithology MRSea Absundance Estimates
- volume 3_technical reports_appendix 11.1_annex C_Offshore Ornithology Colony Counts for Breeding Season Regional Populations
- volume 3_technical reports_appendix 11.1_annex D_Offshore Ornithology Apportioned Design-Based Abundance Estimates
- volume 3_technical reports_appendix 11.1_Offshore Ornithology Baseline Report
- volume 3_technical reports_appendix 11.2_annex A_Offshore Ornithology Deterministic Collision Risk Model Estimates
- volume 3_technical reports_appendix 11.2_annex B_Offshore Ornithology Migratory CRM Estimates
- volume 3_technical reports_appendix 11.2_Offshore Ornithology Collision Risk Model Technical Report
- volume 3_technical reports_appendix 11.3_annex A_Offshore Ornithology Displacement Data
- volume 3_technical reports_appendix 11.3_Offshore Ornithology Displacement Technical Report
- volume 3_technical reports_appendix 11.4_annex A_Offshore Ornithology MRSea Validation Methodology
- volume 3_technical reports_appendix 11.4_annex B_Offshore Ornithology MRSea and Design-Based Abundance Estimates Comparison
- volume 3_technical reports_appendix 11.4_Offshore Ornithology MRSea Technical Report
- volume 3_technical reports_appendix 11.5_Offshore Ornithology EIA Population Viability Analysis Technical Report

Additional documents:

- volume 4_OMPs_appendix 21_Environmental Management Plan
- volume 4_OMPs_appendix 21_annex A_Marine Pollution Contingency Plan
- volume 4_OMPs_appendix 21_annex B_Invasive Non-Native Species Management Plan
- volume 4_OMPs_appendix 22_Marine Mammal Mitigation Plan

SUMMARY OF NATURAL ENGLAND'S ADVICE

Potential for adverse effects on English Special Protection Areas (SPAs)

Natural England do not agree with all of the conclusions of the HRA. We would advise adverse effects on integrity (AEOI) for more species and sites than the HRA currently concludes. Please see below, Annex A Section 4 Offshore Ornithology - impacts on English SPAs.

Farne Islands SPA

Guillemot – cannot rule out AEOI alone

Seabird assemblage (guillemot, kittiwake, razorbill) – cannot rule out AEOI alone

Flamborough and Filey Coast SPA

Kittiwake – cannot rule out AEOI in-combination

Guillemot – cannot rule out AEOI in-combination

Razorbill – cannot rule out AEOI in-combination

Assessment methodologies

NatureScot's advice on ornithological impact assessment methodologies, differs from that provided by Natural England in some respects. These differences are flagged in this response to provide context to aid with the interpretation of the results of the impact assessment conducted by the applicant. Natural England do not expect the applicant to undertake a separate impact assessment based on Natural England's advice.

Detailed Comments

Please find our detailed comments in the attached Annexes:

Annex A – Natural England's Comments on the Report to Inform Appropriate Assessment
Annex B – Natural England's Comments on the Compensation Measures
Annex C – Natural England's Interim guidance on Highly Pathogenic Avian Influenza (HPAI)
Annex D – Joint advice note from the Statutory Nature Conservation Bodies (SNCBs) regarding bird collision risk modelling for offshore wind developments

Additional Information

Should the proposal be amended in a way which significantly affects its impact on the natural environment then, in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England should be consulted again.

For any queries relating to the specific advice in this letter only please contact me using the details below. For any new consultations, or to provide further information on this consultation please send your correspondence to consultations@naturalengland.org.uk.

Yours sincerely

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Annex A – Natural England's Comments on Report to Inform Appropriate Assessment

1 Fish and Shellfish ecology

Natural England agrees with the conclusion of no Adverse Effect on Integrity to designated fish from the east coast of England Special Areas of Conservation.

2 Marine Mammals

Natural England agrees with the conclusion of no Adverse Effect on Integrity to designated grey seal of the Berwickshire and North Northumberland Coast SAC and harbour porpoise of the Southern North Sea SAC.

3 Offshore Ornithology – Overview

Remit and extent of our advice

Natural England have restricted comments on the impact assessment to the following species from English SPA colonies: kittiwake, guillemot, razorbill, gannet, and puffin.

As noted in our letter, NatureScot's advice on ornithological impact assessments differs from that provided by Natural England in some respects. These differences are flagged in Section 5 below to provide context to aid with the interpretation of the results of the impact assessment conducted by the applicant. We highlight the following in particular:

- Guillemot and razorbill apportioning
  The Applicant's approach to apportioning effectively excludes any connectivity between the array area and any SPA colonies for these species during the breeding season. We do not support this approach and question whether it is sufficiently precautionary, given the baseline surveys recorded significant numbers of birds at this time.

- Sabbatical rates
  Natural England note that the Applicant has excluded 'sabbatical birds' from the impact assessment, based on assumptions about the percentage of non-breeding adults in each population. Natural England do not agree with the use of sabbatical rates to exclude birds from impact assessment, nor do we consider the inclusion of sabbatical rates to be appropriate within the apportioning process.

- Stable age apportioning
  Natural England note that the Applicant has apportioned birds to age classes according to stable age structure calculated from population models for many species and seasons. Natural England does not support the use of the stable age structure approach for age apportioning.

Highly Pathogenic Avian Influenza (HPAI)

We note the need for a precautionary assessment of impacts given the recent and ongoing outbreaks of HPAI in seabirds. Please see Annex C for Natural England's interim guidance.

Compensatory Measures

Natural England have restricted comments on the proposed compensation measures to the ecological likelihood of success of the proposed measure, particularly with respect to English SPAs.

4 Offshore Ornithology – impacts on English SPAs

Below is a table of key features, the conclusions of the Applicant regarding these, and Natural England's advice.

Site	Feature	Applicant's Approach	Natural England Advice
Coquet Island SPA	Seabird assemblage (puffin, kittiwake)	No AEoI	No AEoI
Farne Islands SPA	Guillemot	No AEoI (not screened in)	AEoI Alone
Farne Islands SPA	Seabird assemblage (puffin, kittiwake, razorbill)	No AEoI	AEoI Alone
Flamborough and Filey Coast SPA	Guillemot	No AEoI	AEoI in-combination (NE BDMPS approach)
Flamborough and Filey Coast SPA	Gannet	AEoI in combination	No AEoI
Flamborough and Filey Coast SPA	Kittiwake	AEoI in combination	AEoI in combination
Flamborough and Filey Coast SPA	Razorbill	No AEoI (not screened in)	AEoI in combination (NE BDMPS approach)
Flamborough and Filey Coast SPA	Seabird assemblage (puffin)	No AEoI	No AEoI

5 Offshore Ornithology – detailed comments

NE Ref	Topic	Comment	Natural England advice
1	General comment on assessment methodology: baseline surveys	Representativeness of baseline data Natural England note that the baseline survey period includes months before and during the recent highly pathogenic avian influenza (HPAI) outbreaks.	Natural England advise that, where baseline survey periods include months during and outside of the recent HPAI outbreaks, extra consideration should be given to the representativeness of the baseline data, and other datasets / information that could be used to contextualise the baseline should be included where possible.
2	General comment on assessment methodology: SPA connectivity	Distance between array and SPAs Natural England note that the Applicant has used the distance from the centre of the array to the centre of the colony when assessing connectivity between the array and SPA colonies for HRA screening (Part 3, Appendix 3A, Table 2.1, paragraph 12). Natural England advise that the shortest distance from the array boundary to the SPA boundary (as provided by the Applicant in Chapter 11, Table 11.6) is used when assessing connectivity for HRA screening. Natural England note that the use of the shortest distance between the array and the SPA boundary results in breeding puffin as a seabird assemblage feature of Flamborough and Filey Coast SPA being screened into the HRA, as the foraging range plus 1SD for puffin is 265.4km (Woodward et al 2019) and the distance between the array and Flamborough and Filey Coast SPA provided in Table 11.6, Chapter 11 is 248.5 km. We note that this would lead to the project having predicted impacts on breeding puffin at Flamborough and Filey Coast SPA.	Natural England advise that the shortest distance from the array boundary to the SPA boundary (as provided by the Applicant in Chapter 11, Table 11.6) is used when assessing connectivity for HRA screening.

3	General comment on assessment methodology: SPA connectivity	<u>Foraging ranges for guillemot and razorbill</u> Natural England note that the Applicant has used foraging ranges for guillemot and razorbill for sites other than Northern Isle colonies of 95.2km and 122.2km, respectively. Natural England note that this follows NatureScot's advice. However, Natural England advises the use of the Woodward et al (2019) foraging ranges plus 1SD for guillemot and razorbill for all colonies when assessing SPA connectivity: 153.7km for guillemot and 164.6km for razorbill. Natural England note that the use of our advised foraging ranges for these species results in breeding guillemot as a feature of the Farne Islands SPA and breeding razorbill as a seabird assemblage feature of the Farne Islands SPA being screened into the HRA. We note that this would lead to the project having predicted impacts on guillemot and razorbill at the Farne Islands SPA.	
4	General comment on assessment methodology: SPA connectivity	<u>Non-breeding guillemot</u> Natural England note that we advise BDMPS apportioning for non-breeding guillemot, and that following our advised approach would lead to non-breeding guillemot being screened in as a feature of the Farne Islands and Flamborough and Filey Coast SPAs. We note that the applicant has followed NatureScot's advice in the assessment and has provided an assessment of impacts on non-breeding guillemot at Flamborough and Filey Coast SPA to align with Natural England's request. However, we note that following Natural England's advised approach to apportioning of non-breeding guillemot would also result in the project having predicted impacts on guillemot at the Farne Islands SPA during the non-breeding season.	

5	General comment on assessment methodology: SPA connectivity	Non-breeding razorbill Natural England note that we advise BDMPS apportioning for non-breeding razorbill, and that following our advised approach would lead to non-breeding razorbill being screened in as a feature for Flamborough and Filey Coast SPA and as a seabird assemblage component for the Farne Islands SPA. We note that this would result in the project having predicted impacts on the seabird assemblage at Flamborough and Filey Coast SPA and at the Farne Islands SPA.	
6	General comment on assessment methodology: SPA connectivity	Non-breeding puffin Natural England note that non-breeding puffin have been excluded from the HRA screening. Natural England advise that non-breeding puffin be included in the HRA screening, and note that this would result in non-breeding puffin as a named component of the seabird assemblage being screened in for the Farne Islands SPA, Coquet Island SPA, and Flamborough and Filey Coast SPA.	
7	General comment on assessment methodology: SPA connectivity	Kittiwake at Coquet Island SPA Natural England note that kittiwake as a seabird assemblage component of Coquet Island SPA has not been screened in for assessment, despite being within foraging range of the array. Natural England advise that breeding and non-breeding kittiwake at Coquet Island SPA be screened in to the assessment. Natural England note that this would result in the project having predicted impacts on the seabird assemblage at Coquet Island SPA.	
8		HRA screening Natural England note that several features of English SPAs have been excluded during HRA screening that would be included if Natural England's advised approach were followed.	

		Natural England note that: • Using the Woodward et al (2019) foraging ranges plus 1SD for guillemot and razorbill, as advised by Natural England, results in the screening in of breeding guillemot (feature) and breeding razorbill (assemblage feature) at the Farne Islands SPA. • Non-breeding guillemot (feature) should be screened in for Farne Islands SPA. • Non-breeding razorbill (feature) should be screened in for Flamborough and Filey Coast SPA and non-breeding razorbill (assemblage feature) should be screened in for Farne Islands SPA. • Using the minimum distance between the array and the SPA boundary, as advised by Natural England, results in the screening in of breeding puffin (assemblage feature) at Flamborough and Filey Coast SPA. • Breeding kittiwake (assemblage feature) at Coquet Island SPA should be screened in as within foraging range. • Non-breeding puffin (assemblage feature) should be screened in for the Farne Islands SPA, Coquet Island SPA, Flamborough and Filey Coast SPA.	
9	General comment on assessment methodology: displacement	<u>Construction displacement</u> Natural England note that the applicant has not considered impacts of displacement during construction or decommissioning. Natural England advise that there are likely to be displacement impacts during construction and decommissioning, and currently advise that displacement at these times should be considered to be half the predicted impacts during operation and maintenance for impact assessment. Natural England note that the consideration of displacement impacts during construction and decommissioning would likely increase the predicted impacts on guillemot, razorbill, puffin, and gannet at English SPAs.	Natural England advise that there are likely to be displacement impacts during construction and decommissioning, and currently advise that displacement at these times should be considered to be half the predicted impacts during operation and maintenance for impact assessment.

10	General comment on assessment methodology: kittiwake displacement	Natural England note that the applicant has assessed kittiwake for displacement impacts, as per NatureScot's advice. Natural England do not currently advise assessment of displacement impacts for Kittiwake. Natural England note that excluding displacement impacts for kittiwake would likely reduce the predicted impacts on kittiwake at English SPAs.	
11	General comment on assessment methodology: auk displacement and mortality rates	<u>Displacement and mortality rates</u> Natural England note that the upper ends of the ranges of displacement and mortality rates used in the displacement assessment by the applicant in the "NatureScot Approach" are not as high as the upper ends of these ranges that Natural England would advise for guillemot, razorbill or puffin. The upper ends of the ranges used by the applicant in the "NatureScot Approach" to assess displacement of auks are a Displacement Rate of 60% and a Mortality Rate of 3-5% (breeding season for guillemot, razorbill and puffin) or 1-3% (non-breeding season for guillemot and razorbill only). The upper ends of the ranges advised by Natural England for guillemot, razorbill and puffin would be a Displacement Rate of 70% and a Mortality Rate of 10%, to be presented for all seasons in a matrix, with 30% displacement and 1% mortality as the lower end. Natural England note that assessing displacement impacts using the upper ends of the ranges advised by Natural England for displacement and mortality rates would likely increase the upper end of the predicted range of impacts on guillemot, razorbill, and puffin at English SPAs.	Natural England advises that for guillemot, razorbill and puffin, a Displacement Rate of 70% and a Mortality Rate of 10%, is to be presented for all seasons in a matrix, with 30% displacement and 1% mortality as the lower end.
12	General comment on assessment methodology: puffin displacement	Natural England note that no assessment of displacement impacts has been done for non-breeding puffin. Natural England advise that displacement impacts are assessed for puffin in the non-breeding season, and apportioned according to the BDMPS method. Natural England note that following the Natural England approach would likely increase predicted impacts on puffin at English SPAs.	Natural England advise that displacement impacts are assessed for puffin in the non-breeding season, and apportioned according to the BDMPS method.

13	General comment on assessment methodology: gannet collision	Natural England note that the applicant has not applied a macro-avoidance rate to the assessment of collision impacts on gannet. Natural England note that this follows NatureScot's advice, but highlight that Natural England advise the use of a range of macro-avoidance rates between 65 and 85% when considering gannet collision. Natural England note that following the Natural England advised approach would result in a significant decrease in the predicted impacts on gannet at Flamborough and Filey Coast SPA. As a result, we consider that AEoI can be ruled out, albeit with reduced confidence in-combination given the present uncertainty around the long-term impacts of HPAI.	
14	General comment on assessment methodology: apportioning	<u>Use of sabbatical rates</u> Natural England note that the applicant has excluded 'sabbatical birds' from the impact assessment, based on assumptions about the percentage of non-breeding adults in each population. Natural England note that we do not agree with the use of sabbatical rates to exclude sabbatical birds from impact assessment, nor do we consider the inclusion of sabbatical rates to be appropriate within the apportioning process. If there is clear evidence relating to the proportion of adults within the population likely to be taking a sabbatical in any given year, then this can be considered at the population modelling stage. The weight of evidence is on demonstrating: a. the proportion of breeding adults in the population likely to be taking a sabbatical in any given year b. whether the SPA population estimates include or exclude sabbatical birds, and c. whether or not sabbatical birds are likely to use the area of sea around the SPA colony. • This evidence can be used to inform whether/how sabbaticals are best incorporated in a PVA. However, in the absence of such evidence, Natural England's standard approach is to assume no sabbaticals, i.e. to assume all adult birds are breeding birds.	Natural England advise that all adult birds are assumed to be breeding birds within the impact assessment.

		Natural England note that the applicant has excluded 10% of kittiwakes, 10% of gannets, 7% of guillemots, 7% of razorbills and 7% of puffins from the impact assessment as 'sabbatical birds', without providing evidence in support of this approach of the kind outlined above. Natural England would therefore advise that all adult birds are assumed to be breeding birds within the impact assessment, and note that the inclusion of these excluded sabbatical birds in the impact assessment would likely increase the predicted impacts for kittiwake, guillemot, razorbill, gannet, and puffin at English SPAs.	
15	General comment on assessment methodology: apportioning	<u>Use of stable age apportioning</u> Natural England note that the applicant has apportioned birds to age classes according to stable age structure calculated from population models for many species and seasons. Natural England does not support the use of the stable age structure approach for age apportioning, due to: a. uncertainty regarding survival rates – in particular for immature age classes, b. lack of info about non-breeding adult components of populations, and c. the underlying assumption that populations are stable (which is not the case for many populations) Natural England therefore advise that, where possible, site-specific ageing data (e.g. from Digital Aerial Surveys, DAS) be used to age-apportion birds. Where this data is not available, Natural England advise that all 'adult-type' birds are apportioned as adults. Natural England note that the applicant has used the stable age approach to age-apportion guillemot, razorbill, puffin and immature kittiwake in the absence of site-specific data. Natural England note that this results in the exclusion from the assessment of 15.56% of kittiwake, 41.3% of guillemot, 37.7% of razorbill, and 45.6% of puffin. Natural England would advise that all 'adult-type' birds recorded in surveys be apportioned as adults. Natural England note that applying the Natural England approach and foregoing stable-age apportioning in the impact assessment would likely increase the predicted impacts for kittiwake, guillemot, razorbill, gannet, and puffin at English SPAs.	Natural England advise that, where possible, site-specific ageing data (e.g. from Digital Aerial Surveys, DAS) be used to age-apportion birds. Where this data is not available, Natural England advise that all 'adult-type' birds are apportioned as adults.

<table>
<tr>
<td>16</td>
<td>General comment on assessment methodology: apportioning of non-breeding guillemot</td>
<td>Natural England note that the approach taken to apportioning guillemot in the non-breeding season is that advised by NatureScot. Natural England generally advise that non-breeding guillemot are apportioned according to the BDMPS method. We note that the applicant has taken note of these different approaches and provided figures for the Natural England approach for non-breeding guillemot at Flamborough and Filey Coast SPA separately, which is appreciated. We note that these figures still do not represent the Natural England approach in full, given other differences in assessing displacement impacts, sabbaticals, and age apportioning detailed elsewhere. We also note that we would advise non-breeding guillemot at the Farne Islands SPA should also be apportioned according to the BDMPS method (as well as being considered for breeding season impacts).

Natural England note that, should the Natural England approach be applied, then there would be impacts apportioned to guillemot at Flamborough and Filey Coast SPA and at the Farne Islands SPA.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>General comment on assessment methodology: EIA impacts</td>
<td><u>EIA demographic rates and regional population sizes</u>

Natural England note that the Applicant has not used Natural England’s advised baseline mortality rates or reference populations for several species.

Natural England’s advised baseline mortality rates for EIA for these species are provided below:

<table>
<tr><th>Species</th><th>Mortality rate used by applicant</th><th>NE-recommended mortality rate</th></tr>
<tr><td>Kittiwake</td><td>0.1562</td><td>0.1577</td></tr>
<tr><td>Guillemot</td><td>0.1328</td><td>0.1405</td></tr>
<tr><td>Razorbill</td><td>0.1723</td><td>0.1302</td></tr>
<tr><td>Puffin</td><td>0.1764</td><td>0.1190</td></tr>
<tr><td>Gannet</td><td>0.1927</td><td>0.1866</td></tr>
</table>
</td>
<td></td>
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</table>

<table>
<tr><td></td><td></td><td>Natural England's advised reference populations for EIA for these species are provided below:

<table><tr><th>Species</th><th>Reference population used by applicant</th><th>NE-recommended reference population</th></tr><tr><td>Kittiwake breeding</td><td>261,047</td><td>839,456</td></tr><tr><td>Guillemot breeding</td><td>9,166,677</td><td>2,045,078</td></tr><tr><td>Gannet breeding</td><td>763,577</td><td>400,326</td></tr><tr><td>Razorbill breeding</td><td>54,552</td><td>158,031</td></tr><tr><td>Puffin breeding</td><td>279,803</td><td>868,689</td></tr></table></td><td></td></tr>
<tr><td>18</td><td>Interpretation of PVA outputs</td><td>Natural England note that there is uncertainty regarding population trends of kittiwake, guillemot, razorbill, gannet and puffin given recent and possibly ongoing impacts of highly pathogenic avian influenza.</td><td>Natural England advise there is therefore a need for a precautionary approach when interpreting PVA outputs in the context of predicted population trends.</td></tr>
<tr><td>19</td><td>General comment on assessment methodology: In-combination assessment</td><td>The applicant states: "It should be noted that the Culzean Floating Offshore Wind Turbine Pilot Project, Greater Gabbard, Gunfleet Sands 1 and 2, Inner Dowsing, Lynn, Methil Demo and Scroby Sands are currently operational. However, the operational consents for these projects expires before the Array becomes operational. These projects are therefore discounted from the in-combination assessment as there is no temporal overlap between the operational phases of these projects and the Array."

Natural England note that if these historic projects are re-powered, or maintained beyond current operational consents, those projects would require a consent from the relevant authority, and thus, would themselves produce new in-combination assessments that include the impacts of Ossian OWF. In that context, the Applicant's proposed approach is acceptable.</td><td></td></tr>
<tr><td>20</td><td>Conclusions regarding adverse effects on English SPAs</td><td><u>Farne Islands SPA</u>

Natural England advise that an adverse effect on integrity cannot be ruled out for the Farne Islands SPA due to impacts on guillemot from the project alone.

Natural England advise that adverse effect on integrity cannot be ruled out for the Farne Islands SPA due to impacts on populations of the seabird assemblage feature</td><td>Natural England advises that an Adverse Effect on Integrity cannot be ruled out for:

Farne Islands SPA
Guillemot
Seabird assemblage</td></tr>
</table>

		from the project alone, principally due to impacts on kittiwake, but also guillemot and potentially puffin. <u>Coquet Island SPA</u> Natural England advises that adverse effects on integrity can be ruled out for the seabird assemblage at Coquet Island SPA. <u>Adverse effects on site integrity at Flamborough and Filey Coast SPA</u> Natural England advise that adverse effect on integrity cannot be ruled out for Flamborough and Filey Coast SPA due to impacts on guillemot, razorbill and kittiwake from the project in-combination with other projects. Natural England advises that adverse effects on integrity can be ruled out for impacts on gannet at Flamborough and Filey Coast SPA from the project in-combination with other projects.	Flamborough and Filey Coast SPA • Guillemot • Kittiwake • Razorbill
21	General comment: mitigation	Given the scale of the predicted impacts of the projects on seabird features, Natural England advise that further consideration should be given to potential mitigation measures to reduce impacts, such as array reductions in areas with high densities of seabirds, changes to the design and / or layout of arrays or increasing the hub height of turbines.	Natural England advise that further consideration is given to potential mitigation measures to reduce impacts on bird features, such as array reductions, changes to design and layout of arrays, or increasing the hub height of turbines.

Annex B – Natural England's Comments on Compensation Measures

Natural England has not commented on the colony based measures, as the Applicant recognises these are of limited compensation value to English seabirds.

NE Ref	Topic	Comment	Natural England Advice
22	General comments on proposed compensation measures	Natural England note that no compensation measures have been proposed for guillemot, despite predicted impacts on this species being high. Natural England note that we advise we cannot rule out AEoI on guillemot at the Farne Islands SPA (alone or in-combination with other projects) or at Flamborough and Filey Coast SPA (in-combination).	We advise that the Applicant should develop and submit a without-prejudice derogation case for guillemot.
23		The Applicant proposes to delay production of the Compensation Implementation and Monitoring Plan (CIMP) to post-consent.	Natural England advises there is merit in the Applicant submitting a well-developed draft CIMP for consultation prior to the consent decision.
Compensation measure: mink control			
24	General comments on the ecological likelihood of success of the proposed compensation measure	While Natural England agree that there are likely to be some positive effects of mink control on kittiwake and razorbill populations, we consider that evidence does not support the applicant's position on the scale of the potential benefits. Natural England note that Burnell et al (2023) do not identify mink predation as a pressure on razorbill or kittiwake populations in the UK. We also note that neither Furness (2013), Furness (2021), or McGregor (2022) identify mink control as a measure likely to benefit UK populations of kittiwake or razorbill. Furness (2021) notes that mink eradication is "*not likely to be suitable as compensation for impacts on kittiwake except possibly in a very few limited locations*". Coulson (2011) states that "*predation by mammals on kittiwakes is extremely rare*".	Natural England advises that further information is needed in order to demonstrate that this measure will provide sufficient, measurable benefits to the national site network for these species.

		Natural England note that the applicant has cited a report of mink predation from Furness (2013) at St Abb's Head "*where the individual mink predated half of the kittiwake colony during one breeding season*". We note that Furness (2013) actually reports that "*predation by mink was thought to be responsible for the loss of half of the chicks in one monitoring plot*". One monitoring plot represents only a small proportion of the colony, and the report is also qualified as uncertain. Natural England note that Furness (2013) was only able to identify 2 records of mink predation at kittiwake colonies in Britain between 1986 and 2006, and that this suggests mink predation of kittiwake is a relatively rare occurrence. Furness (2013) states "*evidence suggests that relatively few kittiwake colonies could benefit from mink eradication*". Natural England note that there is some evidence of benefits of mink removal to razorbill populations in the Baltic archipelago, with razorbill returning to breed on some islands after mink were removed (Banks et al 2008, Nordström et al 2003, Nordström & Korpimäki 2004). We note that the applicant has cited Nordström et al (2003) and Thomas et al (2017) as sources for *"well-documented instances of substantial mink predation events",* however we do not agree that this statement is substantiated by those references. We highlight that Thomas et al (2017) do not mention either razorbill or mink. We note that the majority of the evidence provided relates to negative impacts of mink on other seabird species, such as black guillemot, gulls, and terns (Banks et al 2008, Furness 2013, MacDonald & Harrington 2003), and that no evidence has been provided of negative impacts of mink predation at UK razorbill colonies. We note that Johnston et al (2019) states that "*auks make up only a small proportion of the overall diet for Mink*". Natural England note that the applicant has stated (para 125 of Appendix 2) that *"mink may not have an easily detectable population-level impact on an SPA"* and that this statement appears to run contrary to their argument that mink removal will lead to substantial benefits on these species. Natural England note that, given the almost ubiquitous distribution of mink in the British Isles, there is comparatively little evidence of impacts of mink	

		predation on either razorbill or kittiwake. We note that this suggests either that mink do not habitually target these species as prey, and/or that monitoring levels are not currently sufficient to determine impacts.	
25	General comments on the ecological likelihood of success of the proposed compensation measure	<u>Assessment of scale of predicted benefits</u> Natural England note that the applicant has included a number of assumptions in their approach to quantifying an appropriate scale of implementation for this compensation measure. Natural England do not agree with several of these assumptions, most notably the assumption that mink will have equal access to all birds breeding at an SPA, and the assumption that one mink will predate 200 seabird chicks every breeding season. Natural England note that no evidence has been provided to support the assumption that mink will have equal access to all birds nesting within an SPA. Natural England note that the evidence suggests that the ability of mink to access razorbill or kittiwake nests will depend to a large extent on the topography of the site and the nest sites of the birds. We note that the applicant has stated (para 31, Appendix 1) that kittiwake nests *"are usually inaccessible to mammalian predators"* and suggested (para 37, Appendix 1) that mink incursions are likely to be limited to colonies containing *"sections of down-sloping, grassy patches".* Natural England note that it is likely under-precautionary to assume that all kittiwake and razorbill within each SPA can be accessed by mink. Natural England do not agree with the applicant that the assumption that every mink is likely to predate 200 seabird chicks at a colony every year is "*highly precautionary*" (para 94, Appendix 2). We note that the applicant clearly states that there is an *"absence of direct measures of predation rates at relevant sites"* (para 89, Appendix 2). We note that this assumption appears to be based on evidence of mink predation at tern colonies, which cannot be said to apply to cliff-nesting species such as razorbill and kittiwake, and on a single report from Iceland of 200 guillemot chicks being taken by a single mink. Given the almost ubiquitous distribution of mink in the British Isles, the fact that there are no quantified reports of predation on kittiwake or razorbill at UK colonies suggests either that mink do not habitually target	

		these species as prey, and / or that monitoring levels are not currently sufficient to determine impacts. Natural England note that it is likely under-precautionary to assume that each mink will predate 200 seabird chicks each year at SPAs.	
26	General comments on the ecological likelihood of success of the proposed compensation measure	Natural England note that the applicant has not defined a specific location or set of locations at which the proposed measure will be implemented. We note that the applicant has stated that this level of detail will be determined post-consent and included within the detailed CIMP. Natural England note that this level of detail is necessary to inform consideration of whether the measure can sufficiently compensate for the predicted impacts.	In English Offshore Windfarm Examinations, a draft CIMP is usually presented for consultation so that SNCB and other consultee feedback can strengthen the proposals. The Applicant may wish to consider whether this would assist Marine Scotland in determining whether the measures are sufficiently robust.
27	General comments on the ecological likelihood of success of the proposed compensation measure	Natural England note that no assessment has been made of the connectivity between Scottish SPAs at which the proposed measure may be implemented and the English SPAs for which impacts of the project are predicted (Farne Islands SPA, Flamborough and Filey Coast SPA). While we recognise the importance of maintaining the overall coherence of the national site network, we note that it may be important to consider the extent of such connectivity when determining the appropriate scale of compensation.	The Applicant should further consider at which colonies benefits might arise, and consider the likely level of connectivity between these and the impacted SPAs.
28	General comments on the ecological likelihood of success of the proposed compensation measure	<u>Level of precaution</u> Natural England note that the applicant has characterised their approach to quantifying the scale of the measure as “extremely precautionary”, for several reasons. In addition to the assumptions made in their approach to quantifying an appropriate scale of implementation (see our previous comments above), these include the high level of precaution already incorporated into the RIAA. Natural England note that we do not consider the RIAA to be highly precautionary, noting that many of the predicted impacts would be considerably higher if Natural England’s advised approach to the assessment were used (see comments in appendix A).	If natural England’s advised approach was followed, many of the predicted impacts would be considerably higher.

		Natural England note that the applicant also refers to negative impacts of mink that are not included in the approach to quantifying the scale of the measure, such as whole colony abandonment and predation of adult birds. Natural England note that the evidence provided of these impacts on kittiwake and razorbill is limited. However, we do agree with the applicant that the proposed measure is likely to benefit populations of other bird species.	
29	General comments on the ecological likelihood of success of the proposed compensation measure	<u>Monitoring</u> Natural England note that the applicant has stated: "*mink may not have an easily detectable population-level impact on an SPA. As a result, seabird populations and productivity will not be monitored. The metric that will ultimately be used to determine the success of the compensation measure will be mink-controlled habitat*" (para 125, Appendix 2). Natural England note the applicant's own statement on the lack of evidence of predation rates at relevant sites (para 89, Appendix 2), and highlight our concerns relating to the lack of evidence quantifying impacts of mink on razorbill and kittiwake populations, and to the assumptions made by the applicant in assessing the necessary scale of compensation. Natural England note that the success of the compensation measure should be determined based on the number of additional kittiwakes and razorbills in the relevant populations. Monitoring to determine the success of the measure should therefore include monitoring of abundance and productivity at relevant kittiwake and razorbill colonies. As such, we cannot currently agree with the applicant's statement in Table 5.6 of Appendix 2, that "*Monitoring will evidence the effectiveness of the measure*".	The Applicant should re-consider their proposed approach to monitoring and identify appropriate target colonies to monitor abundance and productivity, so that the effectiveness of the measure can be ascertained.

Compensation measure: seabird bycatch			
30	General comment on proposed compensation measure	While Natural England recognise the potential benefits of the proposed measure to UK gannet populations, we note that we are advising that AEoI on gannet at English SPAs can be ruled out. We therefore limit our comments on the proposed measure to potential benefits to razorbill populations.	Natural England advise that AEoI on gannet at English SPAs can be ruled out.
31	General comments on the ecological likelihood of success of the proposed compensation measure	<u>Connectivity between UK SPA network and razorbill in Portuguese waters</u> Natural England note that the applicant has stated that "*Any razorbill that are caught in Portuguese fisheries are likely to be related to the UK National Site Network as razorbills migrate south in the non-breeding season along the Atlantic coast and off the coast of Iberia (Wright et al 2012*" (para 76, Appendix 1). Natural England note that, while there is likely to be some overlap between razorbill populations breeding at UK SPAs and razorbill populations overwintering in Portuguese waters, the extent of this overlap is far from clear. We note that the current evidence suggests regional differences in overwintering movements, with the majority of UK SPA-breeding razorbill that overwinter as far south as Portugal breeding in the southwest of Britain, while the majority of razorbill breeding in the north of Britain wintering in the North Sea (Wernham et al 2002, Furness 2015). Recent geolocator tracking studies of 339 adult razorbill breeding at colonies around the north of Britain showed no non-breeding season locations further south than northern France (Buckingham et al 2022). While we recognise the importance of maintaining the overall coherence of the national site network, Natural England note that it may be important to consider the likely extent of this connectivity when determining the appropriate scale of compensation. We welcome the Applicant's proposed approach of incorporating studies of connectivity using stable isotope analysis to inform the appropriate scale of compensation.	Natural England advise that it is important to consider the likely extent of this connectivity when determining the appropriate scale of compensation

32	General comments on the ecological likelihood of success of the proposed compensation measure	<u>Age classes of razorbill with UK SPA connectivity present in Portuguese waters</u> Natural England note that the applicant has states that "*Adult birds are likely to be present in large numbers in their overwintering grounds*" and "*it is assumed that the overcompensation within the compensation ratios will account for the mortality of juvenile instead of adult birds"* (para 154, Appendix 2). Natural England note that the current evidence suggests that immature razorbill with UK SPA connectivity are more likely than breeding adults to winter further south, with the majority of ring recoveries from Iberian waters being of immature birds (Wernham et al 2002). This would appear to be supported by recent geolocator tracking data of adult razorbill breeding at colonies in the north of Britain, none of which were recorded further south than northern France during the non-breeding season (Buckingham et al 2022). We further note that there is a possibility that immature birds may be more vulnerable to bycatch mortality than adults (Wernham et al 2002). Natural England note that the likely proportions of different age classes of UK SPA razorbill in Portuguese waters should be considered when determining appropriate compensation ratios, and that determining age of bycaught birds should be considered as part of monitoring.	The proposed compensation ratios should be revisited with respect to the likely proportions of adult and juvenile razorbills wintering in Portuguese waters.
33	General comments on the ecological likelihood of success of the proposed compensation measure	Natural England note that there are currently no established techniques for reducing bycatch of razorbill in Portuguese fisheries with quantifiable benefits. We welcome the applicant's commitment to improving this situation by testing bycatch reduction techniques and establishing efficacy rates. However, we note that the lack of an established technique at this point in time leads to uncertainty over the deliverability of the measure, and increases the need for post-implementation monitoring and consideration of adaptive management measures.	The Applicant should factor in the current lack of mitigation measures into their compensation strategy, particularly with respect to monitoring and adaptive management.

34	General comments on the ecological likelihood of success of the proposed compensation measure	<u>Monitoring</u> Natural England note that the applicant has stated that "*the rigorous protocol that will be used to collect data on bycatch baselines and technique testing pre-implementation will not be considered necessary at the postimplementation stage. The metric of success of this measure will be the implementation of the reduction technique itself, with the subsequent benefit to gannet and razorbill determined based on the method outlined in section 6.3"* (para 171, Appendix 2). Natural England note that, given the current uncertainties around bycatch rates and the effectiveness of bycatch reduction techniques (noted by the applicant in section 6.3, Appendix 2), this is unlikely to be a sufficient level of post-implementation monitoring to determine the success of the compensation measure. Natural England note that the success of the compensation measure should be determined based on evidenced reductions in the number of razorbills bycaught in the relevant fisheries post implementation, with added consideration given to determining the age classes of bycaught razorbill and their likely connectivity to UK SPAs. Natural England note that we welcome the applicant's proposed approach of incorporating stable isotope studies to determine connectivity and advise that this should be included in post-implementation monitoring. As such, we cannot currently agree with the applicant's statement in Table 6.3 of Appendix 2, that "*Monitoring will evidence the effectiveness of the measure*".	The Applicant should update their proposed approach to post-implementation monitoring, to ensure that the efficacy of the measure is adequately demonstrated at this time.
35	General comments on the ecological likelihood of success of the proposed compensation measure	Natural England welcome the applicant's proposed collaborative, cross-border approach inherent in this proposal, and the potential benefits to English razorbill populations. However, we note that appropriate consideration needs to be given to the required scale of compensation and to post-implementation monitoring of its effectiveness.	See advice above.

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Annex C –Natural England's Interim guidance on Highly Pathogenic Avian Influenza (HPAI) outbreak in seabirds and Natural England advice on impact assessment (specifically relating to offshore wind)

November 2022

1. We are currently unclear what the short, medium and long-term effects of the 2022 HPAI outbreak will be on seabird colony abundance and vital rates (productivity and survival), though impacts at some English colonies in 2022 were likely substantial (e.g. emerging indications of estimates include adult mortality in ~30% of the UK's only roseate tern colony at Coquet Island SPA, and ~10% of Sandwich terns at the North Norfolk Coast SPA). We do not know the extent of population resilience – for instance, how many non-breeding birds might replace adults dying from HPAI in 2022 in future breeding seasons.

2. We expect HPAI to remain a threat to UK breeding seabirds (and terrestrial species of birds, especially perhaps wintering waterbirds) for the foreseeable future. It will take several years for data to be gathered on abundance, mortality and productivity, so we will need to work with imperfect knowledge in the interim.

3. The species understood to be of greatest relevance for imminent impact assessment of offshore wind farms in England are black-legged kittiwake, Sandwich tern, northern gannet, great black-backed gull, common guillemot and razorbill.

4. We expect seabird data collected prior to summer 2022 (approx. June) to remain a valid representation of 'typical' seabird distribution and density, as this was before mass mortality events began to take place. (At this point, we assume affected colonies will recover in the short or long term, depending on available recruits to colonies, scale of further outbreak, and other factors.) Data collected at sea from summer 2022 onwards will need discussion with Natural England, to understand how the species and colonies of concern, and their density at sea at certain times, may have been affected by HPAI. We welcome engagement with developers actively engaged in data collection through the Evidence Plan process.

5. Implications for data collection planned for projects beyond Round 4 will largely be site- and species-specific, and we recommend careful interpretation of results in consultation with Natural England. As the duration and severity of the epidemic is unknown and evidence will continue to accumulate over time, an iterative approach seems likely to be required.

6. Broadly, we expect any changes in abundance at colonies to be reflected proportionately in the at sea data. That is, it is reasonable to assume distribution patterns will remain broadly similar, but densities to change accordingly.

7. This assumption means that the scale of impact is likely to remain in proportion to the size of the colony. For instance, if a population were reduced by 10% then we would expect 10% fewer collisions. However, where a population has been significantly depleted, it should be considered whether an equivalent level of impact would have greater implications for the newly reduced population. Ideally this should be modelled through e.g. Population Viability Analysis as newly depleted populations could be less resilient and vulnerable to additional impact.

8. This would also reflect the likely need to ensure that the sea areas that support SPA (Special Protection Area) seabird colonies provide suitable conditions to restore populations where HPAI impacts have reduced population sizes, rather than simply maintain them. Natural England will aim to provide conservation advice that reflects any such changes.

9. Given the significant uncertainties about the health and resilience of seabird colonies introduced by HPAI, Natural England is likely to further emphasise the need to continue with a risk-based approach to its advice on additional impacts from development, particularly where populations have been significantly impacted. This is to ensure that the impacts of HPAI are not compounded by those from development.

10. This approach is also likely to be taken to compensation discussions. We are likely to recommend that the nature, scope and scale of compensatory measures reflect the uncertainties around population trends, recovery and resilience introduced by HPAI.

11. We need much more data, and urgently need all concerned with seabird conservation and related developments to fund monitoring of key variables at important colonies, so that collectively we can make best decisions about impacts and effects in the face of the threat from HPAI.

12. Natural England will shortly publish its advice to Defra underpinning an English Seabird Conservation and Recovery Plan, which includes direct recommendations for seabird recovery, some relating to disease as well as seabird monitoring.

13. We must work collectively to ensure that seabird populations are made more resilient to the type of catastrophic event caused by HPAI. This includes delivering the actions relating to feeding, breeding and survival as outlined in Natural England's recommendations to Defra in the English Seabird Conservation and Recovery Plan.

Annex D – Joint advice note from the Statutory Nature Conservation Bodies (SNCBs) regarding bird collision risk modelling for offshore wind developments

JNCC, Natural England, Natural Resources Wales, NatureScot. 2024. Joint advice note from the Statutory Nature Conservation Bodies (SNCBs) regarding bird collision risk modelling for offshore wind developments. JNCC, Peterborough.

https://data.jncc.gov.uk/data/f7892820-0f84-4e96-9eff-168f93bd343d/joint-sncb-crm-advice-note.pdf

NatureScot

Rosanne Dinsdale
Marine Directorate
Scottish Government
Marine Laboratory
Aberdeen
AB11 9DB

20 September 2024

Our ref: CNS REN OSWF Ossian

Sent by email only

Dear Rosanne,

OSSIAN OFFSHORE WIND FARM

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN

Thank you for consulting NatureScot on the Section 36 and Marine Licence applications submitted by Ossian Offshore Wind Farm Limited (the Applicant) for the proposed Ossian Offshore Wind Farm. These are accompanied by an Environmental Impact Assessment Report (EIA Report), Report to Inform Appropriate Assessment (RIAA), as well as a Derogation Case - submitted on a without prejudice basis.

The offshore transmission infrastructure will be subject to separate Marine Licence applications to Marine Directorate Licensing Operations Team (MD-LOT) and the Marine Management Organisation (MMO). We understand landfall is likely to be in Lincolnshire, with the onshore components subject to separate terrestrial planning applications in England.

It is unusual and has some risk attached that the application covers only the Array area and not the entirety of the project proposal. We understand that this is due to uncertainty around grid connection options, but it raises some concerns that not all the potential impacts will be assessed to enable full consideration of mitigation requirements for the proposal and from our perspective for Scottish interests in particular.

Policy context

Working within the context of a climate emergency and a biodiversity crisis, we seek to provide advice that is enabling and secures the right development in the right place with most benefit for climate change reduction and that which avoids damage, and where possible, achieves restoration and enhancement of biodiversity.

As a statutory consultee, NatureScot works in support of the Scottish Government's vision for a Blue Economy[1] with its six outcomes acting as focal points to ensure the marine environment supports ecosystem health, improved livelihoods, economic prosperity, social inclusion and wellbeing. We provide advice in the spirit of Scottish Government's ambition for offshore wind as outlined in the Sectoral Marine Plan for Offshore Wind published in 2020 and now undergoing an Iterative Plan Review (publication anticipated in 2025). The SMP aims to balance the promotion of the sustainable development of offshore wind, whilst protecting and restoring our biodiversity.

We support the current work of the Scottish Government in considering a new policy direction on nature positive requirements for offshore wind. We seek further consideration and engagement on what might be possible in terms of biodiversity enhancement that would also align with the renewable energy production aims and objectives of the proposal - in the context of the climate emergency and biodiversity loss crisis, if consented.

Background

The ScotWind Leasing Round was launched in June 2020 and has resulted in 20 projects being awarded leases with the potential energy generation of 27.6 GW. The Applicant proposes to develop a floating offshore wind farm as part of the ScotWind leasing round.

As detailed in Chapter 1 of the EIA Report, the Applicant was awarded the opportunity to develop the E1 East Plan Option Area from the ScotWind Leasing Round. Notably this is the first application for a large-scale offshore wind farm using floating foundation technologies.

Proposal

The proposed development is located approximately 80km southeast of Aberdeen. The wind farm Array will cover an area of approximately 859km^2. The proposal, which is following a project design envelope (PDE) approach, comprises:

- Up to 265 floating wind turbine generators (WTGs), to be installed on floating semi-submersible or tension-leg platforms, moored and anchored to the seabed.
- A maximum rotor blade tip height of 399m; a maximum rotor blade diameter of 350m and a minimum rotor blade tip to sea clearance of 36m.
- Up to nine anchors per each floating substructure, with one or a combination of the following anchor types: driven piles, suction anchors, or drag-embedment anchors (DEA):
    - Up to nine mooring lines per each floating substructure, comprising either catenary, semi-taut or taut,
    - Mooring and anchoring connectors and ancillaries, comprising Long Term Mooring (LTM) connectors, clump weights, buoys or buoyancy modules, in-line tensioners.

[1] Scottish Government (2022) *A Blue Economy Vision for Scotland*. Available at: https://www.gov.scot/publications/blue-economy-vision-scotland/ (Accessed 12 June 2024)

- Offshore Substation Platforms (OSPs) on fixed jacket foundations in one of two OSP arrangement scenarios:
    - 1 - up to 6 large HVAC/ HVDC OSPs, or
    - 2 - up to 3 large HVAC/ HVDC OSPs and up to 12 small HVAC OSPs.
- Scour protection for anchoring systems and OSPs.
- Subsea cables, comprising:
    - Inter-array cables with a maximum total length of 1,261km,
    - Subsea junction boxes with a maximum count of 228, and associated scour protection.
- Interconnector cables, within the Array, with a maximum total length of 236km, and
    - External cable protection comprising a mix of concrete mattresses and rock placement,
- Inter-array cable crossings, within the Array, with a maximum count of 12, and associated protection material, and
- An installed capacity of up to 3.6 Gigawatts (GW) with an anticipated operational life of 35 years.

The construction phase, including site preparation work, is expected to span a period of 8 years.

The operational phase is expected to be 35 years, which will include a programme of upkeep and maintenance of Array assets. When required, this will include the decoupling of WTGs from their moorings and towing to a suitable port for maintenance.

Decommissioning and Repowering are both briefly addressed in Chapter 3, and we welcome the commitment to develop a Decommissioning Plan (Table 3.34) which we advise should be predicated on full removal of all infrastructure in line with current policy.

Storage and assembly of turbines (wet storage)

It is noted in Paragraph 115 of the Project Description (Chapter 3) that wet storage/ anchorage of floating foundations will take place within the harbour limits of the fabrication yard/ integration port(s). These floating foundations will be towed to a final wind turbine assembly yard, where the full WTG will be assembled. Section 3.5 of the Project Description outlines the various operation and maintenance processes, including towing of WTGs to wet storage area of relevant harbours and ports for maintenance.

We anticipate, based on the recent note[2] on permitting requirements for this activity, that separate Marine Licences and assessment of associated impacts for storage areas outwith the Ossian Array may be required. No information, as yet is available on where or what the requirements for such areas will be. This is of concern, particularly as we are unable to provide any advice on likely requirements for baseline characterisation, which we know from experience requires significant lead-in time and may require baseline survey work of up to two years in duration, depending on location. As further information becomes available, we will be able to advise further.

[2] Licensing requirements for the storage and assembly of renewable energy devices - July 2024

Assessment approach

The Applicant has undertaken standard EIA which has generally followed our pre-application advice and published guidance with some exceptions. The information contained within the EIA Report and RIAA has been well laid out, which has aided our review and understanding of the information provided with the application, for which we thank the Applicant.

NatureScot advice

Offshore and intertidal ornithology – RIAA

For some elements of the RIAA, we are only able to provide interim advice. This is because the Applicant has mistakenly used the geometric centre element of the apportioning methodology to rescreen the original list of designated sites and qualifying species that have been taken through into the RIAA. This rescreening has resulted in some sites and qualifying species (as discussed in Section 3.1 of the RIAA) being screened out and as such assessment of impacts has been limited to EIA and not HRA for these.

To rectify, we require updated screening and reapportionment, with subsequent consideration of any requirement for further Population Viability Analysis (PVA). The reapportionment may also affect the regional assessment carried out under EIA, as below. We suggest that meeting with the Applicant to discussion this further would be valuable. Further advice is provided in Appendix A.

Despite this, we have used the current assessment to reach an interim view, where possible, for certain species and sites. This advice is subject to results of the re-screening, reapportionment and population analysis, as requested above.

Proposal alone assessment of RIAA – interim advice

With respect to Scottish Special Protection Areas (SPAs), we provisionally agree with the Applicant's conclusion of No Adverse Effect on Site Integrity *(*AEOSI) for proposal alone impacts for all marine bird species considered in the RIAA.

In-combination assessment of RIAA – interim advice

We mostly agree with the Applicant's conclusions for in-combination impacts. For the qualifying species and sites listed below, **we provisionally conclude AEOSI in-combination** with other offshore wind projects (Table 4.1 – RIAA) for:

- Kittiwake at Buchan Ness to Collieston Coast SPA,
- Kittiwake at East Caithness Cliffs SPA,
- Kittiwake at Forth Islands SPA,
- Kittiwake at Fowlsheugh SPA,
- Kittiwake at North Caithness Cliffs SPA,
- Kittiwake at St Abb's Head to Fast Castle SPA, with Berwick Bank,
- Kittiwake at Troup, Pennan and Lion's Heads SPA,
- Gannet at Forth Islands SPA.

Our review of the Counterfactuals of Population Size (CPS) output (and other factors) has generally enabled us to consider whether a clear conclusion can be reached (i.e. AEOSI or No AEOSI). However, in some instances this has not been the case, as the range of predicted impacts is large, reflecting the uncertainty within the assessment. This applies to the qualifying species and sites listed below, such that **provisionally we are unable to reach a conclusion of No AEOSI in-combination** with other offshore wind projects:

- Kittiwake at St Abb's Head to Fast Castle SPA, without Berwick Bank.
- Razorbill at Fowlsheugh SPA,
- Puffin at Forth Islands SPA,

We require a partial revised assessment, before we can advise on:

- Guillemot and herring gull at Buchan Ness to Collieston Coast SPA,
- Razorbill at East Caithness Cliffs SPA,
- Guillemot and razorbill at Forth Islands SPA,
- Guillemot and herring gull at Fowlsheugh SPA,
- Razorbill at North Caithness Cliffs SPA,
- Guillemot and razorbill at St Abb's Head to Fast Castle SPA,
- Razorbill and guillemot at Troup, Pennan and Lion's Heads SPA.

Assessment of Outer Firth of Forth and St Andrews Bay Complex SPA

We require a partial revised assessment, before we can advise on:

- Seabird species as qualifying features from functionally linked breeding colonies.

For those qualifying species most susceptible to disturbance from vessel movement, we agree there will be No AEOSI, noting our recommendation to further update the Vessel Management Plan, if consented.

Offshore and intertidal ornithology – EIA

Proposal alone assessment – interim advice

We agree with some of the Applicant's conclusions on significant adverse impact for proposal alone assessment under EIA – this includes herring gull, lesser black-backed gull, puffin and gannet. However, application of a 1% threshold, (not raised or agreed as part of the pre-application discussions and contrary to our guidance of at least 0.02 percentage point), to determine PVA requirements has meant we are unable to make a full assessment for alone impacts for:

- Kittiwake,
- Guillemot,
- Razorbill.

Once reapportionment has been carried out, consideration will be needed as to PVA requirements for these species.

Cumulative assessment - interim

We agree with some the Applicant's conclusion on significant adverse impact for cumulative assessment under EIA – this includes herring gull. We provisionally conclude that the cumulative effects are **significant in EIA terms**, with and without Berwick Bank, for:

- Guillemot through displacement,
- Razorbill through displacement,
- Puffin through displacement,
- Kittiwake through collision and displacement,
- Gannet through collision and displacement.

Once reapportionment has been carried out, as discussed above, consideration will be needed as to reviewing PVA requirements for these species.

Detailed advice on ornithology (RIAA and EIA) is provided in Appendix A as well as Annex 1A and 1B, with advice on the derogation case provided in Appendix G.

Marine mammals – EIA

The EIA Report concludes that there is a single impact pathway which may have **significant impacts on marine mammals** – injury and disturbance from underwater noise generated by unexploded ordnance (UXO) clearance through high order detonation. This impact pathway is relevant to the construction phase only and arises from the project alone and cumulatively with other projects. Secondary mitigation is proposed which needs further discussion and agreement. Advice is provided in Appendix B.

Fish and shellfish ecology – EIA

The EIA Report for fish and shellfish ecology concludes **no significant impacts, both alone and cumulatively** – we agree with these conclusions. Further advice is provided in Appendix C including a recommendation that basking shark are included as an additional target species for mitigation measures contained in the Marine Mammal Mitigation Plan, if consented.

Benthic subtidal ecology – EIA

The EIA Report for benthic subtidal ecology concludes **no significant impacts, both alone and cumulatively** – we agree with these conclusions. Further advice is provided in Appendix D including a recommendation for further consideration as to the suitability of the 0.4m target cable burial depth, in view of potential for re-exposure and EMF impacts.

Physical processes – EIA

The EIA Report for physical processes concludes **no significant impacts, both alone and cumulatively**, which we broadly support. However, there are important knowledge gaps around the topic of mixing and seasonal stratification which require further consideration in light of emerging evidence from the PELAgIO[3] project. We recommend further advice is sought from MD SEDD on this. The Ossian proposal could contribute to closing these knowledge gaps through pre- and post-consent monitoring, if consented, and we recommend this aspect is included in the Project Environmental Monitoring Programme. Further advice is provided in Appendix E.

[3] https://ecowind.uk/projects/pelagio/

Seascape, landscape and visual impacts (SLVIA) - EIA

We agree that SLVIA has been scoped out of the assessment. We expect the final layout, if consented, to be provided within the Design Specification and Layout Plan (DSLP).

Blue carbon – EIA

The EIA Report conclude **no significant adverse effects** with respect to disturbance to blue carbon stocks from the proposal, which we support. Further advice in provided Appendix F.

Next steps

As indicated above, we are unable to provide full ornithological advice until completion of re-apportionment and associated population viability assessments. Nevertheless, we anticipate reaching conclusions of an AEOSI for seabird species from a number of European sites alone and in-combination between this proposal and other offshore wind farms.

As a result, Marine Directorate will be required to undertake an Appropriate Assessment.

Compensatory measures

We welcome that the Applicant has initiated consideration of compensation measures, and we request ongoing involvement to advise on the ecological effectiveness of any required compensation measure(s).

Our understanding of the proposed project-specific compensation measures put forward by the Applicant is provided below, this includes our initial view on the principle of each measure. Further advice is provided in Appendix G.

Mink control in Scotland

The Applicant proposes to fund the continuation of the Scottish Invasive Species Initiative (SISI) Mink Control Project (MCP) with objectives to further intensify trapping effort and increase the geographical coverage of control areas targeting American mink - an invasive non-native species. This measure is largely preventative in nature, guarding against a potential future risk of predation by mink on kittiwake and razorbill adults and/or chicks.

In principle, subject to presentation of credible site-specific evidence, we advise further consideration of this measure by the Applicant. It does not mean that we necessarily support this measure for other projects.

Bycatch reduction in Portuguese waters

This measure proposes to reduce mortality of gannets and razorbills caught as bycatch in Portuguese waters through use of bycatch reduction techniques. Implementation would be in partnership with Portuguese Society for the Study of Birds (SPEA) who have historically monitored accidental bycatch in these waters. Implementation is contingent on:

- Funding from the Applicant for further data analysis as well as mitigation trials to establish bycatch rates,
- Confirmation of suitable method(s),
- Determining associated level of efficiency,

- Identification of target fisheries, and
- Securing uptake by fishers.

Further analysis is also required to validate likely connectivity between gannets and razorbills breeding in Scottish SPA colonies and those caught in bycatch during the non-breeding season in Portuguese waters. Based on our understanding of the available science, it is reasonable to conclude there is some connectivity for gannet however, we do not consider there is sufficient demonstratable evidence of connectivity between Scottish breeding razorbills and Portuguese waters.

While we agree the impact bycatch has on seabirds including the target species discussed, we note the many dependencies associated with this proposed measure, not least its international perspective. We are open to further discussion on this measure in terms of its ecological merit, and what this might mean for Scottish seabird colonies. To help with this, we seek further information from the Applicant to understand why bycatch reduction in Scottish waters has not been given greater priority and clarity from the Scottish Government as to whether or not bycatch reduction in Portuguese waters is securable.

Further information and advice

We hope this advice is helpful. Please contact Malcolm Fraser (malcolm.fraser@nature.scot / 0131 316 2629) or Karen Taylor (karen.taylor@nature.scot / 0131 316 2693) in the first instance for any further advice, copying in our marine energy mailbox – marineenergy@nature.scot.

Yours sincerely,

Redacted

Nick Halfhide
Director of Nature and Climate Change

NATURESCOT ADVICE ON OSSIAN OFFSHORE WIND FARM

Appendix A – Offshore and intertidal ornithology

Offshore and intertidal ornithological interests are considered in Chapter 11 and Appendixes 11.1 to 11.5 (together with supporting annexes) of the Ossian EIA Report, as well as Part 1, Part 3 and supporting Appendixes 3A (including Annex A) and 3B of the RIAA.

The EIA Report and RIAA provides sufficient detail on the methodology used for assessing key impacts and clearly lays out the consideration of significant effects and conclusion of Adverse Effect on Site Integrity (AEOSI). However, we have identified two key issues (one for EIA and one in the RIAA) related to re-screening, which will require further clarification, to finalise our advice.

Despite this, the supporting Appendices and Annexes provided to inform the EIA Report and RIAA are of good quality, transparent and consistent in content and presentation, which have enabled a thorough appraisal of the methodology, for which we thank the Applicant.

The RIAA concludes there will be:

- No AEOSI for proposal alone impacts, and
- Potential for an AEOSI for in-combination impacts for qualifying species across a number of SPAs.

We agree with some but not all of the Applicant's conclusions – where our provisional conclusions differ, we have outlined this as part of our advice below.

The EIA assessment for offshore and intertidal ornithology concludes:

- No significant impacts for project alone, and
- Cumulatively concludes a significant adverse effect on kittiwake resulting from displacement and collision effects (combined) when considered with Berwick Bank.

We are unable to reach a conclusion in relation to proposal alone impacts for guillemot, and disagree with the Applicant, as we conclude that there is potential for significant adverse effects cumulatively for guillemot, razorbill, puffin, kittiwake and gannet both with and without Berwick Bank.

Baseline characterisation

The Offshore Ornithology Baseline Report is provided in Chapter 11, Appendix 11.1. The Applicant undertook 2 years of Digital Aerial Surveys (DAS) across the wind farm footprint with a 4km buffer. The aircraft flew at an altitude of 550m, with a GSD of 2cm and analyses of the images was undertaken to provide a 10% coverage of the area flown. The methodology was agreed with NatureScot prior to commencement.

Surveys were flown from March 2021 to February 2023 inclusive, with missed surveys in May 2021 and February 2022, however, supplementary surveys were undertaken in early June 2021 and early March 2022, which is appropriate.

DAS were undertaken during mass mortality events that affected seabirds around the UK, notably the auk wrecks in 2021 and the ongoing HPAI outbreak. The Applicant makes note of these events

within Appendix 11.1. We note that there were 572 dead birds recorded with the majority being in July 2022 with 238 gannets and 239 large auks.

Report to Inform Appropriate Assessment (RIAA)

HRA screening

The RIAA draws on the HRA Screening Report (submitted to MD LOT on 13 March 2023), together with consultee feedback (as detailed in Table 1-2, RIAA).

We confirmed our agreement with the original LSE Stage 1 screening during pre-application, as per our advice issued 02 May 23. We were content with the sites and qualifying species screened in as per Table 4.4, Ossian Array - Stage 1: Likely Significant Effects Screening Report, received 16 March 2023. This used a straight-line distance between each SPA and the Array boundary and was sense-checked with the at-sea distance to determine connectivity as per Woodward et al (2023).

However, we have noticed in Section 3.1 of the RIAA, Paragraph 12, that this list has been rescreened. It notes:

For this RIAA, connectivity with breeding seabird colonies has been refined using a Geographic Information System (GIS) tool that measures at-sea distances from the geometric centre of the Array to individual breeding colonies (based on colony coordinates provided in Burnell et al., 2023), as required for apportioning following NatureScot (2018). This refinement has led to the following additional sites and species being ruled out for appropriate assessment, due to their at-sea distance being greater than their species- and site-specific foraging range, as recommended in NatureScot (2023d):

- *Guillemot at Buchan Ness to Collieston Coast SPA, Farne Islands SPA, Forth Islands SPA, Fowlsheugh SPA, St Abb's Head to Fast Castle SPA and Troup, Pennan and Lion's Heads SPA;*
- *Herring gull at Buchan Ness to Collieston Coast SPA and Fowlsheugh SPA;*
- *Kittiwake at Calf of Eday, Hoy SPA, Fair Isle SPA, Marwick Head SPA, Rousay SPA and West Westray SPA; and*
- *Razorbill at East Caithness Cliffs SPA, Forth Islands SPA, North Caithness Cliffs SPA, St Abb's Head to Fast Castle SPA and Troup, Pennan and Lion's Heads SPA.*

The use of geometric centre as a screening distance is incorrect and should only be used at the apportioning stage as it ensures there is even apportionment across sites. It should not be applied as a form of screening. There are a number of implications in using this approach. In particular, this means:

- Guillemot and herring gull have been screened out of the RIAA. The resulting difference in screening distance means all Scottish SPAs for these species are considered outwith foraging range. This is novel for guillemot, typically a key species of concern for offshore wind developments, as it has been excluded from any further consideration under HRA.
- For all of the sites / qualifying species screened out, it is unclear what this 'missing' impact means for conclusions on existing or new AEOSI. We need to understand the level of impact predicted with updated apportioning to provide final advice.

As a consequence of this we disagree with this approach to screening. We provide further advice below on other implications and outline the further clarification we require to enable conclusions to be reached.

Assessment approach

In this section, we provide advice with respect to the assessment undertaken in the RIAA by the Applicant.

Qualitative assessment

The following impact pathways were assessed qualitatively. We accept the approach undertaken by the Applicant and the conclusions reached, in respect of:

- Changes to prey availability,
- Artificial light,
- Entanglement.

Distributional responses (disturbances / displacement effects)

The distributional response and mortality rates included for consideration in the assessments are detailed in Table 5.3 (Section 5.2.2) of the RIAA. Two approaches have been presented, the Applicant's Approach and NatureScot Approach. These differ as summarised in Table 1 below.

Table 1: Displacement and displacement mortality rates (RIAA)

Species	NatureScot Approach (as per NatureScot 2023 guidance)			The Applicant's Approach		
	Birds displaced (%)	Breeding season mortality (%)	Non-breeding season(s) mortality (%)	Birds displaced (%)	Breeding season mortality (%)	Non-breeding season(s) mortality (%)
Gannet	70	1 and 3	1 and 3	70	1	1
Kittiwake	30	1 and 3	1 and 3	30	1	1
Guillemot	60	3 and 5	1 and 3	50	1	1
Razorbill	60	3 and 5	1 and 3	50	1	1
Puffin	60	3 and 5	N/A	50	1	N/A

The matrix approach (as per SNCB and NatureScot guidance) was used to quantitatively assess the impact of disturbance / displacement effects, as agreed during pre-application engagement. We are aware of recent work on displacement and a workshop is planned for the autumn (2024) bringing together academia, industry, government, NGOs and SNCBs to discuss recently completed research on this topic with a view to updating our guidance. The narrative provided to support the use of the Applicant's Approach to displacement in the assessments is noted. In our view, the emerging evidence regarding distributional responses is mixed, and insufficiently conclusive for us to change our guidance, at this point in time. This may change subject to conclusions from the workshop mentioned above. However, although our assessment is based on the NatureScot Approach, it is useful to have the Applicant's Approach for context and we have considered it.

Collision risk - Seabirds

Model and parameters

Section 5.2.2. (Paragraph 84 and 85) suggests that Collision Risk Modelling (CRM) for the RIAA was undertaken using Caneco et al (2022) performed using StochLab R package (V0.1.1) as per our advice. This differs from the approach used to inform CRM for the EIA (see EIA section below). The avoidance rates and associated parameters used in the collision assessment for the RIAA are provided in Table 3.2 of Appendix 11.2 of the EIA Report. In the RIAA, Paragraph 301 (Section 5.4.4) notes:

'However, it should be noted that there is considerable uncertainty around several of the key input parameters, including flight speed and avoidance rates. Therefore, in addition to the assessment value, a range of other input parameters has also been considered, as detailed in volume 3, appendix 11.2 of the Array EIA Report'.

Nevertheless, our understanding of the avoidance rates and associated parameters used by the Applicant within the collision risk assessment (in the RIAA) which has been termed 'SNCB Approach' align with Guidance Note 7 (NatureScot, 2023) and advice provided during pre-application. For the avoidance of doubt these are presented in Table 2 below. **We request this is confirmed by the Applicant.** Further advice on Appendix 11.2 is provided below (see EIA section).

Table 2: Avoidance rates used in the collision risk assessment

Parameter	Source	Gannet	Kittiwake	Lesser Black-Backed Gull	Herring Gull	Fulmar
Bird length	Robinson (2005)	0.94 (±0.0325)	0.39 (±0.005)	0.58 (±0.03)	0.60 (±0.0225)	0.45 ±0.025)
Wingspan	Robinson (2005)	1.72 (±0.0375)	1.08 (±0.0625)	1.42 (±0.0375)	1.44 (±0.03)	1.07 (±0.025)
Flight speed (m/s)	Alerstam et al (2007)		13.1 (±0.40)	13.1 (±1.90)	12.8 (±1.80)	
	Pennycuick (1987)	14.9 (±0.00)				13.0 (±0.00)
NAF	Wade et al (2016)	0.08 (±0.10)	0.375 (±0.0637)	0.375 (±0.0637)	0.375 (±0.0637)	0.75 (±0.00)
Flight type	NatureScot (2023)	Gliding	Flapping	Flapping	Flapping	Gliding
Proportion of flights upwind (%)	NatureScot (2023)	50	50	50	50	50
Avoidance rate (Basic model) (%)	Ozsanlav-Harris et al (2023)	0.928 (±0.0003)	0.928 (±0.0003)	0.9939 (±0.0004)	0.9939 (±0.0004)	0.928 (±0.0003)

Density estimates

Input densities for CRM were based, where available, on MRSea outputs with design-based used where necessary, as outlined in Appendix 11.4. We accept this approach.

Collision risk - migratory species

Our advice during pre-application was to undertake an assessment of collision risk to migratory species using the outputs from the project 'Strategic study of collision risk for birds on migration and further development of the stochastic collision risk modelling tool'. This consists of three work packages[4] of which only the first is complete.

The Applicant has undertaken both a qualitative and quantitative assessment of impacts to migratory species. The qualitative assessment follows our pre-application advice and is based on Woodward et al (2023)[5]. We agree with the narrative on connectivity and the migratory flight height / avoidance rates, as presented in Table 5.44 (Section 5.44). However, for 'Icelandic' Greylag goose we note that avoidance rate does not exactly match Woodward et al (2023) but do not consider that this would affect the conclusion presented.

Taiga bean goose

We are aware of emerging evidence, based on a single recent GPS track that Taiga bean geese may migrate through the proposed development from Scandinavian on route to wintering grounds in the Slamannan Plateau SPA. However, there is only limited information available on migratory behaviour for this species, including flight height and migratory routes can change dramatically based on weather. While it is unlikely to result in an AEOSI, it is difficult to draw any conclusions on the potential level of impact with any certainty.

Should Scottish Ministers be minded to grant consent, we advise:

- **Further consideration should be given to how the Applicant could contribute to strategic tagging and research to fill this evidence gap which may also be relevant to other East coast offshore wind developments.**

Apportioning

We note the approach that the Applicant has taken to undertake apportioning of impacts through the commentary provided in Paragraphs 64 – 66 of the RIAA. The method laid out in Paragraph 64 follows our guidance to a point, where, in the breeding season a theoretical approach was applied as laid out in our guidance (2018)[6]. In the non-breeding season, BDMPS (2015)[7] was used as the basis to apportion impacts other than for guillemot where our advice is to use the breeding season population. However, while this approach follows our guidance specifically for apportioning, we note (as per above) that the geometric centre element has also been applied to re-screen the Stage 1 LSE screening. **We do not agree with this step. Consequently, a number of sites and**

[4] WP1- Strategic review of birds on migration in UK waters – Woodward et al (2023). WP2 - Develop a stochastic CRM tool for migratory species. This has not yet been formally published by Marine Directorate. WP3 - Strategic assessment of migrant collision risk at Scottish and sectoral marine plan regional level under various scenarios. This will use the information from the WP1 review within the WP2 mCRM tool. It is not yet available.
[5] Strategic study of collision risk for birds on migration and further development of the stochastic collision risk modelling tool.
[6] Interim Guidance on apportioning impacts from marine renewable developments to breeding seabird populations in SPAs.
[7] Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS).

qualifying species have been excluded from the RIAA (as per section 3.1, Paragraph 12), as such the apportioned impact cannot be relied upon. The implications of this are:

- Guillemot and herring gull have been screened out of the RIAA - the difference in screening distance results in all Scottish SPAs being outwith foraging range. We also note that guillemot make up a large proportion of the overall birds seen during DAS.
- For kittiwake and razorbill, more of the impact has been apportioned to sites closest to the wind farm proposal. It is likely, for these closer sites, that the current conclusions are more precautionary. However, we are unclear if re-apportioning would change these conclusions.
- There will be apportioning inconsistencies for other proposed developments if the presented values are used.
- For those sites / species screened out, it is unclear what this 'missing' impact means for existing or new AEOSI. We would need to understand the level of impact predicted with updated apportioning.
- For Buchan Ness to Collieston Coast SPA and Fowlsheugh SPA, we anticipate AEOSI is likely for Guillemot, given advice for other recent offshore wind developments.
- The mortality values (under EIA) for herring gull are relatively small, therefore it is likely that the rescreening will not altered conclusions for this species. However, the apportioning should be updated to confirm that assessment through the RIAA is not required.
- For razorbill we have advised AEOSI or been unable to conclude No AEOSI in other recent offshore wind developments for most of the sites that have been screened out, and for kittiwake this applies to recent conclusions for West Westray SPA.

In considering this, we are of the view that the apportioning needs to be redone for the sites / species that were screened out via Section 3.1 (as above) and that PVAs requirements for these should be determined where the project alone or in-combination impacts meet or exceed a 0.02 percentage point decrease in annual adult survival (see below including Annex 1B).

Population Viability Analysis (PVA)

The approach the Applicant has used for undertaking PVAs is outlined in Paragraph 88 and 89. This follows our guidance where PVAs were undertaken when a 0.02 percentage point decrease in annual adult survival was met or exceeded – this can also be described as an increase of at least 0.02 percentage point in baseline mortality, we use this interchangeably. The assessment findings presented in the RIAA are those based on the lease period of the application (35 years) and that the 25-year and 50-year outputs are presented in Appendix 3b - this is appropriate.

However, we note in Paragraph 89 of the RIAA, the Applicant has suggested our threshold for undertaking PVAs is far exceeded by natural variation caused by environmental stochasticity. We prefer not to use a fixed threshold for PVA, as it risks missing a relatively small effect which could be significant because of local circumstances. Where a threshold is to be used, it should be set at a precautionary level to minimise this risk. On this basis therefore, we maintain our advice such that PVAs should be run for populations where the predicted wind farm associated mortality increases the baseline mortality rate by at least 0.02 percentage points.

Noting our advice on apportioning it is likely that further PVAs will be required once mortality has been re-apportioned. We provide more detail in Annex 1B to determine whether further PVAs are required, particularly for guillemot.

In-combination assessment

We are content with the tiered approach used to identify which projects have quantifiable data available to include within the in-combination assessment, as summarised in Table 4.1 (RIAA). We also note in Paragraphs 363 and 364 the Applicant's commentary on the recent Green Volt decision. The inclusion of these values are unlikely to change any conclusions reached for the in-combination assessment.

Similarly, we note that the Applicant has included mortality figures for West of Orkney (based on their recent application, submitted September 2023) in the in-combination assessment. However, these figures are incorrect and we anticipate a full reassessment with updated values will be submitted shortly.

The in-combination assessment will need to be revisited once the aforementioned re-apportioning of impacts has been undertaken. **In particular we will require PVAs to be undertaken where the project alone or in-combination impacts meet or exceed a 0.02 percentage point decrease in annual adult survival (as set out in Annex 1B).** This may result in the conclusion of AEOSI in-combination being reached for some additional sites and species, e.g. kittiwake, razorbill and guillemot.

NatureScot Interim Appraisal - RIAA

We have used the current assessment to reach an interim view, where possible, for certain sites and species. This advice is subject to results of the re-screening and re-apportionment, as requested above. In doing so, we note the use of the SNCB Approach, but we have also considered the results using the Applicant's Approach. For those sites and species outlined below we have used the current assessment, as presented, to reach an interim conclusion. Noting:

- The assessments are primarily based on the Counterfactual for Population Size (CPS) outputs from PVAs for the species where a PVA was required (based on 35 years, reflecting the application lease period). We have taken contextual information into account as detailed above when reaching conclusions, including the Counterfactual of Growth Rate (CGR) outputs.
- Our review of the CPS output (and other factors) has generally enabled us to consider whether a clear conclusion can be reached (i.e. AEOSI or No AEOSI). However, in some instances this has not been the case as the range of predicted impacts is large, reflecting the uncertainty within the assessment.

Proposal alone impact assessment

The Applicant has considered impacts from the proposal alone as outlined below.

PVAs were carried out for:

- Kittiwake at Buchan Ness to Collieston Coast SPA,
- Kittiwake, puffin and gannet at Forth Islands SPA,
- Kittiwake and razorbill at Fowlsheugh SPA,

- Kittiwake at St Abb's Head to Fast Castle SPA.

We note that no PVA's have been undertaken for guillemot or herring gull, nor have they been considered for kittiwake and razorbill at sites that were screened out (via section 3.1). PVA requirements for these sites / species needs to be determined once the updated apportioning is undertaken.

Our interim advice is that we agree with the Applicant and conclude, for proposal alone impacts:

- No AEOSI for kittiwake at Buchan Ness to Collieston Coast SPA,
- No AEOSI for kittiwake, puffin and gannet at Forth Islands SPA,
- No AEOSI for kittiwake and razorbill at Fowlsheugh SPA,
- No AEOSI for kittiwake at St Abb's Head to Fast Castle SPA.

Please see Table 1A in Annex 1A (Appendix A) below for a complete list of all qualifying species and sites, that we have been able to assess, based on the approach presented by the Applicant in the RIAA where, in line with the Applicants assessment, we provisionally agree conclusion of No AEOSI can be reached.

In-combination impact assessment

Our interim advice on in-combination PVA results and determination of AEOSI is provided below for each SPA and qualifying species (Tables 3 – 11) with a summary Table (Table 12) provided. The assessment has been undertaken, based on the qualifying species and sites as detailed in Table 4.1 in-combination for the following scenarios:

- All projects and plans including Berwick Bank; and
- All projects and plans without Berwick Bank.

Within the Tables provided below for each site, the NatureScot determination of AEOSI column is for both the in-combination assessment with Berwick Bank and the in-combination assessment without Berwick Bank unless otherwise stated.

In addition to considering the proposal alone mortality contribution as part of our assessment of in-combination effects, we also consider other factors such as:

- Short / long term colony trend,
- Qualifying species condition,
- Species life history,
- Proportional importance of species in Scotland and UK,
- Recent HPAI impacts,
- Climate change sensitivity.

It should be noted for kittiwake and gannet that the 'mortality from proposal alone' value presented in the Tables below is based upon the combined displacement and collision value presented in the RIAA. We have used this value as there is evidence that shows individuals of these species show variable responses to offshore wind farms, where some are susceptible to displacement and some collision. For mortality, the high annual total has been presented.

Buchan Ness to Collieston Coast SPA

Table 3: PVA results for Buchan Ness to Collieston Coast SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.828 – 0.856	0.861-0.876	6.6	AEOSI

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at Buchan Ness to Collieston Coast SPA, taking into account:

- The moderately low CPS values,
- The moderate contribution from the proposal to the in-combination total,
- The unfavourable condition of the species,
- The 19% population decline between Seabird 2000 and the Seabirds Count.

We note that the requested updates to screening and apportioning may require a PVA for guillemot and herring gull at Buchan Ness to Collieston Coast SPA.

East Caithness Cliffs SPA

Table 4: PVA results for East Caithness Cliffs SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.687-0.771	0.710-0.784	4.2	AEOSI

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at East Caithness Cliffs SPA, taking into account:

- The very low CPS values with and without Berwick Bank,
- A moderate contribution from the proposal,
- The favourable declining condition of the species,
- The 39% population decline between Seabird 2000 and the Seabirds Count at this site.

We note that the requested updates to screening and apportioning may require a PVA for razorbill at East Caithness Cliffs SPA.

Forth Islands SPA

Table 5: PVA results for Forth Islands SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.645-0.757	0.790-0.854	2	AEOSI
Puffin	0.865-0.975	0.878-0.977	6.9 – 11.5	Unable to conclude No AEOSI
Gannet	0.712-0.787	0.763-0.822	58	AEOSI

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at Forth Islands SPA. Our conclusion takes into account:

- The very low CPS values, especially with Berwick Bank,
- A moderate contribution from the proposal,
- The unfavourable declining condition of the species,
- A 22% population decline between Seabird 2000 and the Seabirds Count.

We are unable to conclude No AEOSI for puffin, based on the impact from displacement, at Forth Islands SPA taking into account:

- The moderately low CPS values,
- The large CPS range reflecting the uncertainty within the assessment,
- The moderate to high contribution from the proposal,
- The small but measurable contribution for the low mortality rate,
- The favourable declining condition of the species,
- A 39% decline between Seabird 2000 and the Seabirds Count.

We conclude AEOSI for gannet, based on the combined impact from collision and displacement, at Forth Islands SPA, taking into account:

- The very low CPS values,
- Ahe very high contribution of the proposal,
- Although the species is in favourable condition, the population has been heavily impacted by HPAI.

We note that the requested updates to screening and apportioning may require a PVA for guillemot and razorbill at Forth Islands SPA.

Fowlsheugh SPA

Table 6: PVA results for Fowlsheugh SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.666-0.797	0.813-0.862	6.6 – 9.8	AEOSI
Razorbill	0.746-0.946	0.785-0.956	16.9 – 28.4	Unable to conclude No AEOSI

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at Fowlsheugh SPA, taking into account:

- The very low CPS, especially with Berwick Bank,
- The moderate contribution of the proposal,
- The unfavourable declining condition of the species,
- A 51% decline between Seabird 2000 and the Seabirds Count.

Provisionally, we are unable to conclude No AEOSI for razorbill, based on the impact from displacement, at Fowlsheugh SPA, taking into account:

- The low CPS values for the high mortality rate,
- The large CPS range reflecting the uncertainty within the assessment,
- The high contribution of the proposal for the high mortality rate,
- However, we note that the species is in favourable condition and the population has increased since Seabird 2000.

We note that the requested updates to screening and apportioning may require a PVA for guillemot and herring gull at Fowlsheugh SPA.

Hermaness, Saxa Vord and Valla Field SPA

Table 7: PVA results for Hermaness, Saxa Vord and Valla Field SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Gannet	0.915-0.937	0.917-0.939	3.8	No AEOSI

We conclude No AEOSI for gannet, based on the combined impact from collision and displacement, at Hermaness, Saxa Vord and Valla Field SPA as the CPS values are sufficiently high.

North Caithness Cliffs SPA

Table 8: PVA results for North Caithness Cliffs SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.740-0.795	0.771-0.813	0.4	AEOSI

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at North Caithness Cliffs SPA, taking into account:

- The low CPS values,
- Unfavourable declining condition of the species,
- The small but measurable contribution for the high displacement mortality rate,
- A 45% decline in population between Seabird 2000 and the Seabirds Count.

We note that the requested updates to screening and apportioning may require a PVA for razorbill at North Caithness Cliffs SPA.

Noss SPA

Table 9: PVA results for Noss SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Gannet	0.918 – 0.941	0.922 – 0.944	2.1	No AEOSI

We conclude No AEOSI for gannet, based on the combined impact from collision and displacement, at Noss SPA as the CPS values are sufficiently high.

St Abb's Head to Fast Castle SPA

Table 10: PVA results for St Abb's Head to Fast Castle SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.180 - 0.354	0.869 - 0.911	2.7	AEOSI (with Berwick Bank) Unable to conclude No AEOSI (without Berwick Bank)

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at St Abb's Head to Fast Castle SPA with Berwick Bank. This is due to:

- The extremely low CPS values with Berwick Bank,
- The species is unfavourable declining at this site,
- A population decline of 68% between Seabird 2000 and the Seabirds Count.

Due to the extremely low CPS, we consider that there is no capacity for any additional mortality at St Abb's Head to Fast Castle SPA for kittiwake and thus advise a conclusion of AEOSI (with Berwick Bank).

We are **provisionally** unable to conclude No AEOSI for kittiwake, based on the combined impact from collision and displacement, at St Abb's Head to Fast Castle SPA, without Berwick Bank.

- The moderately low CPS values without Berwick Bank,
- The large CPS range reflecting the uncertainty within the assessment,
- The proposal's contribution to the mortality is moderate,
- The species is unfavourable declining,
- A population decline of 68% between Seabird 2000 and the Seabirds Count.

We note that the requested updates to screening and apportioning may require a PVA for guillemot and razorbill at St Abb's Head to Fast Castle SPA.

Troup, Pennan and Lion's Heads SPA

Table 13: PVA results for Troup, Pennan and Lion's Heads SPA

Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	Mortality from proposal alone (birds/annum)	NatureScot provisional determination of AEOSI
Kittiwake	0.798-0.854	0.828-0.872	3.3	AEOSI

We **provisionally** conclude AEOSI for kittiwake, based on the combined impact from collision and displacement, at Troup, Pennan and Lion's Heads SPA, taking into account:

- The low CPS values,
- The moderate contribution of the proposal,
- The unfavourable condition of the species,
- A 44% decline between Seabird 2000 and the Seabirds Count.

We note that the requested updates to screening and apportioning may require a PVA for razorbill and guillemot at Troup, Pennan and Lion's Heads SPA.

Summary of Tables 3-11

Table 12 below has been compiled by NatureScot to provide a summary of those SPAs for which we **provisionally** consider there is AEOSI or where we are unable to conclude No AEOSI in-combination with Berwick Bank or without Berwick Bank. Please note we have not used a threshold to reach our conclusions, instead our assessment includes aspects of precaution as well as relevant contextual information as provided in our conclusions above. For each CPS column,

high displacement mortality rate value followed by low displacement mortality rate value have been provided.

Table 12: Summary of in-combination assessment (SNCB Approach)

Population	Species	CPS (with Berwick Bank)	CPS (without Berwick Bank)	NatureScot provisional determination of AEOSI
Buchan Ness to Collieston Coast SPA	Kittiwake	0.828-0.856	0.861-0.876	AEOSI
East Caithness Cliffs SPA	Kittiwake	0.687-0.771	0.710-0.784	AEOSI
Forth Islands SPA	Kittiwake	0.645-0.757	0.790-0.854	AEOSI
	Puffin	0.865-0.975	0.878-0.977	Unable to conclude No AEOSI
	Gannet	0.712-0.787	0.763-0.822	AEOSI
Fowlsheugh SPA	Kittiwake	0.666-0.797	0.813-0.862	AEOSI
	Razorbill	0.746-0.946	0.785-0.956	Unable to conclude No AEOSI
Hermaness, Saxa Vord and Valla SPA	Gannet	0.915-0.937	0.917-0.939	No AEOSI
North Caithness Cliffs SPA	Kittiwake	0.740-0.795	0.771-0.813	AEOSI
Noss SPA	Gannet	0.918-0.941	0.922-0.944	No AEOSI
St Abb's Head to Fast Castle SPA	Kittiwake	0.180-0.354	0.869-0.911	AEOSI (With Berwick Bank) Unable to conclude No AEOSI without Berwick Bank
Troup, Pennan and Lion's Heads SPA	Kittiwake	0.798-0.854	0.828-0.872	AEOSI

Seabird assemblage features

For those SPAs which have a seabird assemblage feature, where we have **provisionally** concluded AEOSI for at least one named species of the seabird assemblage, then the same **provisional** conclusion is reached for the assemblage feature. Any named qualifying species of an assemblage

feature in an SPA is protected in their own right. The SPA conservation objectives are set for individual species rather than the assemblage and therefore the features should be assessed and any impacts concluded at the individual species level. This has been the established position in Scotland for quite some time, although we understand that this differs from the approach taken in England.

For the seabird assemblage feature (and named species) we therefore **provisionally** conclude AEOSI at:

- Buchan Ness to Collieston Coast SPA (kittiwake),
- East Caithness Cliffs SPA (kittiwake),
- Forth Islands SPA (kittiwake, puffin and gannet),
- Fowlsheugh SPA (kittiwake and razorbill),
- North Caithness Cliffs SPA (kittiwake),
- St Abb's Head to Fast Castle SPA (kittiwake),
- Troup, Pennan and Lion's Heads SPA (kittiwake).

This list may be subject to change pending the further clarification as a number of the species are named assemblage features at the SPAs where requested updates to screening and apportioning are required.

Outer Firth of Forth and St Andrews Bay Complex (OFFSAB) SPA

Functionally linked colonies

Our **provisional** assessment of impacts to the OFFSAB marine SPA breeding seabird qualifying species was undertaken with respect to the functionally linked breeding colony SPAs[8]. These are listed in Table 13 below along with the relevant species and the colony SPA conclusion for AEOSI.

Table 13: Summary of NatureScot interim conclusions for OFFSAB

SPA	Species (breeding)	NatureScot provisional determination for colony SPA conclusion
Buchan Ness to Collieston Coast	Kittiwake	AEOSI
Forth Islands	Kittiwake	AEOSI
	Puffin	Unable to conclude No AEOSI
	Gannet	AEOSI
Fowlsheugh	Kittiwake	AEOSI
	Razorbill	Unable to conclude No AEOSI
St Abb's Head to Fast Castle	Kittiwake	AEOSI with Berwick Bank Unable to conclude No AEOSI without Berwick Bank

[8] Conservation and Management Advice (2022) Outer Firth of Forth and St Andrews Bay Complex Special Protection Area (SPA)

Troup, Pennan and Lion's Heads	Kittiwake	AEOSI

This may be subject to change pending the further clarification as a number of the species are named assemblage features at the SPAs where requested updates to screening and apportioning are required.

Potential for vessel disturbance

The following qualifying species may be susceptible to disturbance from vessel activity: common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, Slavonian grebe and shag.

The location of ports / assembly yards as well as any requirement for anchorage (wet storage) for the operation and maintenance of the Array has not yet been determined therefore a worse-case scenario assumes that all vessel movements required for all phases of the project will pass through the Outer Firth of Forth and St Andrews Bay Complex SPA. This equates to up to up to 508 return vessel trips per year during operation and maintenance, which averages out at 1.4 return vessel trips per day and up to 977 return vessel trips per year during construction 2.7 trips per day during construction.

However, the Applicant concludes No AEOSI due to the existing high levels of vessel traffic. The apparent habituation shown by the waterbirds and seabirds (due to highest concentrations occurring in areas of high vessel activity), is such that they conclude that the impact of disturbance and displacement resulting from an additional 1.4 return trips (on average) adhering to existing shipping routes, where possible, during the operation and maintenance phase for the Array alone, will be negligible during the operation and maintenance phase. For those qualifying species most susceptible to disturbance from vessel movement (as above), we agree there will be No AEOSI, noting our recommendation to further update the Vessel Management Plan.

While we would ordinarily have expected to see an outline plan within the application documentation, we are aware that the location of the ports / assembly yards etc. has yet to be determined. Therefore, we are content, that this can be finalised through the discharge of consent conditions, as part of a vessel management plan, should consent, be awarded. Please note however, in considering this impact pathway for other nearby proposed wind farms, we require further monitoring of the qualifying species to better understand species distributions, populations and locations of moulting birds to inform requirements for spatial and / or seasonal mitigation depending on selection of ports and vessel transit routes. It would be helpful to continue to discuss further with the Applicant as further information becomes available.

Migratory species

We agree there will be No AEOSI to any of the qualifying species / site considered in the RIAA as per Table 5.46 – noting our recommendation above with respect to Taiga bean goose.

Next steps

We advise that apportioning needs to be updated for the sites and species that were screened out - section 3.1 (see below) and that PVAs for these should be run, if required, using the approach outlined in Annex 1B (Appendix A):

- Guillemot at Buchan Ness to Collieston Coast SPA, Farne Islands SPA, Forth Islands SPA, Fowlsheugh SPA, St Abb's Head to Fast Castle SPA and Troup, Pennan and Lion's Heads SPA,
- Herring gull at Buchan Ness to Collieston Coast SPA and Fowlsheugh SPA,
- Kittiwake at Calf of Eday, Hoy SPA, Fair Isle SPA, Marwick Head SPA, Rousay SPA and West Westray SPA, and
- Razorbill at East Caithness Cliffs SPA, Forth Islands SPA, North Caithness Cliffs SPA, St Abb's Head to Fast Castle SPA and Troup, Pennan and Lion's Heads SPA.

In our assessment, we have reached **provisional** conclusions of AEOSI to seabird species from a number of European sites all in-combination between this proposal and other offshore wind farms. In addition, there are some species / sites where we are **provisionally** unable to reach a definitive conclusion for this proposal in-combination with other offshore wind farms.

As a result, we advise Marine Directorate to undertake an Appropriate Assessment.

Our advice on the derogation case submitted is provided in Appendix G, noting that this has only considered impacts to kittiwake, razorbill and gannet. Consideration is likely to be required for puffin and guillemot as well.

Environmental Impact Assessment (EIA)

Baseline

Terns and petrels

Appendix 11.1 notes that for terns and storm petrel '*traditional survey methods are unlikely to capture the movements of migratory birds and therefore consideration will be given to potential impacts on this species during the migratory periods in the EIA'*. Appendix 11.2 notes, in Table 3.1, that '*abundance of these species is not adequately captured by traditional baseline surveys and instead is better suited for migratory CRM'.* However, we can find no assessment of these species in Appendix 11.2 (Annex B) and suggest this has been omitted by mistake.

From our own assessment, based on the low numbers seen during the DAS, we are content that impacts to these species from collision during migratory periods will not be significant under EIA. We do not require any further information from the Applicant on these species.

Guillemot

Guillemot make up a large proportion of the overall birds seen during DAS. It is noted from the model-based estimates of abundance presented in Table 6.18 in Chapter 11 (Appendix 11.1) that even outside the peak months there are at least several thousand guillemot seen within the Array footprint. We also note the number of auks observed in the DAS shows substantial variation between the first and second year of surveys.

Notably in July and August 2022, guillemot abundance was approximately 4 times higher in July and 30 times higher in August than observed in the same months the previous year. This was discussed during pre-application and attributed to post-breeding movements of guillemots away from breeding colonies. Subsequent agreement was reached on how this would be considered within the assessment such that:

- Data for August 2022 would be included in the non-breeding season assessment.
- Data for July 2022 would be included in the breeding season, although during pre app we suggested including it in breeding season together with qualitative narrative on the very large increase in numbers seen compared to the other breeding season months, and
- Data for July 2022 would also be included in the non-breeding season assessment. This was because there is some evidence that indicates the vast majority of guillemot fledging/ jumping on the East coast typically occurs from mid to late June, meaning that most birds have departed by mid-July (noting the survey date of 10 July 2022). Which suggests July 2022 data may indeed comprise of non-breeding birds.

However, the Applicant was unable to accommodate the latter point. It would be helpful to have this comparison, and we wish to discuss with the Applicant given the requirements for reapportioning, whether this is now possible.

Assessment approach

In this section, we provide below advice with respect to the assessment undertaken for the EIA by the Applicant. The points raised capture for the public record the key approaches and parameters used. Narrative is also provided on aspects of the assessment provided by the Applicant where this deviates in approach from our guidance, where further clarification is needed, and what this might mean for conclusions. In addition, we note a small number of errors.

Displacement - guillemot

Assessment was based on a regional population within the breeding season predicated on the approach used in the Hornsea 3 application - it assumes as no colonies are within foraging range that no breeding adults are present in the Array during the breeding season, and therefore all individuals present must be immature or sabbatical birds. However, as above, we have highlighted concerns regarding the approach used for screening out a number of guillemot colonies. The approach used to assess regional impacts to guillemot under EIA is likely to require updating in light of the reapportionment requirements discussed above.

We also request clarification of:

- The values in Table 4.22 and 4.23 (Appendix 11.3) differ from the values presented elsewhere in the assessment, which we have assumed is a typo.
- We surmise that displacement outputs in Table 4.22 have been calculated by including August 2022 in both the breeding and non-breeding seasons and omitted from the breeding season within other parts of the assessment as agreed. As such we have ignored the values in Table 4.22 and accepted a mortality of 490-817 for guillemot from displacement effects in the breeding season. **The Applicant should confirm our interpretation of this.**
- Within Appendix 11.4, Page 5 is missing, we assume this is a clerical error.

Collision risk – migratory species

As noted above (under RIAA) the migratory CRM tool is still under development. The Applicant has instead used the Wright et al (2012) SOSS-MAT model to undertake a quantitative assessment. We do not support the use of this model as SOSS-MAT is now out of date, and the migration corridors within Wright et al (2012) have been refined where possible and modified to reflect passage through Scottish waters. In the absence of the mCRM tool, we are content, for this proposal, that the assessment is qualitative in nature.

Collision risk - seabirds

It is not clear from Section 2.2 (Appendix 11.2) whether the update to the sCRM shiny app (Caneco 2022) has been used as the basis for the collision assessment. The Caneco model corrects minor errors within the McGregor et al (2018) model, in particular results for Option 2 did not correlate with the Band (2012) spreadsheet. Also, we note that the Applicant has not applied the large array correction factor as stated in Paragraph 17 (Appendix 11.2). This correction factor assumes that bird numbers reduce the further they travel into a wind farm array area. By not using this, it could lead to slightly higher collision estimates, however, this is unlikely to have a significant implication to the results and would typically have more of an impact if not included on a larger wind farm.

We acknowledge the commentary provided on flight speed in relation to Skov et al (2018), however as per our guidance, we recommend that flight speeds are derived from Alerstam (1997) or Pennycuick (1987). However, our reading of the assessment (under EIA) from Paragraph 52 (Appendix 11.2) is that flight speeds, in line with our guidance, have been used when undertaking the assessment for the SNCB Approach.

We note a number of errors, these include:

- Table 11.105 (Chapter 11) has been titled wrongly and assume this should be 'excluding' Berwick Bank - this is what our assessment is based upon.
- Within Appendix 11.2, we suggest there is an error in Tables 4.1 and 4.2 – for both Tables rows 4 and 6 claim to use Option 2, with an avoidance rate of 0.993 and a flight speed of 8.71, but present different results. Our assumption is that this is a typo and row 6 should have an avoidance rate of 0.994. **This should be clarified.**
- Within Appendix 11.2, for herring gull, we note for Tables 4.3 (monthly) and 4.4 (seasonal) that the annual total collisions should be the same between the two tables, however, the annual totals are much higher in Table 4.4 than in 4.3. Additionally, herring gulls were only recorded in November, but Table 4.3 has collisions appearing in January and December. The seasonal collisions for herring gull in the EIA Report (Table 11.27) match those presented in Table 4.4 in Appendix 11.2.
- There is also an error in the values used in the collision assessment for gannet for proposal-alone effects. In Table 11.84 (Chapter 11) it appears that the post breeding and breeding season figures, where Berwick Bank is included, have been swapped which has given the wrong outputs for increase in mortality. However, this error has not been pulled through the rest of the assessment and our conclusions are based on the displacement and collision in combination values.

PVA thresholds

The Applicant set an increase in baseline mortality of 1% as the threshold to undertake a PVA within the EIA, contrary to our guidance where a PVA should be triggered if the baseline mortality increases by at least 0.02 percentage point. The Applicant does provide reasoning as to this deviation, which in part follows guidance for assessment in England.

Our consideration of the implications of this approach are outlined below, including advice on further assessment requirements:

- For gannet and puffin, a significant proportion (<95%) of the impacted population has been apportioned to SPA populations and considered through HRA. We have concluded AEOSI or been unable to conclude No AEOSI. Any significant adverse effects for these species would be offset through the HRA derogation. **For these species we do not require further PVAs but will require updated mortality values based on the re-apportionment requirements discussed above.**
- For kittiwake and razorbill, we have identified concerns over the HRA screening that was applied incorrectly using aspects of apportioning guidance as discussed above. We note that under the approach presented by the Applicant, more of the impacted populations have been apportioned to non-SPA colonies. Either way, it is more difficult to obtain a conclusion on whether there is a significant adverse impact alone on the wider regional population. **Once reapportionment has been carried out, consideration will be needed as to further PVA requirements.**
- Due to the foraging range and apportioning approach used for guillemot, the Applicant has not considered guillemot through the HRA process. As there is connectivity to at least two SPAs with guillemot as a qualifying species, the reapportionment will influence the regional assessment for this species under EIA. **The assessment for this species will need to be updated.**

We note for all these species, a conclusion of significant adverse effects has been reached cumulatively (see below) and may also be met alone. As such, we would seek to discuss and agree appropriate mitigation (including offsetting/compensation), if required, to reduce as far as possible any significant environmental impacts. See Mitigation below.

We also note there is a possible error with Table 11.98. This table is within the kittiwake combined displacement and collision section but is labelled – 'Kittiwake 35 Year Cumulative PVA Results for Combined Displacement and Collision Impacts Including Berwick Bank on an Annual Basis'.

NatureScot Interim Appraisal - EIA

Proposal alone assessment

The Applicant has concluded that for all species assessed, none of the proposal alone impacts are significant in EIA terms. We agree with the Applicant's assessment in relation to the following species based on the increase in baseline mortality:

- Herring gull,
- Lesser black-backed gull.

As discussed above, we are content that further PVAs under EIA for proposal alone are not required for the following species, given <95% of the impacted populations have been apportioned to SPA populations and considered under HRA - neither species were affected by the incorrect screening approach either. We agree with the Applicant's assessment that proposal alone impacts are not significant in EIA terms for:

- Puffin,
- Gannet.

However, we are unable to make a full assessment based on what has been presented for:

- Kittiwake,
- Guillemot,
- Razorbill.

This is due to the application of a 1% threshold for undertaking PVAs which has meant no PVAs have been run for any of these species on a proposal alone basis. Application of at least a 0.02 percentage point increase in baseline mortality would, from our own appraisal, have triggered the need for PVAs for proposal alone effects as outlined in Table 14 below.

Table 14 – Project alone PVAs missing from assessment if NatureScot 0.02 threshold followed

Species	Season	Number of birds subject to mortality (range of low and high displacement scenarios)	Increase in Baseline Mortality (range of low and high displacement scenarios)
Kittiwake	Breeding	38 to 57	0.094 to 0.140
	Annual	54 to 79	0.041 to 0.061
Guillemot	Breeding	490 to 817	0.403 to 0.671
	Non-breeding	290 to 870	0.135 to 0.405
	Annual	780 to 1687	0.363 to 0.785
Razorbill	Breeding	47 to 78	0.500 to 0.830
	Post-breeding	9 to 27	0.009 to 0.026
	Annual	58 to 111	0.057 to 0.109

Cumulative assessment

PVAs, using the 1% threshold, were undertaken for six species – kittiwake, guillemot, razorbill, puffin, herring gull and gannet – for the cumulative assessment. The CPS values after 35 years, with and without Berwick Bank, are shown in Table 16 below. Values are provided for the SNCB Approach using high and low displacement mortality rates and the values using the Applicant's Approach are shown in brackets.

Table 16: CPS values for PVAs undertaken for the cumulative assessment (SNCB approach)

Species	Season	Cumulative assessment (annual output)	
		CPS median values	
		With Berwick Bank	Without Berwick Bank
Kittiwake*	Annual	0.6122 - 0.6872 (0.6872)	0.6944 - 0.7598 (0.7598)
Gannet*	Annual	0.7202 - 0.7854 (0.7853)	0.7392 - 0.8044 (0.8043)
Guillemot	Annual	0.6229 - 0.8169 (0.8940)	0.7081 - 0.8740
Razorbill	Annual	0.6382 - 0.8437	0.6789 - 0.8651
Puffin	Breeding	0.8070	0.8382
Herring Gull	Breeding	0.8153	not run

* Figure represents output for collision and displacement combined

The CPS values are low and of concern for all six species for both the high and low mortality rates using the SNCB Approach. The Applicant's values are also generally below 0.9, which is of concern.

For herring gull, we note however that the predicted contribution to the cumulative total is very low for both with and without Berwick Bank (0.55% - 0.61%). Therefore, we consider that the project's cumulative contribution for herring gull is **not significant in EIA terms.**

For gannet and puffin, we have concluded that the cumulative effects **are significant in EIA terms**, with and without Berwick Bank through collision and displacement for gannet and though displacement for puffin.

For kittiwake, razorbill and guillemot, the Applicant concluded that there were significant cumulative effects for kittiwake from the combined displacement and collision assessment when Berwick Bank is included. We agree with this but have provisionally concluded that the cumulative effects are likely to be **significant in EIA terms**, with and without Berwick Bank, for:

- Guillemot through displacement,
- Razorbill through displacement,
- Kittiwake through collision and displacement.

We came to this **interim** conclusion reviewing the CPS figures presented as well as consideration of other factors including recent mortality events and population trends.

Mitigation

In line with established EIA practice, we expect the full mitigation hierarchy to be considered where a significant adverse effect is identified. Our advice for kittiwake, puffin, razorbill and gannet as qualifying species of European sites provisionally concludes AEOSI. Without prejudging the outcome of the Appropriate Assessment, we anticipate, should consent to be granted for this proposal, that compensatory measures would need to be secured for these four species. Which we consider could be sufficient to address impacts predicted under EIA for these species. Guillemot did not feature within the RIAA, as discussed above. Therefore, as this has not yet been

resolved, we highlight the potential for a predicted significant adverse effect to this species, under EIA.

Should Scottish Ministers be minded to grant consent, we advise:

- **Further consideration is required as to how predicted impacts to guillemot can be addressed. This should be discussed and agreed with input from NatureScot and MD SEDD.**

In our review of the commitments and mitigation register (Annex 6.1) we note:

- For vessel management (Commitment 15), this is a direct copy from the Marine Mammal section and does not refer to birds at all. We recommend this is updated with any relevant marine ornithology specific comments.

Monitoring

We are disappointed that little consideration has been given to monitoring requirements. We welcome the contribution towards ScotMER, but recommend the Applicant considers linking specific topics that they could contribute to, with their predicted impacts and key species of concern - particularly in relation to post-breeding movement of auk and the Aukestra project. We also recommend the Applicant could contribute to strategic tagging and research to fill evidence gaps around Taiga bean geese.

Annex 1A (Appendix A)

European sites and qualifying species assessed in the RIAA

As noted in Appendix A above, we have a number of concerns with the approach used to compile the long list of European sites and qualifying species screened in into the RIAA.

Table 1A below contains a list of sites and species assessed in the RIAA and our subsequent conclusion of AEOSI, including those sites and species for which a conclusion of No AEOSI has been reached. Where a provisional conclusion has been reached, this is indicated. It has also not been possible to provide a final conclusion for all species that contribute to the seabird assemblage, this has been labelled as 'to be confirmed'.

Table 1A: European sites and qualifying species assessed in the RIAA and subsequent NatureScot provisional conclusion on AEOSI alone and in-combination.

SPA	Qualifying species screened in	NatureScot conclusion of AEOSI for proposal alone	NatureScot conclusion of AEOSI for in-combination
Buchan Ness to Collieston Coast SPA	Guillemot	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Herring gull	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Kittiwake	No AEOSI	AEOSI - provisional
	Seabird assemblage	To be confirmed	To be confirmed
Calf of Eday SPA	Kittiwake	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
Copinsay SPA	Kittiwake	No AEOSI	No AEOSI
	Seabird assemblage	No AEOSI	No AEOSI
East Caithness Cliffs SPA	Kittiwake	No AEOSI	AEOSI - provisional
	Razorbill	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	To be confirmed	To be confirmed
Fair Isle SPA	Gannet	No AEOSI	No AEOSI

	Kittiwake	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	To be confirmed	To be confirmed
Forth Islands SPA	Gannet	No AEOSI	AEOSI
	Kittiwake	No AEOSI	AEOSI - provisional
	Guillemot	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Razorbill	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Puffin	No AEOSI	Unable to conclude No AEOSI - provisional
	Seabird assemblage	To be confirmed	To be confirmed
Fowlsheugh SPA	Guillemot	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Herring gull	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Kittiwake	No AEOSI	AEOSI - provisional
	Razorbill	No AEOSI	Unable to conclude No AEOSI - provisional
	Seabird assemblage	To be confirmed	To be confirmed
Hermaness, Saxa Vord and Valla Field SPA	Gannet	No AEOSI	No AEOSI
	Seabird assemblage	No AEOSI	No AEOSI
Hoy SPA	Kittiwake	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
Marwick Head SPA	Kittiwake	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
North Caithness Cliffs SPA	Kittiwake	No AEOSI	AEOSI - provisional

	Razorbill	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	To be confirmed	To be confirmed
North Rona and Sula Sgeir SPA	Gannet	No AEOSI	No AEOSI
	Seabird assemblage	No AEOSI	No AEOSI
Noss SPA	Gannet	No AEOSI	No AEOSI
	Seabird assemblage	No AEOSI	No AEOSI
Outer Firth of Forth and St Andrews Bay Complex SPA	Gannet	No AEOSI	AEOSI
	Guillemot	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Puffin	No AEOSI	Unable to conclude No AEOSI - provisional
	Kittiwake	No AEOSI	AEOSI - provisional
	Razorbill	No AEOSI	Unable to conclude No AEOSI - provisional
	Seabird assemblage	To be confirmed	To be confirmed
Rousay SPA	Kittiwake	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
St Abb's Head to Fast Castle SPA	Kittiwake	No AEOSI	AEOSI - provisional with Berwick Bank
			Unable to conclude No AEOSI - provisional without Berwick Bank
	Razorbill	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Guillemot	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	To be confirmed	To be confirmed
St Kilda SPA	Gannet	No AEOSI	No AEOSI
	Manx shearwater		
	Seabird assemblage	No AEOSI	No AEOSI

Sule Skerry and Sule Stack SPA	Gannet	No AEOSI	No AEOSI
	Seabird assemblage	No AEOSI	No AEOSI
Troup, Pennan and Lion's Heads SPA	Guillemot	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Kittiwake	No AEOSI	AEOSI - provisional
	Razorbill	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	To be confirmed	To be confirmed
West Westray SPA	Kittiwake	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
	Seabird assemblage	Not assessed in RIAA through incorrect screening	Not assessed in RIAA through incorrect screening
Cameron Reservoir SPA and Ramsar Site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
Din Moss - Hoselaw Loch SPA and Ramsar site	Greylay good (non-breeding)	No AEOSI	No AEOSI
	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
Fala Flow SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
Firth of Forth SPA and Ramsar site	Bar-tailed godwit (non-breeding)	No AEOSI	No AEOSI
	Golden plower (no-breeding)	No AEOSI	No AEOSI
	Knot (non-breeding)	No AEOSI	No AEOSI
	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
	Red-thraoted diver (non-breeding)	No AEOSI	No AEOSI
	Redshank (non-breeding)	No AEOSI	No AEOSI
	Sandwhich tern (non-breeding (passage))	No AEOSI	No AEOSI
	Slavonian grebe (non-breeding)	No AEOSI	No AEOSI
	Turnstone (non-breeding)	No AEOSI	No AEOSI
	waterbird assemblage (non-breeding)	No AEOSI	No AEOSI

Firth of Tay and Eden Estuary SPA and Ramsar site	Bar-tailed godwit (non-breeding)	No AEOSI	No AEOSI
	Greylay good (non-breeding)	No AEOSI	No AEOSI
	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
	Redshank (non-breeding)	No AEOSI	No AEOSI
	waterbird assemblage (non-breeding)	No AEOSI	No AEOSI
Gladhouse Reservoir SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
Greenlaw Moor SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
Holburn Lake and Moss SPA and Ramsar site	Greylay good (non-breeding)	No AEOSI	No AEOSI
Loch of Kinnordy SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
	Greylay good (non-breeding)	No AEOSI	No AEOSI
Loch Leven SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
	Shoveler (non-breeding)	No AEOSI	No AEOSI
	Whooper swan (non-breeding)	No AEOSI	No AEOSI
	waterbird assemblage (non-breeding)	No AEOSI	No AEOSI
Montrose Basin SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
	Greylay good (non-breeding)	No AEOSI	No AEOSI
	Redshank (non-breeding)	No AEOSI	No AEOSI
	waterbird assemblage (non-breeding)	No AEOSI	No AEOSI
Slamannan Plateau SPA	Taiga bean goose (non-breeding)	Unlikely to be AEOSI	Unlikely to be AEOSI
South Tayside Goose Roosts SPA and Ramsar site	Greylay good (non-breeding)	No AEOSI	No AEOSI
	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI

	Wigeon (non-breeding)	No AEOSI	No AEOSI
	waterbird assemblage (non-breeding)	No AEOSI	No AEOSI
Westwater SPA and Ramsar site	Pink-footed goose (non-breeding)	No AEOSI	No AEOSI
	waterbird assemblage (non-breeding)	No AEOSI	No AEOSI

Annex 1B (Appendix A)

Identifying the requirement for PVA – NatureScot Guidance Update

Within both Environmental Impact Assessments (EIA) and Habitat Regulations Appraisals (HRA), the predicted impacts of offshore wind developments need to be considered against relevant marine bird populations. The primary method used for assessing the population consequences in these assessments is Population Viability Analysis (PVA).

Our advice on the requirement for PVA is as follows.

Project alone impacts

- PVAs will be required for all sites and species where the project alone impacts equal or exceed a 0.02 percentage point change in combined breeding and non-breeding season adult survival rate (*i.e. a ≥0.02 percentage point decrease in survival rate or a ≥ 0.02 percentage point increase in mortality rate*).

- This could apply to any level of project alone mortality, though in reality it is unlikely that a very low project alone mortality will meet this threshold. However, annual adult mortality and changes in adult survival rate values should be presented for all sites and species, thereby providing clarity on when PVA is required.

In-combination impacts

- PVAs will generally be required for all sites and species where the in-combination impacts equal or exceed a 0.02 percentage point change in combined breeding and non-breeding season adult survival rate. (i.e. a ≥0.02 percentage point decrease in survival rate or a ≥ 0.02 percentage point increase in mortality rate).

- ***The exception to this is where the project contribution to the in-combination impact is less than 0.2 birds per annum***. In this case the impact from the individual project is deemed to not make a tangible contribution to the in-combination impacts and therefore a PVA is not required.

- Where the project contribution is less than 0.2 birds per annum, a table should be provided that details by site and species the percentage point changes in adult survival rate and the number of birds impacted per annum. This is to allow for this data to be used in future in-combination assessments for other developments, where necessary.

The threshold of 0.02 percentage point decrease in adult annual survival rate applies to both EIA and RIAA assessments.

Figure 1 below illustrates this process and example scenarios are shown in Table 1 thereafter.

Figure 1. Identifying the requirement for PVA.

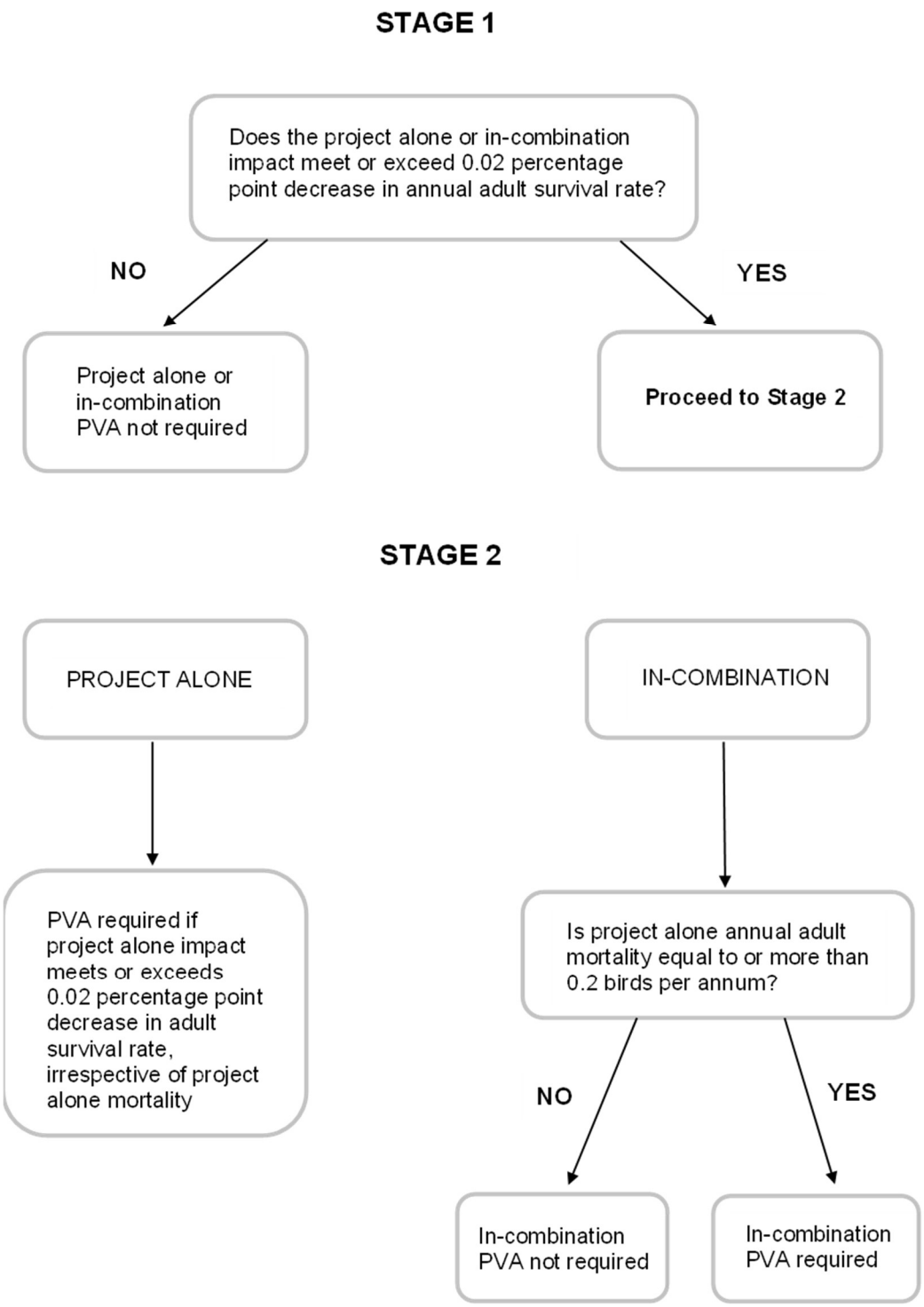

Table 1. Scenarios for PVA thresholds.

Project alone percentage point decrease in annual adult survival rate	In-combination percentage point decrease in annual adult survival rate	Project alone estimated mortality (birds per annum)	Project alone PVA required?	In-combination PVA required?
<0.02	<0.02	any	No	No
<0.02	≥0.02	<0.2	No	No
<0.02	≥0.02	≥0.2	No	Yes
≥0.02	≥0.02	≥0.2	Yes	Yes

Context for the 0.2 birds per annum threshold

The 0.2 birds per annum threshold for in-combination PVA comes from Secretary of State advice and is in line with the rest of the UK.

This threshold may be considered precautionary. However, it is important to look at PVA counterfactuals even when there is only a small project contribution, as we consider this along with several other factors, including:

- Proposed development scale and location,
- Colony and species-specific contextual elements,
- Long-term colony trends,
- Short-term colony trends,
- Species life history,
- Proportional importance of species in Scotland and UK,
- HPAI and mortality event impacts (e.g. wrecks),
- Climate change sensitivity,
- Confidence in the environmental impact assessment undertaken.

Due to the high number of offshore wind projects currently being developed, there is potential for even very small additional mortality to be of concern for certain species at certain sites.

NATURESCOT ADVICE ON OSSIAN OFFSHORE WIND FARM

Appendix B – Marine mammals

Marine mammal interests are considered in Chapter 10 and supporting Appendices 10.1, 10.2, 10.3, and 22 (Marine Mammal Mitigation Plan) together with Chapter 20 (Inter-related effects) of the Ossian EIA Report, as well as Parts 1 and 2 of the RIAA.

For most impacts the EIA assessment for marine mammals concludes no significant impacts, **both alone and cumulatively – for which we agree with one exception relating to UXO clearance.** A preference for low order detonation is outlined, which we support, and the worst-case scenario assessment from a high order detonation predicted a significant adverse effect. Secondary mitigation is proposed in response, however we do not support the detail of the proposed measures – further advice on this is provided below.

Our advice on the bottlenose dolphin qualifying species of the Moray Firth Special Area of Conservation (SAC) as well as the minke whale qualifying species of the Southern Trench nature conservation Marine Protected Area (ncMPA) is included in this Appendix.

In this Appendix, we provide comments and advice which address elements of the assessment process but does not affect the outcome of the assessment or the overall conclusion of our advice. It does highlight areas where further action is recommended should Scottish Ministers be minded to grant consent (see bullets below).

Study area

Section 10.3 of Chapter 10 sets out the two marine mammal study areas used in the assessment. The Array marine mammal study area encompasses the site plus an 8km buffer, which corresponds with the Digital Aerial Survey (DAS) study area. The Regional marine mammal study area encompasses the wider northern North Sea. These align with the Scoping Opinion requirements.

Baseline characterisation

We have no substantive comments on baseline characterisation.

Within Section 10.7, Table 10.13 presents baseline summaries for key marine mammal species, including a range of density estimates from published papers, site-specific DAS, SCANS III and SCANS IV for some species. These summaries are supported by full species accounts in Appendix 10.2, Section 5, which include comparisons of density estimates and justification for which density estimate has been taken forward into assessment.

We support the data sources and methods that have been used throughout, and we are content with the way in which density estimates have been derived and selected for assessment.

Assessment approach

EIA sensitivity and magnitude criteria

Magnitude criteria for marine mammals are set out in Table 10.19 (Section 10.9) and sensitivity criteria in Table 10.20. These are combined into an assessment matrix in Table 10.21. We are content that these are reasonable, well-evidenced and logical. As has been done for other wind farm developments, (embedded) mitigation has been applied when considering magnitude. While

there remains a debate as to the appropriateness of this, we have focussed instead on the outcome of including the proposed mitigation and what this means for the significance of effect conclusion.

Underwater noise technical report (Appendix 10.1)

The underwater noise modelling report covers geophysical and geotechnical surveys, impact piling, drilled piling, Unexploded Ordnance (UXO), vessels and other non-impulsive sources, and operational noise. It provides a clear, detailed explanation of the approach used, and the results of the modelling.

The approach taken for underwater noise modelling for piling uses the von Pein et al. (2022) method, which uses existing measured data from similar piling activities and scales this depending on a range of parameters. We are content with this approach, and supported it's use during pre-application discussions with the Applicant. The rest of the modelling process (propagation modelling, use of dual metrics, etc) is in line with what has previously been agreed with the Applicant.

The predicted PTS injury distances for piling align with distances predicted by other development proposals. The predicted instantaneous injury (based on SPLpk) is within the distance of mitigation for all species. The largest zone of injury (based on SELcum) is for minke whales and is beyond the area that can be mitigated by Acoustic Deterrent Devices (ADDs) or Marine Mammal Observer (MMO) / Passive Acoustic Monitoring (PAM). However, we accept that SELcum provides an over-estimate of ranges, due to the level of conservatism in the modelling and note that the reasons for this are well explained in Chapter 10, Paragraphs 116-121. Recent noise monitoring at other developments during construction supports this. We are content that the potential risks to minke whales from cumulative PTS injury will, in reality, be less than predicted by the modelling, and agree that mitigation should be focused on reducing the instantaneous injury risk.

Modelling of piling activities considered a range of scenarios, including single and concurrent piling, with hammer energies of 3,000 kJ for turbine foundations and 4,400 kJ for OSP foundations. The results for SELcum are presented for scenarios with and without 30 minutes of ADD use. It is useful to see the results presented in this way.

For UXO clearance, predicted PTS zones, based on high order detonation, are large for some species, and additional mitigation is proposed to try to reduce this impact - see Marine Mammal Monitoring Plan (MMMP) below.

For all other activities modelled (other than impact piling and UXO), predicted injury and disturbance ranges are relatively small and potential impacts are likely to be minimal. We agree with the conclusions of minor significance.

Marine mammal technical report (Appendix 10.2)

This is a well-presented, thorough review of existing and site-specific data. We have no specific advice on this document.

Marine mammal iPCoD modelling report (Appendix 10.3)

This provides a clear explanation of the modelling process for iPCoD, and clear presentation of results.

In section 2.2, common dolphin is incorrectly listed as one of the key species, and white-beaked dolphin has been omitted. However, this makes no difference to the rest of the report as neither of these species are currently modelled by iPCoD.

The assessments of impact are carried out based on the whole MU population estimates, rather than the UK portion of population as we have seen recently elsewhere. However, we provided Scoping advice on this approach prior to a change in our advice. We now advise developers to consider both the whole MU and the UK portion, in order to better represent the likely size of populations affected by the potential impact pathways. However, we are content with the approach that has been used.

In addition, we highlight an inconsistency between statements in this report and in Chapter 10.

- Paragraphs 41 and 42 in Appendix 10.3 state that the iPCoD modelling incorporated the predicted residual number of individuals potentially affected by PTS, based on designed-in mitigation measures which are listed as soft start and ramp up only (i.e. not with ADD use).
- Paragraph 137 in Chapter 10 states "*The numbers of animals for injury taken forward to iPCoD modelling therefore was based upon those with implementation of 30 minute of ADD*".

We request clarification on which of these statements is correct. It may not make significant difference to the outcomes of the iPCoD modelling, but it would be good to be clear as to exactly how the modelling was done.

Impact assessment

Advice is provided below on the assessment of specific impact pathways.

We are content with the assessment and conclusions presented for the following:

- Injury and disturbance from underwater noise generated during piling,
- Injury and disturbance due to site-investigation surveys (including geophysical surveys),
- Injury and disturbance from underwater noise generated during vessel use and other noise producing activities,
- Injury due to collision with vessels, and,
- Injury and disturbance from underwater noise generated during the operation of floating wind turbines and anchor mooring lines.

Further advice is provided on the remaining pathways, as below.

Injury and disturbance from underwater noise via UXO clearance

Throughout Chapter 10, low order techniques (deflagration) are stated as the preferred method for UXO clearance. However, the assessment acknowledges there is still a risk of unintentional high order detonation, and so assessments are based on both low order and high order detonation. We advise our preference for low order detonation as the technique to be deployed, and the assessment of high order detonation as a worst-case scenario for assessment purposes only.

This impact pathway is addressed in Chapter 10, Paragraphs 264 to 337. The assessment concludes that unintentional high order detonation presents a significant risk to harbour porpoise. This therefore requires secondary mitigation which comprises implementation of soft start

charges and ADD deployment. These mitigation measures are to be secured via the Marine Mammal Monitoring Plan (MMMP).

We recognise that mitigation is required for this impact pathway, however we do not support the specific methods that are proposed – please see mitigation section below.

We highlight an inconsistency regarding the assessment of magnitude:

- In Paragraph 283 (and in summary Table 10.65), the magnitude of injury (PTS) from UXO clearance is Low for bottlenose dolphin, white-beaked dolphin, minke whale, humpback whale and grey seal, however,
- In Paragraph 314, it states that the magnitude of injury (PTS) from UXO clearance is Negligible for these species.

This appears to be a minor error, under the worst-case scenario of Low magnitude, the resulting significance will be Minor and the conclusion will remain unchanged.

EMF effects from subsea electrical cabling in the water column

In assessing the effects of Electromagnetic Fields (EMF), indirect effects on marine mammals via prey species have not been considered. Nor is EMF included in the assessment of altered prey availability.

However, based on the assessment of EMF effects on fish and shellfish in Chapter 9, which conclude that the magnitude of effect is Low, sensitivity is Low, and significance is Negligible to Minor, we are content that any assessment of EMF effects on prey availability would conclude that impacts on marine mammals are not significant in EIA terms.

Entanglement effects associated with the Array

Ossian is the first large-scale floating offshore wind farm proposal, with up to 1,590 mooring lines in the Array area. This presents a risk of primary and secondary entanglement, with secondary entanglement involving 'ghost' fishing gear more likely, and higher risk, than primary entanglement.

The assessment concludes that the impacts of both primary and secondary entanglement are not significant in EIA terms (Paragraphs 546-547), however it also specifies that mooring lines and dynamic cabling will undergo regular inspections during the operation and maintenance phase, which includes parameters for checking and removal of debris and fishing gear (Table 10.63). We support this monitoring measure and provide further comments below.

Effects on marine mammals due to altered prey availability

Please refer to our comments above on EMF impacts as these intersect with prey availability.

Cumulative impacts

Table 10.66 contains a summary of cumulative issues. In relation to cumulative impacts from underwater noise from piling, there is a commitment to seek to work with other developers in regional and strategic monitoring and to support strategic monitoring such as ScotMER (commitment M2). This commitment is welcome.

Should Scottish Ministers be minded to grant consent, we advise

- **A commitment is secured to collaborative regional monitoring of impacts such as piling noise, UXO clearance, operational noise, entanglement and EMF, where opportunities arise.**

Mitigation

Mitigation measures are outlined in Section 10.10 and presented in Table 10.22. These measures involve the development of and adherence to several Plans which are to be finalised post-consent. We note that outline management plans have been provided within Volume 4 of the Array EIA Report and that these will be updated following development of the final Array design.

These Plans comprise:

- Environmental Management Plan (EMP) (commitment C7),
- Marine Pollution Contingency Plan (MPCP) (commitment C8), and,
- Navigational Safety and Vessel Management Plan (NSVMP) (commitment C15).

Marine Mammal Mitigation Plan (MMMP)

The outline MMMP (commitment C16) is presented in Appendix 22 and provides a good level of detail of mitigation measures that will be carried out for a range of activities. The MMMP will be finalised post-consent in consultation with MD LOT and NatureScot.

We are broadly content with the mitigation measures proposed for each activity. However, we highlight one notable exception around the use of extended periods of Acoustic Deterrent Device (ADD) use and soft start charges to mitigate against PTS injury from UXO clearance. We do not support the extended use of ADDs beyond 60 minutes, nor the use of soft start charges, as both measures will add significant additional noise to the marine environment. We would welcome the opportunity for further consultation on this at the post-consent stage, when more information should be available on the number and size of UXOs needing to be cleared.

Should Scottish Ministers be minded to grant consent, we advise:

- **The approach to use of ADDs and soft start charges should be reviewed, discussed and agreed as part of updates to the MMMP.**
- **We further recommend, any mitigation measures put in place for marine mammals should also be considered as being applied to basking sharks.**

Monitoring

The proposed monitoring set out in Table 10.63 (Section 10.13) is solely in relation to regular checks for debris on mooring lines and cables as a mitigation against secondary entanglement (commitment M3). While this alone may not prevent entanglement occurring, it will provide data on the risk of secondary entanglement, so will be useful in filling this knowledge gap and should be secured through condition.

Furthermore, the reporting of any incidences of secondary entanglement will aid wider industry understanding of this impact pathway and we encourage Ossian to contribute to future research potentially through ScotMER if consent is granted.

Similarly, understanding of operational and mooring noise from floating offshore wind farms, is relatively limited.

Should Scottish Ministers be minded to grant consent, we advise:

- **Monitoring of operational and mooring line noise and secondary entanglement is included within the Project Environmental Monitoring Programme.**

Southern Trench ncMPA

Minke whale

The Southern Trench nature conservation Marine Protected Area (ncMPA) is 66.9km from the Array, at the closest point. Underwater noise modelling indicates that impact piling could produce noise at levels that could cause disturbance within the boundary of the site (at levels of 135 dB SELss).

There is no stand-alone section which assesses effects on the Southern Trench ncMPA or considers the Conservation Objectives, as requested in our pre-application advice. Instead, consideration of the ncMPA is incorporated into the general Section (10.11) Assessment of Significance, which considers each impact pathway and the likelihood of effect on each species.

Based on the information provided, and considering the Conservation Objectives, we conclude that the proposed activities are **capable of affecting the minke whale qualifying species of the Southern Trench ncMPA. However, these effects are insignificant. Further assessment is therefore not required.**

Report to Inform the Appropriate Assessment (RIAA)

Berwickshire and North Northumberland Coast SAC - grey seal

This Special Area of Conservation (SAC) is a cross-border site with sections in England and Scotland. In Scotland, the Conservation Objectives for the grey seal qualifying species relate to the protection of the breeding colony. During the breeding season, grey seals do not generally travel further than 20km and we therefore use this distance as a connectivity buffer. Outside the breeding season the number of grey seals present at a protected site can dramatically decrease. There is evidence to show that grey seals do not forage close to the SAC outside the breeding season and instead can travel to different management units when foraging[9].

Grey seal telemetry data is presented in RIAA Part 1, Appendix 1A, Figure 5.1. We note that there is evidence of grey seal travelling through the Array area, however as per our previous advice (dated 02 May 2023) to the LSE Stage 1 Screening Report our position is that grey seal SACs are scoped out of assessment as there is no evidence of hotspots or regular foraging areas within the project boundary. We therefore have no further comments on this European site.

Southern North Sea SAC – harbour porpoise

This European site is located entirely within English waters and is not within our remit to provide advice. Advice should be sought from Natural England.

[9] Carter, M.I., Boehme, L., Cronin, M.A., Duck, C.D., Grecian, W.J., Hastie, G.D., Jessopp, M., Matthiopoulos, J., McConnell, B.J., Miller, D.L. and Morris, C.D. (2022). Sympatric seals, satellite tracking and protected areas: habitat based distribution estimates for conservation and management. Frontiers in Marine Science.

Moray Firth SAC – bottlenose dolphin

In line with our Scoping advice and the Scoping Opinion, the impacts of underwater noise on the bottlenose dolphin qualifying species of the Moray Firth SAC was to be considered via the HRA process. We agree with the assessment and conclusions provided in RIAA Part 1, Appendix 1A and advise there are no Likely Significant Effects on the Moray Firth bottlenose dolphin qualifying species, either alone or in-combination. Further assessment is not required.

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Appendix C – Fish and shellfish ecology

Fish and shellfish interests are considered in Chapter 9 and supporting Appendix 9.1 of the Ossian EIA Report, with other relevant material presented in Chapter 20 (Inter-related effects) and Appendix 10.1 (Underwater noise technical report).

The assessment for fish and shellfish ecology concludes **no significant impacts, both alone and cumulatively**, see Paragraphs 505 and 507 respectively. We agree with these conclusions.

In this Appendix, we provide further comments and advice which address elements of the assessment process but does not affect the outcome of the assessment or the overall conclusion of our advice. It does, however, highlight areas where further action is recommended should Scottish Ministers be minded to grant consent (see bullets below).

Study area

As detailed in Section 9.3, the fish and shellfish study area has been revised and reduced following our advice at the EIA Scoping stage. It extends over both Scottish and English waters (including the Firth of Forth) and is based on a precautionary Zone of Influence (ZoI) for underwater noise (100km).

Baseline characterisation

As described in Section 9.6, the baseline for fish and shellfish ecology has been informed by a detailed review of desktop data sources, alongside site-specific benthic ecology survey results, which we support. This includes the following elements:

- Substrate suitability assessment for herring *Clupea harengus* spawning and for sandeel *Ammodytidae* spp., based on particle size analysis (PSA) results,
- Contextual habitat information to support general fish and shellfish assemblage characterisation,
- Opportunistic observations of fish and shellfish species in both grab samples and underwater stills images and video footage, and,
- Fish and shellfish catches from epibenthic beam trawls.

Finally, we note that eDNA techniques have not been used to inform baseline characterisation of the Array area. This was agreed with NatureScot in pre-application discussions as noted in Table 9.7 and in Appendix 5.3, Annex A. It is expected that eDNA techniques will be used in future baseline characterisation of export cable corridor(s) which are not part of the current application.

Basking shark and other elasmobranchs

Several species are identified as Important Ecological Features (IEFs) in Table 9.12 and are included in the broad category of 'Marine fish and shellfish species' for the purposes of assessment.

We acknowledge that the risk of basking shark being present in the Array area is relatively low. However, we advise that marine mammal mitigation measures should also be applied to basking shark, should they be observed in the mitigation zone. This is briefly mentioned in Table 10.22 (Section 10.10) which is repeated as Table 1.2 in the Marine Mammal Mitigation Plan (MMMP), but not mentioned in the rest of the MMMP.

Should Scottish Ministers be minded to grant consent, we advise:

- **Basking shark is included as a target species within the Marine Mammal Mitigation Plan and mitigation measures considered and provided.**

Impact assessment

We agree with the impacts scoped in and scoped out of the assessment, as detailed in Table 9.13 and Table 9.14 respectively, which align with the Scoping Opinion.

Table 9.35 summarises the conclusions of each impact assessment presented in Section 9.11. We agree that the assessments are defensible, and we are content that the scoring of sensitivity and magnitude is appropriate.

Electromagnetic Fields (EMFs) effects from subsea electrical cabling

It is noted that recent research publications have been used to inform the assessment of EMF effects. However, collective understanding of EMF effects remains poor, particularly in relation to in-field measurements of EMF and potential impacts to sensitive receptors, including elasmobranchs. Further advice is provided below under monitoring.

Mitigation

Designed in mitigation measures for fish and shellfish are outlined in Section 9.10 and presented in Table 9.18. These measures involve the development of and adherence to several Plans which are to be finalised post-consent. We note that outline management plans have been provided within Volume 4 of the Array EIA Report and will be updated following development of the final Array design. Designed in mitigation measures which may reduce impacts to fish and shellfish receptors include:

- Piling Strategy (PS) (commitment C11),
- UXO clearance using low order disposal techniques where feasible (commitment C12),
- Soft start measures for UXO clearance (commitment C13),
- Environmental Management Plan (EMP) (commitment C7),
- Marine Pollution Contingency Plan (MPCP) (commitment C8),
- Invasive Non-Native Species Management Plan (INNSMP) (commitment C14),
- Cable Burial Risk Assessment (CBRA) (commitment C3), and,
- Decommissioning Programme (DP) (commitment C10).

Monitoring

No specific monitoring is proposed for fish and shellfish receptors, as stated in Section 9.13. However, we welcome the stated commitment to continued engagement with stakeholders to identify relevant strategic monitoring opportunities (commitment M2).

Should Scottish Ministers be minded to grant consent, we advise:

- **Monitoring of EMF either alone or in collaboration via strategic measures to contribute to the evidence gap in relation to EMF impacts and dynamic cables associated with a floating offshore wind farm.**

- **Consideration of strategic monitoring for migratory freshwater fish species (diadromous / anadromous) to complete evidence / knowledge gaps on any potential impact pathways.**

Report to Inform the Appropriate Assessment (RIAA)

At the EIA Scoping stage we provided our position on diadromous fish whereby impacts should be assessed through the EIA process and not through HRA. This position reflects:

- Limited knowledge of spatial and temporal distribution and behaviour of these species in the marine environment,
- Lack of evidence to inform impact pathways, and,
- Lack of reference population figures which prevents impact apportioning to SACs.

However, multiple SACs designated for diadromous fish (and freshwater pearl mussel) have been screened in as set out in RIAA Part 1, Appendix 1A, Table 5.1. The relevant impact pathways considered are:

- Subsea noise (construction phase only),
- EMF (operational phase only),
- In-combination effects (construction and operation phases).

Based on our Scoping advice, we offer no comments on the assessment for diadromous fish through HRA. However, we do note that a conclusion of No AEOSI has been reached for each diadromous fish qualifying species of every SAC under consideration (as summarised in RIAA Part 2, Table 7.1).

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Appendix D – Benthic ecology

Benthic interests are considered in Chapter 8 and supporting Appendix 8.1 of the Ossian Array EIA Report.

The assessment for benthic subtidal ecology concludes **no significant impacts, both alone and cumulatively**, see Paragraphs 447 and 449 respectively. We agree with these conclusions.

In this Appendix, we provide further comments and advice which address elements of the assessment process but does not affect the outcome of the assessment or the overall conclusions of our advice. It does highlight areas where further action is required should Scottish Ministers be minded to grant consent (see bullets below).

Study area

As detailed in Section 8.3, two benthic subtidal ecology study areas have been defined for the assessment. The Array benthic subtidal ecology study area has been defined as the area encompassed by the site boundary plus one mean spring tidal excursion. In order to include the widest possible extent of potential impacts, this study area should ideally have encompassed the maximum spring tidal excursion rather than the mean. However, on this occasion we do not consider this to affect the conclusions of the assessment and therefore we are content to accept the study area as illustrated in Figure 8.1.

Baseline characterisation

As described in Section 8.6, the baseline for benthic ecology has been informed by a desktop study and site-specific surveys. A clear summary of both existing data and results of site-specific surveys is presented in Section 8.7.

Assessment approach

We agree with the impacts scoped in and scoped out of the assessment, as detailed in Table 8.12 and Table 8.13 respectively.

Table 8.28 summarises the conclusions of each impact assessment presented in Section 8.11. A significance conclusion of Minor has been reached for all impacts and at all stages of the proposal. We agree that the assessments (as detailed in Section 8.11) are defensible, and we are content that the scoring of sensitivity and magnitude is appropriate.

Target burial depth

The key parameters for assessment and the Maximum Design Scenario are described in Section 8.8 and Table 8.12. Within Table 8.12 the minimum target depth for inter-array and interconnector cables is cited as 0.4m.

This minimum target depth is shallower than that generally proposed for electrical cables within other offshore wind applications elsewhere in Scottish waters although we note that depth achieved has been variable to date.

No narrative has been provided within the EIA Report to explain why this minimum target depth has been considered acceptable, or what factors have been considered in reaching this view. As such we are unclear as to the potential risk regarding cable re-exposure and damage, noting that

the minimum target depth is contingent on the Cable Burial Risk Assessment (CBRA) which is to be submitted post-consent (as per designed in measure C3).

The potential for EMF effects on benthic ecology is discussed within Section 8.11. We consider that a minimum target burial depth of at least 1m would help reduce potential EMF impacts.

Should Scottish Ministers be minded to grant consent, we advise:

- **Further consideration should be given to the suitability of the proposed minimum burial depth for inter-array and connector cables, particularly with regard to both the potential for re-exposure and also EMF impacts.**

Decommissioning

Table 8.12 also proposes that scour protection, cable protection, inter-array / connector cables are to be left in situ at decommissioning, although it is noted that the decommissioning strategy is not yet fully defined. Table 8.17 outlines that the decommissioning programme will adhere to policy in place at that time. We would therefore expect this to adhere at this stage to current policy, which we understand to mean full removal as the default position for relevant objects unless there are strong reasons for any exception. Should the proposal receive consent, we are content to revisit this element through the consultation process for the Decommissioning Programme.

Mitigation

Designed in mitigation measures for benthic ecology are outlined in Section 8.10 and presented in Table 8.17. These measures involve the development of and adherence to several Plans which are to be finalised post-consent. We note that outline management plans have been provided within Volume 4 of the Array EIA Report and will be updated following development of the final Array design. These comprise:

- Environmental Management Plan (EMP) (commitment C7),
- Marine Pollution Contingency Plan (MPCP) (commitment C8),
- Scour Protection Management Plan (SPMP) (commitment C6),
- Invasive Non-Native Species Management Plan (INNSMP) (commitment C9),
- Cable Burial Risk Assessment (CBRA) (commitment C3), and,
- Decommissioning Programme (DP) (commitment C10).

With regards to benthic ecology, we have reviewed the outline Invasive Non-Native Species Management Plan (Appendix 21, Annex B). We consider the approach set out within the outline plan to be appropriate at this stage. However, we note that Section 5.5 does not yet detail procedures for biosecurity surveillance, monitoring and reporting. It is our understanding that Section 5.5 is currently illustrative and will be updated should the proposal receive consent.

Monitoring

As stated in Section 8.13 no specific monitoring is proposed for benthic subtidal ecology, as the assessment has not identified any significant impacts. Monitoring of marine Invasive Non-Native Species (INNS) currently relies upon the yet to be finalised Invasive Non-Native Species Management Plan (INNSMP). An outline version of the INNSMP is provided in Annex B of Appendix 21 but does not yet provide detail of how marine INNS will be monitored. This does not fully meet the Scoping Opinion request regarding discussion and consideration of marine INNS monitoring

and will require further consideration in the Environmental Management Plan consent plan consultation process.

In addition, we welcome the commitment referred to in Section 8.13 and detailed in Table 2.2 of Appendix 6.3, regarding further engagement and contribution to regional and strategic monitoring (commitment M2). However, we note that further detail regarding identified potential regional and strategic monitoring requirements is not provided. This will require further discussion / agreement should the proposal receive consent.

Report to Inform the Appropriate Assessment (RIAA)

As summarised in Section 1.1 of the RIAA Executive Summary and Conclusion, no SACs with Annex I habitat features were advanced to the RIAA stage. We are content with this conclusion.

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Appendix E – Physical processes

Marine physical processes are considered in Chapter 7 and supporting Appendix 7.1 and 7.1 Annex A of the Ossian EIA Report.

The assessment for physical processes concludes **no significant impacts, both alone and cumulatively**, see Paragraphs 185 and 190 respectively. We broadly agree with these conclusions based on our understanding of the available science.

However, we are mindful that the potential impact of large-scale floating offshore wind farms on mixing and seasonal stratification is an emerging topic with significant uncertainties. The Ossian wind farm proposal provides an early opportunity to contribute towards addressing this evidence gap through pre- and post-construction monitoring. We provide further comments on this topic below.

In this Appendix, we provide comments and advice which addresses elements of the assessment process but does not affect the outcome of the assessment or the overall conclusion of our advice. It does highlight areas where further action is required should Scottish Ministers be minded to grant consent (see bullets below).

Designated sites

The EIA Report states that there are no designated sites relevant to the physical processes study area, with the nearest such site, Firth of Forth Banks Complex ncMPA, located c. 25km from the proposed Array. We agree that no assessment of effects on physical processes designated sites is required.

Impacts to seasonal stratification due to the presence of infrastructure

Baseline characterisation

The baseline for seasonal stratification is set out in Section 7.1.1, Paragraphs 25-28. Here the study area is characterised as having "weak seasonal stratification throughout the year" based on site-specific metocean data from 2022 and 2023, as well as data from the Scottish Shelf Waters Reanalysis Service (SSW-RS) dataset for 2016.

This characterisation is based mainly on seawater salinity, though with some consideration of sea temperatures. The EIA Report does not discuss in detail the timing of stratification, and the depth of the thermocline is merely implied (Paragraph 97). It is therefore not clear whether the characterisation of the array area as having "weak seasonal stratification throughout the year" is accurate. **Advice from MD-SEDD should be sought on this point**.

Impact assessment

Impacts on seasonal stratification are assessed in Section 7.11, Paragraphs 92-110. This section discusses how floating structures, even those with small drafts, which intersect the thermocline can lead to non-trivial effects on mixing. However, it is acknowledged that there is limited evidence on this topic.

The assessment uses WTGs with 25m draft as the Maximum Design Scenario (MDS), over the use of WTGs with 40m draft. Shallower drafts may reduce effects on seasonal stratification; however a

larger number of turbines may increase effects on seasonal stratification. As the relative importance of these 'opposing' effects (Paragraph 100) seems poorly understood, it is not clear whether 25m draft does represent the MDS.

An alternate approach would be to have two MDS, one using maximum draft and one using maximum number of WTGs, particularly as Paragraph 97 implies the thermocline begins between 25m and 40m depth. **Advice from MD-SEDD should be sought on this point.**

In describing the magnitude of the impact of the development, it is suggested that climate change effects may increase seasonal stratification and thereby counteract the reduced stratification due to water column infrastructure (Chapter 7, Paragraph 100). Whereas Dorrell et al. (2022)[10] characterises the interaction of the two effects as "*a combined hazard that has not been considered*". **Advice from MD-SEDD should be sought on this point.**

Monitoring

The ECOWind project "Physics-to-Ecosystem Level Assessment of Impacts of Offshore Windfarms" (PELAgIO) aims to close a range of knowledge gaps, including on the impacts of offshore wind infrastructure on mixing in the water column. New model outputs were recently presented at the PELAgIO workshop held in June 2024 that clearly show WTG structures have effects on mixing, leading to decreases in sea surface temperature. Although, we note this model is currently based solely on changes to water mixing and does not yet incorporate the effects of changes in wind resource.

This work provides some evidence that offshore wind farms in seasonally stratified waters may affect sea surface temperature across large areas, which may impact primary production, leading to cascading effects on marine food webs. Further observational evidence and modelling is required on this topic.

Should Scottish Ministers be minded to grant consent, we advise:

- **Pre- and post-construction monitoring of impacts on mixing and seasonal stratification is included within the Project Environmental Monitoring Programme, taking account of recent PELAgIO outputs and advice from MD-SEDD on this topic.**

Impacts on mixing and seasonal stratification will be cumulative in nature. At this stage we highlight a need and an opportunity to consider future strategic collaborative monitoring around this topic. This could be achieved through a topic-based Regional Advisory Group (RAG) format, linked to the monitoring requirements via the PEMP.

Lastly, we are mindful of the ScotMER project proposal for "Development of marine physical process modelling guidelines for offshore wind farm environmental impact assessments" which has recently reached the ITT stage. While the timeline for this project may not align with the current application, it may be useful to consider project outputs when designing monitoring, if consented.

[10] Dorrell, R. M., Lloyd, C. J., Lincoln, B. J., Rippeth, T. P., Taylor, J. R., Caulfield, C. P., Sharples, J., Polton, J. A., Scannell, B. D., Greaves, D. M., Hall, R. A., Simpson, J. H. (2022). *Anthropogenic Mixing of Seasonally Stratified Shelf Seas by Offshore Wind Farm Infrastructure*. Front. Mar. Sci., 22 March 2022 Sec. Physical Oceanography Volume 9 –2022

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Appendix F – Blue carbon

Climatic effects are considered in Chapter 17 and Appendices 17.1 and 17.2 of the EIA Report and includes assessment of impacts to blue carbon stocks, as requested during pre-application.

We welcome the Applicant's consideration of disturbance to blue carbon stocks, noting this is the first occasion where such a detailed assessment has been included within an EIA. Generally, the approach undertaken in this assessment is sensible and balanced, and we provide comments on aspects where future assessment work could be improved to aid clarity. We agree with the Applicant that disturbance to blue carbon stocks from the wind farm proposal will not result in a significant impact on its own.

Assessment approach

The approach to estimate a baseline sedimentary organic carbon (OC) stock across the design footprint is reasonable and generally aligns with what is possible given the current available data and understanding. The use of Smeaton et al (2020) OC density values by Folk sediment type is appropriate – there are no other published breakdowns that can currently be used, noting that we are aware that a new publication from Smeaton et al is due spring 2025. This is likely to update OC density and stock values. It is useful to note that Table 5 in Smeaton et al (2020) includes OC densities collected from inshore and fjordic sediments, so these samples are likely to have skewed the averages to be higher than likely for offshore sediments, but this ensures a more conservative estimate is calculated.

To support the description of sediments as outlined in Paragraph 29, a table displaying a quantitative breakdown of the area of each Folk sediment type and associated OC density used to calculate the total stocks, would be useful and transparent. The assessment uses an average value of 5 t OC/ha, but this could be more specific using the sampled sediment type. Although, the outcome in stock values between an average and specific sediment sample is unlikely to be significantly different for this proposal.

The assessment takes a conservative approach to calculating stocks and potential 'emissions' as the fate of disturbed OC in still largely unknown. There are many potential pathways including remineralisation (which could lead to aqueous CO2 that is recycled during benthic respiration, laterally transported as particulate organic matter and redeposited, or it could potentially find its way to the surface and outgassed to the atmosphere, or a combination of all three). However, the Applicant has taken the worst-case scenario, i.e. assumed that 100% of disturbed sedimentary carbon ends up as CO2 flux to the atmosphere. We agree with this worst-case scenario approach.

We agree with the method to calculate total estimated magnitude of impact (16,109 t OC x 3.67 = 59,120 t CO2-eq), expressed as potential emissions of tCO2.

The use of the terms "remineralisation rates" and "resulting emissions" are not accurate and could cause confusion. Rates of remineralisation are not known in this broad context and the fate of remineralisation does not necessarily lead to an emission. It would be helpful instead to refer to "remineralisation potential" (as per Smeaton and Austin, 2022) and "potential CO2 production/emission" particularly with respect to Paragraph 85.

NatureScot advice

We agree with the overall assessment conclusion of significance noted in Paragraph 88, such that:

- The receptor is deemed to be of high vulnerability, low recoverability and high value.
- The sensitivity of the receptor is therefore, considered to be high.
- The estimated emissions are negligible when compared to The UK and Scotland's annual emissions.
- Therefore, a conclusion of minor adverse significance is reasonable.

We also agree with the assessment that there will be negligible effects on the loss of sequestration capacity over the lifetime of the Array given the current available data and understanding of sediment/carbon accumulation in the North Sea.

However, there is likely to be further uncalculated impacts from the additional infrastructure required around export cables, therefore we currently disagree that there will not be any accumulation over 35 years as suggested in the decommissioning phase and cumulative assessment (Appendix 17.1). Some caution is therefore required with the conclusions presented in Paragraph 100 (Appendix 17.1):

- *As such, it is not anticipated that there will be additional disturbance (and associated emissions) to blue carbon habitats for the Proposed offshore export cable corridor(s) during the operation and maintenance, and decommissioning phases, as activities are not likely to disturb blue carbon habitats additional to those accounted for during the construction phase*"

While the structures might enhance deposition of sediments through reduced current speeds, the magnitude of impact and significance of this is likely to be low.

The further consideration of the cumulative impact on blue carbon stores from multiple development proposals will be required. **This is likely to be of relevant to future applications including the associated offshore transmission infrastructure requirement of this proposals.**

NATURESCOT ADVICE ON OSSIAN OFFSHORE WIND FARM

Appendix G – Derogation

The Applicant has submitted a derogation case alongside the s36 and marine licence applications. This is provided on a without prejudice basis, and comprises:

- Derogation case,
- Appendix 1 - Ecological Evidence Report,
- Appendix 2 - Compensation Plan,
- Appendix 2 - Annex A - Compensation Stakeholder Consultation,
- Appendix 2 - Annex B - SISI Letter of Intent,
- Appendix 2 - Annex C - SPEA Letter of Intent,
- Appendix 3 - Outline Compensation Implementation and Monitoring Plan,
- Appendix 4 - Compensation: EIA Report,
- Appendix 5 - Compensation: Likely Significant Effect Report.

We have focused our advice on the ecological feasibility of the proposed compensatory measures submitted as part of the without prejudice derogation package, acknowledging that at this point in time the Appropriate Assessment has yet to be finalised. Our detailed advice on the proposed compensatory measures, is provided below. We also provide some comments regarding the delivery of a cohesive, well planned and considered strategic or plan level set of compensation measures below.

Role for strategic compensation

While we provide advice on project-specific compensation there are several relevant discussions on strategic compensation - whether that is delivered as plan-level and / or regionally co-ordinated compensation being conducted across Scottish and UK Governments. Clarity on predicted impacts for Scottish offshore wind project proposals, together with clear policy direction on strategic and/ or project-specific compensatory requirements is currently being led by Scottish Government. We continue to engage in these discussions to ensure relevant, meaningful, high-quality measures are secured to address the biodiversity crisis, and particularly the decline of seabird populations.

We welcome and acknowledge the collaboration and desire to collectively identify potential regional / strategic compensation measures by the Northeast (NE) and East (E) ScotWind developer consortium. However, in the absence of a final SMP and plan-level compensation measures and / or delivery mechanisms for coordinated compensation, individual project developers submitting applications are having to consider and submit largely in isolation, individual project derogation cases.

In considering how the requirements for compensation could best deliver significant benefit to nature, we are in the midst of developing a Derogation Prospectus. In the first instance, this will:

- Identify and compile a register of current and previous actions taken forward as seabird management measures,

- Consider what actions from designated site conservation plans have not been taken forward (for whatever reason) and whether any of these would meet the additionality test under current legislative requirements,
- Identify measures that will provide benefit for seabird resilience (on or offshore),
- Identify measures that could support habitats and or species most likely to be negatively impacted by offshore wind development and therefore could be identified as compensation measures.

As part of this, we are also considering the opportunities for future positive enhancement actions.

Some of these management measures could be specifically tied to individual developments to be taken forward, whilst others may be of a greater scale that may then be suitable for either co-ordinated regional compensation or plan-level measures. Any such, measures will be shared with the Catalogue of Environmental Measures project currently being led by Marine Directorate as well as with the Sectoral Marine Plan as the Iterative Plan Review progresses. We are also anticipating being closely involved with and considering the likely actions / recommendations that may emerge from the 'Seabird Conservation Strategy' and how these may link to compensation measures.

Derogation case overview

Section 7 is relevant to our remit. Table 7.2 provides a useful introduction to the proposed compensatory measures. Noting at this stage that these are restricted to measures for kittiwake, razorbill and gannet based on assessment conclusions provided by the Applicant in the RIAA. This list may need to be reviewed in light of our request for updated apportioning and PVAs. In addition, we consider it likely that compensation will also be required for puffin.

Outlined below is a summary of our understanding of the proposed compensation measures; it includes our initial view on the principle of each measure. This is restricted to the target species being considered: kittiwake, razorbill and gannet.

Mink control in Scotland

This measure proposes to fund the continuation of the Scottish Invasive Species Initiative (SISI) Mink Control Project (MCP)[11] with objectives to further intensify trapping effort and increase the geographical coverage of control areas targeting American mink - an invasive non-native species. Funding for the MCP comes to an end in March 2026. This measure is largely preventative in nature, guarding against the risk of predation by mink on kittiwake and razorbill adults and/or chicks, were mink to disperse beyond their current (known) range, in the absence of control efforts, into seabird colonies at target SPAs.

In principle, subject to presentation of credible site-specific evidence as discussed below, we are receptive to further consideration of this measure by the Applicant for this proposal. This recognises the absence of any clarity on requirements for plan-level and / or regional

[11] SISI is a partnership project (not an organisation) managed by NatureScot. https://www.invasivespecies.scot/ The Mink Control Project (MCP) is nested within the wider SISI work programme which includes invasive non-native plant management. There are, contrary to paragraph 50, 11 FTE staff members, with 1 PT member of staff and a further 4 Seasonal staff.

compensation, or an indication of priority management measures required to ensure seabird resilience through the future 'Seabird Conservation Strategy'. It also does not mean that we necessarily support its use elsewhere for other projects.

Bycatch reduction in Portuguese waters

This measure proposes to reduce mortality of gannets and razorbills caught as bycatch in Portuguese waters through use of bycatch reduction techniques. Implementation would be in partnership with Portuguese Society for the Study of Birds (SPEA) who have historically monitored accidental bycatch in these waters.

Implementation is contingent on the Applicant funding further data analysis and mitigation trials by SPEA to establish bycatch rates, complete mitigation trials to confirm which bycatch method(s) is most appropriate and determine the associated level of efficiency, which will enable identification of target fisheries and secure uptake by fishers. Further analysis is also planned to validate likely connectivity between gannets and razorbills breeding in Scottish SPA colonies and those caught in bycatch during the non-breeding season in Portuguese waters to better understand what this means for the UK (European) Site Network.

While we agree the impact bycatch has on seabirds, including the target species discussed, we note the many dependencies associated with this proposed measure, not least its international perspective. We are open to further discussion on this measure in terms of its ecological merit, and what this might mean for Scottish seabird colonies. To help with this, we seek further information from the Applicant to understand why bycatch reduction in Scottish waters has not been given greater priority and clarity from the Scottish Government as to whether or not this measure is securable.

We have addressed each of the two proposed measures in turn below, providing advice on each document sequentially. Where appropriate we have used the same heading / subheadings as the Applicant.

Appendix 1 – Ecological evidence

MINK CONTROL

Mink control in Scotland

The devasting impact invasive mammalian predators such as mink can have on biodiversity including ornithological interests is undisputed, noting that predation has been identified as a potential cause for population change in twenty-one seabird species (Burnell et al 2023). The ecological evidence report provides examples of mink predation on razorbill colonies in the Baltic Islands, Finland and Norway with one example from Galloway in Scotland (Section 2.1.1). Further examples of mink predation on kittiwake is provided from a colony in Norway with further evidence of mink incursion at St Abbs Head, Troup Head and Fowlsheugh in Scotland (Section 2.1.2).

Figure 2.1 provides images of mink predation on kittiwakes. It would be helpful if images could also be provided that set these images in the context of the wider cliff face – it's difficult to understand where on the cliffs these images relate to i.e. top, bottom or middle.

Documented incursions by mink upon cliff nesting seabird species such as kittiwake and razorbill are not commonplace, particularly on the East coast of Scotland, however we accept that there is potential for incursion given the highly mobile, flexible nature of this opportunistic predator which is known to frequent a wide range of locations/habitats. The degree to which historic control efforts have influenced the lack of regular sightings and more frequent evidence of predation events upon seabird species breeding on tall vertical sea cliffs, is difficult to quantify. Nevertheless, the key question to be able to advise on ecological effectiveness, is how credible is the threat to seabirds breeding on tall vertical cliffs from mink predation?

During pre-application engagement, we emphasised repeatedly that the Applicant should provide sufficient evidence to demonstrate that without control efforts, would mink be capable of reaching specific East coast seabird colonies (SPAs) and that once there, were the characteristics of the sea cliffs such that mink would be able to physically reach both target species – noting the differing nesting habitat requirements of kittiwake and razorbill.

Paragraph 37 notes the innate dispersal ability of mink, flexible feeding ecology and preference for coastal habitats together with requirement for high calorific value prey, which we accept. However, the narrative goes on to indicate that this combined with evidence of mink predating on kittiwake at Fowlsheugh and Troup Head is such that ‘’*it is probable that all sections of cliff nesting seabird colonies within SPAs are vulnerable to mink predation following incursion*”. To augment this statement, four photographs are provided in Figure 2.3 to illustrate down-sloping grassy patches leading from cliff tops to lower section of the cliff face taken from Fowlsheugh and North Caithness Cliffs SPAs which would facilitate access into the seabird colony for mink.

If this measure is to be secured, we advise the evidence presented is insufficient at this stage to demonstrate accessibility to cliff nesting seabird colonies. Site-specific information to map likely accessible habitat at target SPAs is required to provide evidence that were mink to reach these sites, the risk is credible to both razorbill and kittiwake.

It is interesting to note that mink control has been accepted as a compensation measure for Saint-Brieuc offshore wind farm in France, however no information is provided in Section 2.1.5 as to which seabird species this measure seeks to protect, nor any other information as to the comparability or relevance to a Scottish context. It would be helpful if this is clarified.

Appendix 1 – Ecological evidence

BYCATCH REDUCTION

Noting our interim position on this measure, as outlined above, particularly in relation to connectivity and other dependencies and whether it can be secured, we provide the following advice focussing on elements we consider would need to be resolved, were the proposed measure to be progressed.

Gannet (Section 3.1.1)

Of the evidence summarised in this section, it is reasonable to conclude there is some connectivity for gannet between the UK (European) Site Network and Portuguese waters. **However, the scale and strength of this connectivity, particularly to Scottish colonies remains uncertain.**

The evidence provided shows that gannets from northern European colonies do migrate through Portuguese waters and could therefore be at risk of bycatch. However, it remains unclear how long birds stay in these waters and our understanding from the tracking data (Lane et al 2021) suggests that Scottish birds move further south and over winter on the NW coast of Africa.

We also note, as per Calado et al (2020) that gannets caught during the summer months were mainly immature, presumably as adult birds had returned to breeding colonies elsewhere. Much of the outstanding data analysis and associated work described in the CIMP (Appendix 2) is necessary to better understand and inform any subsequent conversion factor needed to relate the bycatch of immature birds to any benefit derived to adult breeding birds, as well as where / when this benefit is likely to be realised e.g. Scottish or wider UK colonies.

Razorbill (Section 3.1.2)

The evidence provided which demonstrates connectivity between Scottish or wider UK colonies and Portuguese waters is limited for razorbill. More recent studies documenting razorbill movements in the non-breeding season are available from St. John Glew et al (2019) and Buckingham et al (2022). These papers evidence tagged razorbills from various breeding colonies around Scotland and found that they spend the non-breeding season in various parts of the North Sea.

Based on our understanding of the available science, we do not consider there is sufficient demonstratable evidence of connectivity between Scottish breeding razorbills and Portuguese waters. **If further evidence is available for razorbill, this should be presented. Otherwise, we consider alternative measures should be considered for this species.**

Appendix 2 – Compensation plan

MINK CONTROL

Conservation Objectives (Section 2.1)

In our view, the compensation measures should, in the first instance aim to target the conservation objectives most relevant in the conclusion of AEOSI.

Stakeholder engagement (Section 3.3)

Table 3.5 provides a sufficiently accurate record of our engagement with the Applicant. Noting that consideration of razorbill with respect to bycatch reduction was only discussed latterly and its inclusion within the derogation case was, we understood at the time, uncertain.

Compensation ratios (Section 3.5)

Section 3.5 discusses the use of compensation ratios yet omits consideration of their applicability to offset impacts to mobile species. Many factors need to be considered in applying such an approach, which we note have been set elsewhere on a case-by-case basis. We consider the use of ratios to be premature at this stage, instead we wish to see identified the level of confidence for each site / species alongside initial consideration of any likely adaptive management measures, particularly if confidence is deemed to be low. Further discussion and agreement, as acknowledged in Paragraph 32 will be required - this should include advice from MD SEDD.

Mink Control in Scotland (Sections 5.1-5.2)

Much of the narrative provided here is also outlined in the Evidence Report, commentary on this is provided above.

Objectives (Section 5.3)

The MCP is currently part of the wider SISI which also controls a suite of invasive non-native plants. The Applicant's proposal includes a separate commitment to continue the invasive plant species work however this is not part of the derogation proposal. We raise this now as it has implications for the implementation of the proposed mink control measure in that the continuation of SISI - as currently structured and scoped - would involve both the MCP and invasive plant work, and critically all staff are currently involved in both elements. It would be possible to extend the geographic scope of mink control without extending the same for plants. Increasing effort, intensity and geographic scope would need to be described carefully.

In respect of Paragraph 67, and the aspiration to completely eradicate mink from Scotland appearing to be unfeasible, to clarify, this view is generally accepted and by a wider group than those involved in SISI. We welcome and support the intention, as described in Paragraph 69, to use the findings from the research project led by mink expert Professor Xavier Lambin, to determine the relationship between mink control effort and captures. Noting this will be used to further refine the objectives of the mink control measure.

Further consideration and information is required on the timeline and reporting mechanisms for this research, as well as clarity on how it could, in practical terms, be used to support the revision of current approaches.

Sections 5.3.1 and 5.3.2 provide a helpful high-level summary of each project specific objective which is cognisant of and accurately reflects current practices within the MCP. Other than to note, the engagement of volunteers and individuals is limited by the staff resource available in which to prioritise and balance time spent on mink control, when also delivering a very large programme of invasive plant control. It would seem reasonable to assume that with additional resource the enhancement of control effort through the intensify and increased coverage objectives could feasibly be delivered by staff and or volunteers who would be more actively and comprehensively recruited to specific / dedicated mink control roles.

The priorities outlined in Paragraph 78 are reasonable but need to be kept under review. Our records indicated that mink are widely distributed across parts of Scotland south of SISI control areas – where, we understand, there is no meaningful programme of control in place.

Scale and site selection (Section 5.4)

Further discussion and agreement is needed on elements of Section 5.4 including the conversion from chicks to adults. We are content that this is addressed through the Compensation Implementation and Monitoring Plan (CIMP). This should consider requirements to compensate impacts to immatures, in line with any policy position from the Scottish Government on this.

Maintaining coherence of the network (Section 5.5)

Paragraph 107 notes that the measure will be undertaken within the SPA network to *at least one* of the impact SPAs. Target SPAs should be discussed and agreed as part of the CIMP.

Implementation and securing the measure (Section 5.6)

Paragraph 118 suggested that landowner access would be secured via the 'right to roam'. Please note, landowner agreement is secured by the MCP to operate all MCP raft/traps and to allow caught mink to be despatched by air weapons by qualified personnel. The statutory right of responsible access under The Land Reform (Scotland) Act 2003 should not be used as a substitute for landowner access permission. The Applicant should also note that some landowners have specific policies relating to dispatch qualifications and animal welfare implications that would need to be discharged to secure access permission.

Monitoring (Section 5.7)

Monitoring requirements for each objective should be discussed further and agreement reached through the CIMP.

Compensation checklist (Section 5.9)

We have reproduced Table 5.6 and provided our advice in the right-hand column.

Mink control in Scotland	
Checklist question	NatureScot advice
Is the measure technically feasible?	We agree the proposed measure is technically feasible, subject to further discussion with SISI to reach agreement on funding, governance and management.
Is the measure financially feasible?	The Applicant is willing to finance this work and an appropriate mechanism will need to be agreed.
Is the measure legally feasible?	Please note our advice above with respect to land access and agreement.
Is the measure deliverable?	We agree the proposed measure is deliverable, subject to further discussion with SISI to reach agreement on funding, governance and management.
Is the measure ecologically effective?	We agree there is ecological merit in preventing mink incursion into seabird colonies. Further site-specific information is required however to establish that the threat is credible for the target species at the locations proposed.
Will the measure be effective before adverse effect arise?	Without control efforts mink populations will recover. The MCP funding ceases in March 2026. Offshore construction activities are not expected to commence until Q2 2031, with

	construction / commissioning finalised in Q4 2038. Subject to agreements as detailed above, it seems reasonable to expect the measure could be effective before the wind farm was operational, based on these indicative timelines.

Appendix 2 – Compensation plan

BYCATCH REDUCTION

Summary of evidence (Section 6.2)

Much of the narrative provided here is also outlined in the Evidence Report, commentary on this is provided above.

Objective and scale (Section 6.3)

The step-by-step process laid out in Paragraph 151 seems logical. We note however the narrative in Step 4, around apportioning to either UK (European) Site Network or Scottish colonies. Further discussion and agreement is needed, once the results of the isotope analysis are available to understand what this means for apportioning.

As the metric for success of this measure is to be based on the implementation of bycatch reduction measures themselves, rather than the response of a target population / colony, it places more emphasis on ensuring that all parties accept and agree the steps outlined in this section. The process for agreeing this should be outlined and discharged via in the CIMP.

Further, we note from Paragraph 153 – 155 that current monitoring methods means it is not possible to breakdown the number of gannets caught into adults or juveniles. As above, this will have a bearing on assumptions made when predicting the scale of benefit to Scottish and or wider UK colonies. An agreed conversion ratio is needed so that the number of juvenile birds not being bycaught, as a result of mitigation measures put in place on vessels, marries with the number of adult birds impacted at the proposal site. In addition to this, is also understanding when, throughout the year, adult birds are most susceptible to bycatch. Linked to which is how this then relates to the overlap with specific fishing fleets e.g. do the bycatch numbers go up when the adult birds start returning.

Fisheries selection (Section 6.4)

Paragraph 161 outlines that the Applicant will keep abreast of hotspot and other areas. It would be helpful to understand how decisions in such a moving 'landscape' will be taken, who will be involved and the reporting mechanisms to ensure requirements for compensation are met. This needs to be addressed in the CIMP.

Monitoring (Section 6.6)

Further consideration of post implementation monitoring is required - we would expect this to be in line with pre-implementation monitoring to validate that the measure is working as predicted

from earlier trials. A standard comparable approach, such as use of cameras on vessels, for both pre and post implementation is advised.

Implementation and securing the measure (Section 6.7)

As outlined in Paragraph 176, the longevity of any bycatch reduction programme is dependent on participation of fishers, which in line with the consent period, could, in this instance, span multiple decades. We would expect the CIMP to cover contingency and adaptive management options for this.

Paragraph 178 provides narrative around the Portuguese National Plan of Action on Bycatch; however, no information has been provided as to the Portuguese Government target to achieve 10GW of offshore wind energy by 2030 and what this may means for compensation requirements. Further context on the implications from this would be useful.

Coherence of Site Network (Section 6.8)

We support the use of stable isotope analysis to further indicate at a greater geographic resolution, where bycaught birds originate. The study noted in Paragraph 182 highlights that gannets from the Bass Rock were found to winter in areas around the UK and Bay of Biscay, and a region from Gibraltar to Mauritania, and the Mediterranean Sea. This does raise the question as to the origin of birds bycaught further west in Portuguese waters, and whether or not they were migrating through. This will have repercussions on how the impact and success of any compensation measure is calculated, including network coherence. Noting, as per Burnell et al (2023) that 71% of the Northern gannet population is found at Scottish colonies.

Adaptive management – Scottish bycatch (Section 6.10)

Bycatch management within Scottish waters is proposed as an adaptive management measure - if required. While we understand that options for bycatch reduction are perhaps not as well developed in Scotland, from an ecological perspective, it would make more sense to seek to reduce bycatch in Scottish waters, particularly in relation to the uncertainty around the scale of connectivity with bycaught birds in Portuguese waters.

Paragraph 186 – 195 indicates there is clearly potential for this measure in Scottish waters, which we support, however we are unclear as to why this has not been explored further by the Applicant. **We would wish to see greater emphasis on how this could be achieved in Scottish waters.** Noting, Kingston et al (2023) points to interest from fishers in Scotland to work with bycatch mitigation and that there are potential methods available, especially for gannets. It is less clear what might be appropriate for razorbill from the evidence presented or referenced.

Compensation check list (Section 6.10)

We have reproduced Table 5.6 and provided our advice in the right-hand column.

Bycatch reduction in Portuguese waters	
Checklist question	NatureScot advice
Is the measure technically feasible?	We agree the proposed measure is technically feasible, as has been demonstrated in other fisheries - more so for gannet than razorbill.
Is the measure financially feasible?	The applicant is willing to finance this work.
Is the measure legally feasible?	No comment.
Is the measure deliverable?	Notwithstanding the many factors and dependencies to be addressed before mitigation trials can be used to derive the method (s) and location (s) to be used for this proposal, we accept that methods to mitigation bycatch are ecologically deliverable.
Is the measure ecologically effective?	Notwithstanding the uncertainty around strength of connectivity and the relationship between bycaught immatures and adults birds breeding in Scottish colonies - which requires completion of key research - we consider this measure could be effective ecologically. There is limited evidence of connectivity for razorbill.
Will the measure be effective before adverse effect arise?	Subject to the completion of key research and mitigation trails as outlined above including securing long-term agreements with fishers, it seems reasonable to expect the measures could be effective before the wind farm was operational based on indicative timelines – all things being equal.

Appendix 2 – Compensation plan

BOTH MEASURES

Adaptive Management (Section 7)

The option for bycatch mitigation measures in Scottish fisheries is only briefly mentioned in Table 7.1. This should be clarified as per our advice above. Otherwise, we note the detail provided in this section is limited.

Proposed consent conditions (Section 8.3)

Due to the novel nature of the proposed measures, we request assurance that adaptation of these measures and / or additional measures (to be implemented or funded by the Applicant) will be a condition of any consent.

In addition, should monitoring (to be agreed) indicate these measures are failing to provide the required compensation, additional steps may be required as part of an adaptive management approach.

Appendix 2 – Annex A, B & C

Annex A – Consultation overview

In our review of this Annex, we have noticed a number of inconsistencies where the text provided does not match our record of discussion during pre-application. This includes:

- Paragraph 5 - we requested, in an email - 18 September 2023 that this text was amended, as follows: NatureScot are open to novel ideas including measures being used in other countries, that may not have been trialled in the UK.
- Section 2.3 - not all of the points that we raised are included in this summary, but these have been addressed in later workshops/ discussions.
- Paragraph 15 - This is a summary of our comments which were more accurately recorded in the meeting minutes as: "KT noted that NS went through site files and ops colleagues, to understand if there is any notable mink impacts within east coast SPAs. There is no evidence of mink having a population level influence in NS records. Ossian will need to present evidence to confirm the threat mink poses to coastal seabird colonies."
- Paragraph 27 - This only briefly summarises our letter of 31 May 2024 however we are content that these points have largely been addressed in the derogation case presented.

Annex B – SISI Letter of Intent

The letter of intent, signed by NatureScot indicates a willingness to continue discussing what might be possible. The mechanism by which any funding might be received, administered, the wider governance and reporting requirements have not been determined and will require further discussion / agreement. Should the proposal receive consent and the need to secure compensatory measures realised, this letter provides security to the Applicant that NatureScot are open to further and ongoing dialogue.

For the avoidance of doubt, discussion on the potential continuation of the MCP as a compensatory measure has been led by the Head of Biodiversity and Geodiversity who is Senior Responsible Owner for the SISI project. These discussions are entirely separate to pre-application advice provided by the NatureScot marine energy team. An internal 'firewall' has been put in place to enable NatureScot to input into both elements in an open and transparent way.

Annex C – SPEA Letter of Intent

While the letter of intent is helpful in better understanding the role, experience and expertise that SPEA bring to this proposed measure, we are unclear, of the role or view of other parties such as

the Instituto da Conservação da Natureza e das Florestas[12] who we understand from the Applicant hold a similar role NatureScot or the Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos[13].

Appendix 3 – Outline Compensation Implementation and Monitoring Plan (CIMP)

BOTH MEASURES

The outline CIMP is, at this point, quite high level. We agree and advise that further dialogue will be required as the application determination progresses. If the proposal is consented, we will require greater detail on aspects of the plan than is currently provided. We will continue to engage with the Applicant and MD LOT including any need for additional or replacement measures.

Further consideration should be given to the links and feedback mechanisms between the entities tasked with the implementation and delivery of measures, monitoring and adaptive management and how these ties in with discharge of consent conditions. It would be helpful to have a visual flow chart or other diagram of how this would work.

Appendix 4 - Compensation EIA

BOTH MEASURES

Further consideration maybe required once more project specific information is known.

Appendix 5 – Compensation LSE Screening

MINK CONTROL

There may be a requirement for further assessment of these measures in respect of HRA if activities are being carried out in European sites and could have direct or indirect effects on qualifying features other than those being targeted i.e. seabirds. This will require further consideration.

[12] https://www.icnf.pt/
[13] https://www.dgrm.pt/en/

Northern Lighthouse Board

Northern Lighthouse Board

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Your Ref: Ossian OWF – S36 Consent & ML Application
Our Ref: AL/OPS/ML/WIND_049_24

Licensing Operations Team – Marine Directorate
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
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24 July 2024

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990

MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

Application for Consent Under Section 36 of the Electricity Act 1989 and Marine Licences Part 4 of the Marine & Coastal Access Act 2009 to Construct and Operate the Ossian Offshore Wind Farm, Approximately 80km South East of Aberdeen

Thank you for your e-mail correspondence dated 12th July 2024 relating to the application submitted by **Ossian Offshore Wind Farm Ltd** for consent to construct and operate the Ossian Offshore Wind Farm, located approximately 80km South East of Aberdeen.

Northern Lighthouse Board note that the Ossian OWF will consist of up to 265 floating Wind Turbine Units (WTU) with an expected export capacity of 3.6 GW. Up to 15 Offshore Substation Platforms will be installed across the array, in two potential configurations of either 6 large OSPs or 3 large and up to 12 small OSPs. Export cables from the array have an proposed landfall in Lincolnshire.

NLB have reviewed the documentation associated with the application, with particular reference to the navigational safety elements of the application contained within Chapter 13 (Shipping & Navigation), Chapter 15 (Infrastructure & Other Users), and their associated Appendices.

NLB note the hazards identified through the Navigational Risk Assessment (NRA) process, and the associated mitigations detailed within throughout Chapter 13. NLB welcome the commitments to develop Post-Consent documentation, including a Lighting & Marking Plan (LMP), Navigation Safety & Vessel Management Plan (NSVMP) and a Development Specification & Layout Plan (DSLP).

Northern Lighthouse Board also note the inclusion of Appendices 24 (Outline NSVMP) and 26 (Outline LMP and AtoN Management Plan) which acknowledges a key NLB concern regarding the removal for maintenance of a Significant Peripheral Structure (SPS) which is used to host Aids to Navigation. NLB would request that within the AtoN Management Plan, Section 2.5 is renamed to "Temporary Removal of Structures with Key Aids to Navigation" to reflect that multiple AtoN will be hosted on an individual structure.

NLB note the inclusion within Section 3.4.1 (Construction Phase Methodology) that whilst the project aims to minimise any wet storage requirements, it acknowledges that unsuitable weather conditions will result in a requirement for management of wet storage of both component parts and integrated turbine units throughout the 8 year construction programme.

It is also noted within Chapter 15 (Infrastructure and Other Users) that the proposed Eastern Green Link 3 and 4 projects have not been included within the Cumulative Effects Assessment due to a lack of data. NLB request that the applicant continue to engage with SSEN(T) with regard to these projects, and their proximity to Ossian OWF.

Northern Lighthouse Board have no objection to the proposed Ossian OWF, and will continue to engage with the applicant with regard to the development of post-consent navigational safety documentation.

Yours sincerely

Redacted

Peter Douglas
Navigation Manager

Northumberland County Council

From: Gordon Halliday
To: MD Marine Renewables
Subject: Ossian Offshore Windfarm Array
Date: 03 September 2024 17:54:40

Dear Sirs

Thank you for consulting Northumberland County Council on the application for consent and EIA Report submitted by the Ossian Offshore Windfarm Ltd. for the development of the Array for the Ossian offshore wind farm located off the east coast of Scotland, approximately 80 km south-east of Aberdeen.

It is noted that at this stage Ossian OWFL is seeking consent for the Array, which comprises the wind turbines (inclusive of their floating substructures and mooring and anchoring systems), fixed bottom Offshore Substation Platforms, and inter-array and interconnector cables and the information provided in their submission relates to the Array only.

Furthermore it is noted that Ossian OWFL intends to submit separate consents, licences and permissions for the proposed offshore export cable corridor(s) and proposed onshore transmission infrastructure (including the proposed onshore export cable corridor(s) and Proposed onshore converter station(s) at the proposed landfall location(s)). It is noted that onshore connection points have not yet been identified.

The County Council has declared a Climate Emergency vowing to half its carbon footprint by 2025 and make the county carbon neutral by 2030. The Council considers that the further development of offshore wind is consistent with its wider aims. The Council is therefore generally supportive of the Ossian offshore wind project.

I would be grateful if you would keep the Council informed of this project as it develops.

Gordon Halliday
Case Officer

Gordon Halliday MA MPhil MRTPI
Planning Consultant
Planning Services
Place and Regeneration
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Northumberland County Council Stay Home

North Sea Transition Authority

From:	Stuart Walters (North Sea Transition Authority)
To:	MD Marine Renewables
Subject:	Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024
Date:	02 September 2024 17:27:48
Attachments:	image001.png

Good Afternoon,
Please find the NSTA response below to the above consultation for the Ossian Offshore Windfarm.
The NSTA has no substantive comments on the Section 36 and Marine licence applications. The Ossian offshore windfarm lease area does not interact with any active or inactive oil and gas infrastructure.
The developers should be aware that part of the lease currently overlaps the active P2321 oil and gas licence with North Sea Natural Resources as the licensee. The particular blocks the lease intersects with are Blocks 27/3, 27/9 and 27/10. This licence was awarded in the 29th Round in 2017 and is currently in the Initial term, this is due to expire in November 2024 however the licensee may seek to move into the Second term in November 2024 with a 50% relinquishment of the area. We encourage the developer to maintain engagement with North Sea Natural Resources on mutual workplans.
Best Regards,
Stuart

North Sea Transition Authority

Stuart Walters
Senior Policy Manager – Energy Transition
Strategy Directorate
NSTA, Lower Ground Floor, Sanctuary Buildings, 20 Great Smith Street, London, SW1P 3BT
stuart.walters@nstauthority.co.uk
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www.nstauthority.co.uk Follow us on Twitter @NSTAuthority

Royal Yachting Association

From: Pauline McGrow
To: MD Marine Renewables
Subject: RE: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024
Date: 15 July 2024 10:07:43
Attachments: image001.jpg
image006.png
image003.jpg
image004.jpg
image005.png

Hi Rosanne,
RYA Scotland has no objection to the consent and licences being given.
Kind Regards
Pauline

Pauline McGrow
Senior Administrator
Mob: Redacted
Royal Yachting Association Scotland
T: 0131 317 7388
E: pauline.mcgrow@ryascotland.org.uk

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: Friday, July 12, 2024 10:23 AM
To: MD.MarineRenewables@gov.scot
Cc: Iain.Macdonald3@gov.scot; Rosanne.Dinsdale@gov.scot
Subject: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024

Dear Sir/Madam

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990
MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

On 28 June 2024, Ossian Offshore Wind Farm Limited ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate the Ossian Offshore Wind Farm at a site off the coast of Aberdeen. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application. In addition, the Applicant has provided a Report to Inform Appropriate Assessment, HRA Derogation Case and Compensation Plan. Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from: https://marine.gov.scot/node/23264

There are three application pages, as follows:

- Section 36 Consent – Construction and Operation of Generating Station – Ossian Offshore Wind Farm
- Marine Licence – Construction and Operation of Generating Station – Ossian Offshore Wind Farm – 00010861
- Marine Licence – Transmission Infrastructure – Ossian Offshore Wind Farm - 00010862

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **3 September 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.

Kind regards,
Rosanne

Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot

Royal Society for the Protection of Birds Scotland

Rosanne Dinsdale
Consenting and Licensing Casework Manager
Licensing Operations Team – Marine Directorate
Scottish Government
Victoria Quay
Edinburgh
EH6 6QQ

By email: MS.MarineRenewables@gov.scot

19th September 2024

Dear Rosanne

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN

Thank you for consulting RSPB Scotland on the above application to construct and operate an offshore windfarm off the Aberdeenshire coastline, and for allowing RSPB Scotland an extension of time in which to submit our response.

RSPB Scotland recognises that climate change is the greatest threat to nature, and we support the transition to renewable energy. We consider that offshore wind has a part to play in a just transition from Scotland's dependence on fossil fuels. We support the principle of offshore wind development and agree that renewable electricity generation offshore has strong policy support.

General Comments

It must be recognised by MS-LOT in their recommendation to Ministers that models are simplified versions of reality. They do not fully capture the nuances of our dynamic natural environment, the complex behaviours of seabirds or the interlinkages between the two. Models are not complete evaluations of the possible risks windfarms poses to seabirds. This fact, combined with the sensitivity of seabird populations to small changes in adult mortality, and the requirements of the Habitats Regulations, emphasises the requirement to take a precautionary approach when assessing all possible impacts of the proposed development.

The Application site is within the foraging range of a number of bird species, for example, in the Outer Firth of Forth and St Andrew's Bay complex Special Protected Area (SPA). This is one of the most diverse marine bird concentrations in Scotland and during the breeding season provides feeding grounds for a large assemblage of over 100,000 seabirds. There are also numerous other seabird colonies in the vicinity, many of which are also designated as Special Protected Areas (SPA) due to supporting one or more rare, threatened, or vulnerable bird species as listed in Annex I of the Birds Directive, or regularly occurring migratory species. There are

therefore legal obligations under the Habitats Regulations to protect including avoiding disturbance to and deterioration of the protected sites and their species.

Seabirds are relatively long-lived, tend to breed later and have fewer young than other birds and, as a result, their populations are sensitive to even the smallest increases in adult mortality. Their survival and productivity rates can be impacted by offshore windfarms directly (i.e. collision) and indirectly (e.g. displacement from foraging areas and additional energy expenditure required to avoid and due to additional flying distances to alternative foraging areas). They are also already under severe pressure. In Scotland, the number of breeding seabirds has declined by 49% since the 1980s, according to the Scottish biodiversity indicator[1]. Kittiwake and Puffin are red listed in the Birds of Conservation Concern while Northern Gannet, Razorbill and Guillemot are amber listed. In addition, in 2019 they were assessed as moving away from target to achieve Good Environmental Status[2].

Detailed Comments

RSPB Scotland welcome the Applicant's recognition of there being potential for Adverse Effects on Site Integrity (AEoSI) for seven sites and three species arising from the project in combination with other North Sea wind farms. However RSPB Scotland **objects** to the Application on account of these AEoSI, principally in relation to the following designated sites, species, and adverse impacts:

- Black-legged Kittiwake at the following SPAs:
  - Buchan Ness to Colliston Coast SPA
  - East Caithness Cliffs SPA
  - Flamborough and Filey Coast SPA
  - Forth Islands SPA
  - North Caithness Cliffs SPA
  - Troup, Pennan and Lion's Head SPA
- Razorbill at the following SPA:
  - Fowlsheugh SPA
- Northern Gannet at the following SPAs:
  - Flamborough and Filey Coast SPA
  - Forth Islands SPA

RSPB Scotland also objects to potential AEoSIs arising from the Application in combination with other North Sea wind farms for the following SPAs and their species:

- Black-legged Kittiwake at Farne Islands SPA
- Atlantic Puffin at the Forth Islands SPA

It is also concerning that the Applicant does not appear to have followed NatureScot guidance and consequently the assessments are inadequate. Therefore, it is not possible to come to a conclusion with regard to potential impacts arising from the project alone and in combination with other projects for Common Guillemot at the following SPAs:

- Buchan Ness to Collieston Coast SPA
- Farne Islands SPA
- Forth Islands SPA
- Fowlsheugh SPA
- St. Abb's Head to Fast Castle SPA
- Troup, Pennan and Lion's Head SPA

1 The Marine Strategy Regulations 2010 (legislation.gov.uk)
2 Scottish Biodiversity Indicator – The Numbers and Breeding Success of Seabirds (1986 to 2019)

For a number of SPAs and their the predicted impacts of the project in-combination with other North Sea developments are severe. For example, after the 35 year lifetime of the Application the kittiwake population of the St. Abbs to Fast Castle SPA is predicted to be between **18.0 and 35.4%** of what it would be in the absence of the development and the gannet population of the Flamborough and Filey Coast SPA is predicted to be between 44.5 and 56.1% of what it would have been. These impacts are additional to existing population declines and events such as Highly Pathogenic Avian Influenza (HPAI). Without exception, the impacts would add pressure to SPA species already struggling and, in the case of Kittiwake and Puffin, already vulnerable to global extinction.

More detail is provided within Appendix 1.

Due to the Application's AEoSIs and the further potential AEoSIs especially due to the impact they are likely to have on the achievement of the conservation objectives, further tests apply. Under the Habitats Regulations, a project that would result in AEoSIs on European protected sites cannot be permitted unless it can be demonstrated there are no lesser damaging alternative solutions, there are imperative reasons of overriding public interest (IROPI) for the project to go ahead, and compensation measures required to maintain the coherence of the UK/National Sites Network. European sites are the most important sites for wildlife and as such it is right that maintaining them in favourable conservation status and protecting them from development carries a high weight in decision making.

Recognising that the Application site is identified as a suitable site for development in the Sectoral Marine Plan for Offshore Wind Energy, it is nonetheless clear from the Derogation Case put forward by the Applicant that the Scottish Government must ensure the requirements of Regulations 29 and 6 of the Offshore Habitats Regulations[3] are passed before it can grant consent for the proposed development.

The Scottish Government may be unable to identify suitable alternative solutions to the Application if renewable energy climate-related targets are to be achieved, and it may determine that the development must be consented for Imperative Reasons of Overriding Public Interest. But it is vital the Scottish Government undertakes the most rigorous assessment of the suitability and efficacy of the compensation measures proposed, and requires rigorous application of any agreed compensation in the interests of ensuring the overall coherence of the UK Sites Network (Natura 2000 Network). Nothing less would be acceptable.

RSPB Scotland acknowledges the proposed compensation put forward by the applicant following a shortlisting process outlined in the Appendix 2 Compensation Plan Derogation Case submitted with the Application, comprising:

i. Mink Control
ii. Seabird Bycatch Reduction

Commentary on, and analysis of these proposed compensation measures is attached to this letter as an Appendix 2. In summary, RSPB Scotland is not persuaded that these compensation measures are appropriate or sufficient as currently proposed. We have a number of concerns about the proposed Mink Control measure. We do not believe Seabird Bycatch Reduction can compensate for the possible harm arising from the Application but should it be pursued it should first be considered for Scottish waters.

Based on our assessment of the evidence presented, we also believe compensation measures are required for Guillemot and Puffin.

We welcome the opportunity to engage in ongoing dialogue with the Applicant, the Marine Directorate and NatureScot with a view to shaping and improving proposed compensation measures to ensure that they are as effective as required (ecologically, financially and legally), are as close as possible to the affected colonies and therefore will ensure the coherence the UK Sites Network.

[3] https://www.legislation.gov.uk/uksi/2017/1013/contents

Summary

RSPB Scotland's position is that we **object** to the Application due to evident and potential adverse effects on SPAs and their species and an inadequate assessment.

Should you require any further information or clarification, please do not hesitate to get in contact.

Yours sincerely

Redacted

Peter Hearn
Head of Planning and Development, RSPB Scotland

Appendix 1
Ossian Offshore Wind Farm Application
Response by the Royal Society for the Protection of Birds

1. Legislative and policy background

Introduction

1.1. In accordance with the requirements of the Marine (Scotland) Act 2010 when considering a application and making a recommendation to Ministers, MS-LOT must consider the extent to which the proposed activity accords with any marine plan for an area and the impact that it would have on the environment, human health, and other legitimate users of the sea as well as other matters considered relevant.

Policy position

1.2. Scotland's National Marine Plan[1] (NMP) (adopted 2015) sets out the strategic policies for sustainable development in both the Scotland inshore region (0 to 12 nautical miles) and within the Scottish Offshore region (12 to 200 nautical miles).

1.3. A core aim of marine planning, as set out by the NMP, is to manage human impact on the marine environment. The plan therefore seeks to put the marine environment at the heart of the planning process and adopt the principles of sustainable development. The environmental, social, and economic policies of the plan are intended to be complementary with one another as elements of sustainability.

1.4. Through policy GEN 9 (Natural Heritage), the NMP requires that development and use of the marine environment complies with legal requirements for protected areas and protected species, not result in significant impact on the national status of priority marine features, and protect, and where appropriate, enhance the health of the marine area. It also encourages a strategic approach to mitigation of potential and cumulative impacts, stating that these form an integral part of marine planning and decision making.

1.5. Renewables specific policies within the NMP direct commercial scale development to the plan options areas (as identified in the Sectoral Marine Plan) and require applications to demonstrate compliance with the Environmental Impact Assessment (EIA) and Habitat Regulations Appraisal (HRA) legislative requirements.

1.6. Since the adoption of the NMP, Scottish Government have further recognised that net zero and energy goals will have impacts on the environment, specifically marine biodiversity, as well as other users of sea. In particular, the draft Energy Strategy and Just Transition Plan (2023)[2], recognises the potential impacts on biodiversity arising from the major expansion in offshore wind. It contains a commitment to work in a way that recognises this reality and ensures appropriate protection of the natural environment as part of a joined-up approach to tacking the climate and nature crisis.

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1 National Marine Plan

2 Draft Energy Strategy and Just Transition Plan (www.gov.scot)

1.7. This follows the approach of the National Planning Framework 4 which, in policy 1 clearly sets the expectation that significant weight will be given to the global climate and nature crises when considering all development proposals. Although this document is not directly applicable to marine development, it is applicable to onshore elements and RSPB Scotland believe it is a relevant consideration, albeit one with limited weight, for development offshore. Although in early stages of development, RSPB Scotland understands that consideration is being given as to how National Marine Plan 2 can follow the approach in NPF4.

The Habitats Regulations

1.8. The Habitats Regulations seek to conserve particular habitats and species across the UK. The overall aim of these Regulations is to ensure the long-term survival of viable populations of the UK's most valuable and threatened species and habitats, throughout their natural range and to maintain and promote biodiversity.

1.9. These Regulations relevant to this application are:

1.9.1. *The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) ("the 1994 Regulations")*- applies on land in Scotland, and in Scottish inshore waters (the area of sea adjacent to Scotland from 0 to 12 nautical miles);

1.9.2. *The Conservation of Habitats and Species Regulations 2017* -applies to specific reserved and devolved activities on land in Scotland, and in Scottish inshore waters, including for consents under sections 36 and 37 of the Electricity Act 1989; and

1.9.3. *The Conservation of Offshore Marine Habitats and Species Regulations 2017* -applies to all UK offshore waters (the area of sea beyond 12 nautical miles).

1.10. These are referred to as "the Habitats Regulations" in this submission.

1.11. In Scotland, 162 Special Protection Areas (SPAs) have been classified. These have been specifically identified and protected due to supporting one or more rare, threatened, or vulnerable bird species as listed in Annex I of the Birds Directive, or regularly occurring migratory species.

1.12. Although the UK has withdrawn from the EU, the aims and objectives (as set out in the Habitats and Birds Directives recitals/preambles) remains relevant and important as discussed below. SPAs are protected in Scotland and the rest of the UK, and the standard of protection and requirements has not changed.

1.13. There have however been some changes to terminology and process due to Brexit. Of relevance to this submission is that the EU-wide network of SPAs and SACs known as "Natura 2000" Network post Brexit, no longer is of legal relevance. However, the UK-wide network of protected sites is, and is referred to as the "UK site network" [3]. In addition, references in the

[3] The Network has two names - in the UK wide Offshore Hab Regs it is referred to as the National Sites Network but in the Scottish terrestrial Hab Regs it is more called the UK Sites Network

Habitats Regulations to the “coherence of Natura 2000" must now be read as references to the coherence of the UK/National site network[4].

1.14. Using t*he Conservation of Habitats and Species Regulations 2017* (since all Habitats Regulations have identical requirements), the Regulations set out the sequence of steps to be taken by the competent authority (here the Scottish Ministers) when considering authorisation for a project that may have an impact on a European site and its species before deciding to authorise that project. These are as follows:

1.14.1. Step 1: consider whether the project is directly connected with or necessary to the management of the SPA and its species (regulation 63 (1)). If not –

1.14.2. Step 2: consider, on a precautionary basis, whether the project is likely to have a significant effect on the SPA and its species, either alone or in combination with other plans or projects (the Likely Significance Test) (regulation 63 (1)).

1.14.3. Step 3: make an appropriate assessment of the implications for the SPA and its species in view of its conservation objectives. There is no requirement or ability at this stage to consider extraneous (non-conservation e.g. economics, renewable targets, public safety etc) matters in the appropriate assessment (regulation 63 (1)).

1.14.4. Step 4: consider whether it can be ascertained that the project will not, alone or in combination with other plans or projects, adversely affect the integrity of the SPA and its species, having regard to the manner in which it is proposed to be carried out, and any conditions or restrictions subject to which that authorisation might be given (the Integrity Test) (regulation 63 (6)).

1.14.5. Step 5: In light of the conclusions of the assessment, the competent authority shall agree to the project only after having ascertained that it will not adversely affect the integrity of the SPA, alone or in combination with other plans or projects (regulation 63 (5)).

1.14.6. Step 6: only if the competent authority is satisfied that, there being no alternative solutions and the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to (regulation 64(2)), may be of a social or economic nature), they may agree to the plan or project notwithstanding a negative assessment of the implications for the European site (regulation 64 (1)).

1.14.7. Step 7: in the event of the no alternative solutions and imperative reasons of overriding public interest tests being satisfied, the Scottish Ministers must secure that any necessary compensatory measures are taken to ensure that the overall coherence of the Natura 2000 network is protected (regulation 68).

1.15. It is important to add that in addition to the requirements set out above, in relation to both inshore area and the offshore marine area, any competent authority must exercise its functions so as to secure compliance with the requirements of the Habitats Directive and the Birds

[4] Please know this legislative changes has been done by way of a clarification within regulation 2(3), interpretation as follows “(3) **For the purposes of these Regulations, and any guidance issued…references to *"Natura 2000"* …are to be construed as references to the national site network**." which makes clear that although terrestrial Has Regs, reg 69 and the Offshore Regs, reg 36(2) still refer to *(2) The appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of Natura 2000 is protected*. That is to be “interpreted” as a reference to UK/National Site Network

Directive; and in particular to take such steps as it considers appropriate to secure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds[5], having regard to the requirements of Article 2 of the Birds Directive.[6] And for offshore SPAs regulation 26, Offshore Regulations requires competent authorities to exercise their functions (as far as possible) to secure steps to avoid the disturbance of species and the deterioration of habitats or habitats of species within those sites.

Appropriate assessment

1.16. As part of the assessment requirements, regulation 63, Habitats Regulations (regulation 28, Offshore Regulations) require the application of the precautionary principle. Meaning that if it cannot be excluded, on the basis of objective scientific information, that it is likely to have a significant effect on a SPA and its species, an appropriate assessment will be required: see *Waddenzee*.[7]

1.17. Following that appropriate assessment, a project may only be granted consent if the competent authority is convinced that it will not have an adverse effect on the integrity of the European site(s) and their species of concern, having applied the precautionary principle and taken account of the conservation objectives for those sites and their habitats and species. *Waddenzee* confirmed that where doubt remains as to the absence of adverse effects on the integrity of the site, approval should be refused[8] (subject to the considerations of alternative solutions, imperative reasons of overriding public interest and the provision of compensatory measures as set out in regulations 64 & 68).

1.18. An appropriate assessment requires all aspects of the project which could affect the site, its species and its conservation objectives to be identified in the light of the best scientific knowledge in the field.[9] The competent authority,

> *"taking account of the conclusions of the appropriate assessment of the implications…for the site concerned, in the light of the conservation objectives, are to authorise such activity only if they have made certain that it will not adversely affect the integrity of the site. That is the case where no reasonable scientific doubt remains as to the absence of such effects"[10].*

1.19. Integrity of the SPA should be considered as the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is classified. A site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required. When looking at the 'integrity of the

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5 As required by Article 3, Birds Directive

6 See regulation 9(1) and 10(1)(2)(3) and (8) of the Habitats Regulations and regulation 6 of the Offshore Regulations. Article 2 Birds Directive imposes a requirement on Member States to maintain all wild bird populations at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or if necessary, to restore the population of these species to that level (Article 2)

7 CJEU Case-127/02; [2004] ECR-7405 at [45]

8 [56]-[57]

9 [61]

10 [59]

site', it is therefore important to take into account a range of factors, including the possibility of effects manifesting themselves in the short, medium and long-term.[11]

1.20. As is clear from the requirements of the Habitats and Offshore Regulations, the assessment of integrity is to be considered by reference to the impact of the project alone and in-combination with other plans and projects, taking account of the site(s) conservation objectives. As clearly set out in *Waddenzee*, para 61:

> "***61*** *In view of the foregoing, the answer to the fourth question must be that, under Article 6(3) of the Habitats Directive,* ***an appropriate assessment of the implications for the site concerned of the plan or project implies that, prior to its approval, all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field.*** *The competent national authorities, taking account of the appropriate assessment of the implications of mechanical cockle fishing for the site concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects*." (emphasis added)

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

1.21. These EIA requirements state that consent cannot be granted for Environmental Impact Assessment (EIA) development unless the decision-maker has taken into account environmental information including an environmental statement which describes the significant effects, including cumulative effects, of the development on the environment. This will include effects on all wild bird species whether SPA species or not.

1.22. Offshore wind farms have the potential to impact on birds through collision with rotating blades, direct habitat loss, disturbance from construction activities, displacement during the operational phase (resulting in loss of foraging/roosting area) and impact on bird flight lines (i.e. barrier effect) and associated increased energy use by birds for commuting flights between roosting and foraging areas. These additional potential impacts must be taken into account.

The UK Marine Strategy Regulations and Good Environmental Status

1.23. Also of relevance to achieving sustainable development in our seas is the Marine Strategy Framework Directive[12]. This was developed in response to concerns that although existing legislation protected the sea from some specific impacts, it was sectoral and fragmented. To overcome this, the directive seeks to reduce impacts on marine waters regardless of where impacts occur by applying an ecosystem approach.

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[11] See European Commission Guidance; Wind Energy Developments and Natura 2000, 2011, page 82-83, paragraph 5.5.3

[12] EU Council Directive 2008/56/EC

1.24. Applying an ecosystem approach is important. Our natural environment is complicated, and the outcome of an impact may manifest elsewhere. It also feeds into the concept of sustainable development and the vision for clean, healthy, safe, productive, and diverse seas; managed to meet the long term needs of nature and people as set out Scotland's National Marine Plan.

1.25. The Marine Strategy Framework Directive was transposed into UK law by the Marine Strategy Regulations 2010. It requires the UK to put in place the necessary management measures to achieve 'Good Environmental Status' (GES) in UK seas by 2020. This involves protecting the marine environment, preventing its deterioration, and restoring it where practical alongside using marine resources sustainably. As with the Habitats Regulations, although the UK has withdrawn from the EU, the legislative requirement for GES remains in place.

1.26. Governments of the UK have collectively failed to meet 11 out of the 15 indicators of Good Environmental Status (GES) for our seas with the marine bird indicator moving away from target. For breeding seabirds, more species, especially surface feeders who depend on small fish at the surface (35% in the Greater North Sea), are now experiencing frequent, widespread breeding failures[13]. The reduced availability of small fish is largely responsible for these declines and impacts on breeding success.

Section summary

1.27. Taken together, there is a clear legal and policy requirement to protect the marine environment and deliver sustainable development. The UK Marine Strategy is clear in its aims of improving the state of the marine environment through taking a large scale, holistic approach. Therefore proposals which further impact the ability of the UK to achieve GES should be considered carefully. The ability of an application to comply with the vital requirements of the Habitats Regulations which seek the long-term survival of viable populations of Europe's most valuable and threatened species and habitats, must also be scrutinised and considered in detail.

2. Ornithological interest of the Application site

2.1 The UK is of outstanding international importance for its breeding seabirds and wintering marine birds. As with all Annex I and regularly migratory species, the UK has a particular responsibility under the Birds Directive to secure their conservation.

2.2 Seabirds are relatively long-lived, and as a result, their populations are sensitive to small increases in adult mortality. Their survival and productivity rates can be impacted by offshore windfarms directly (i.e. collision) and indirectly (e.g. displacement from foraging areas, additional energy expenditure, potential impacts on forage fish and wider ecosystem impacts such as changes in stratification).

2.3 The probability of seabirds being impacted by an application relates to whether they are likely to be in the area of the development, and their behaviour in the vicinity of the development. This will depend on a number of factors, including the application's proximity to seabird colonies, the species within those colonies, the species behaviours (including their foraging

[13] CEFAS Marine Assessment Tool – Marine Breeding Bird Success https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/birds/breeding-successfailure/

range, food preferences and flight behaviour), the attraction of the application array itself as a foraging area, and the attraction of areas beyond the application array for foraging (which would require birds to transition through the development array or detour around it).

Species of interest

2.4 The ***key species of*** interest ***in relation to the application are*** Black-legged Kittiwake (*Rissa tridactyla*), Northern Gannet (*Morus bassanus*), Common Guillemot (*Uria aalge*), Razorbill (*Alca torda*) and Atlantic Puffin (*Fratercula artica*).

2.5 A summary of their population status within the Britain, Isle of Man and Channel Islands is provided in Table 1 below.

Species	**% World Population**	**UK Colony Trends 1986 to 2021**
Black-legged Kittiwake	5.3	Declining
Northern Gannet	59.1	Mostly increasing but a few declining colonies *(N.B. Gannets were badly impacted by HPAI in 2021-22)*
Guillemot	6.2	Some colonies increasing but many declining
Razorbill	12-24	A few colonies increasing but many declining
Atlantic Puffin	3.3-3.9	Declining

Table 1: Proportion of the world population of seabird species relevant to the Ossian Offshore Windfarm. Population taken from Seabirds Count, 2023[14]

Northern Gannet

2.6 Northern Gannet are endemic to the North Atlantic although the majority breed in Britain and Ireland. They tend to breed on offshore islands and stacks. Gannets are typically long-lived seabirds, living to an average age of 17 years and not breeding until the age of 5 years. During the breeding season, adults will take it in turn to incubate the single egg for approximately 42-46 days with the chick fledging unaccompanied by its parents after approximately 90 days. Some colonies, such as that on the Bass Rock in the Firth of Forth – the largest Gannetry in the world - are particularly large and conspicuous. Gannet can catch fish at depths of 20 meters but also feed from the surface on small shoaling fish such as sandeel.

2.7 During the breeding season Gannets are central-place foragers meaning they are constrained to return to the nest after foraging to maintain territories and raise their young. Foraging trip durations are dependent on colony size with birds from larger colonies making longer foraging trips (both in distance and duration)[15].

2.8 Gannet were particularly badly impacted by Highly Pathogenic Avian Influenza (HPAI) during the 2022 breeding season with large numbers of deaths reported. On the Bass Rock a catastrophic breeding failure was reported which is likely to vastly impact their future population numbers and the robustness of those populations to additional mortality.

2.9 They are amber listed in the Birds of Conservation Concern.

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

[15] Wakefield, ED, Bodey, TW, Bearhop, S et al. (19 more authors) 2013. *Space Partitioning Without Territoriality in Gannets.* Science, 341 (6141). 68 - 70. ISSN 0036-8075

2.10 Northern Gannet have been assessed as having a high vulnerability to collisions with rotating turbine blades (Furness *et al.,* 2013[16], Wade *et al.,* 2016[17]), partly due to their flight altitude and manoeuvrability. Breeding Gannets tracked with GPS from Helgoland in the eastern North Sea travelled around and through operational wind farms. However, it is unclear whether behaviour before and after construction differs[18].

2.11 There is a need to assess the possible impacts to Gannets throughout the year as behavioural constraints change; starting when they arrive back at the colony for the breeding season until they leave on migration, and then throughout the winter. During autumn and winter potential interaction with turbines will not be limited to birds from the closest breeding colony but birds from across the breeding range as they disperse and travel south.

2.12 There is consistent evidence of wind farm avoidance by non-breeding Gannets and Gannets on migration. But little is known about the behavioural responses of breeding Gannets to offshore turbines resulting from a lack of operational turbines within foraging range of breeding colonies.

Black-legged Kittiwake

2.13 Black-legged Kittiwake are members of the gull family. They tend to nest on vertical rocky-sea cliffs and during the breeding season feed on energy rich pelagic shoaling fish, such as sandeel, sprat and juvenile herring. Kittiwakes are surface feeders and are highly dependent on sandeels in the breeding season, as such they are particularly vulnerable to food shortage. During the breeding season Kittiwakes are central-place foragers meaning they are constrained to return to the nest after foraging to maintain territories and raise their young. When not in attendance at the nest or away on a foraging trip, Kittiwakes use the sea below the cliffs for maintenance behaviours such as loafing (spending time on the water to preen or rest, not related to feeding), preening and bathing. During the breeding season the highest densities of Kittiwakes at sea are within 1km of the colony[19].

2.14 Kittiwake are red listed in the Birds of Conservation Concern and on the OSPAR list of threatened and/or declining species and have been assessed by the IUCN as vulnerable to global extinction. They are particularly susceptible to collision risk but are also vulnerable to distributional changes as a result of the presence of turbines.

Common Guillemot

2.15 Common Guillemot are member of the auk family along with Puffin and Razorbill. They typically form highly dense colonies and lay a single egg (without a nest) on a cliff, narrow ledges, or other inaccessible areas. They tend to eat fish and crustaceans. Guillemots are typically long-lived seabirds, living to an average age of 23 years and not breeding until the age of 5 years. Breeding success is highest where birds are most tightly packed. Adults will

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16 Furness, R. W., Wade, H. M., & Masden, E. A. 2013. *Assessing vulnerability of marine bird populations to offshore wind farms.* Journal of environmental management, *119*, 56-66.

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

18 Peschko V, Mendel B, Mercker M, Dierschke J, Garthe S. 2021. *Northern Gannets (Morus bassanus) are strongly affected by operating offshore wind farms during the breeding season*. J Environ Manage. 1; 279:111509. doi: 10.1016/j.jenvman.2020.111509

19 McSorley C.A., Dean B.J., Webb A. & Reid, J.B. 2003. *Seabird use of waters adjacent to colonies: Implications for seaward extensions to existing breeding seabird colony Special Protection Areas*. JNCC Report No. 329, JNCC, Peterborough.

incubate the egg for 28-37 days, fledging then taking place when the chick is ~3 weeks old. The chick will then complete its growth at sea accompanied by its male parent.

2.16 The response of Guillemots to offshore wind farms is mixed although there is a paucity of data for breeding birds. Non-breeding birds have been shown to avoid offshore wind farms, as have breeding birds in the southern North Sea, whereas in the Irish Sea, Guillemots have shown no changes in abundance post construction and at another site, increased in abundance. More recent work has suggested that there may be some habituation over time to the presence of wind farms.

2.17 While details are still emerging, the 2024 breeding season for Guillemot appears to be extremely poor, with large number of nest sites vacant, birds present but not laying eggs and high degree of breeding asynchronicity[20]. The causes of this are likely to be multifactorial, and may include HPAI, high water temperatures and resultant poor body conditions. The long term, population scale consequences are unclear, but may be severe. As a result, an extremely high level of precaution should be applied in considering the impacts arising from any offshore development on this species.

2.18 They are amber listed in the Birds of Conservation Concern.

Razorbill

2.19 Razorbill tend to nest hidden from view on small ledges or in cracks and scree of rocky cliffs faces and on boulder-fields. They are typically long-lived seabirds, living to an average age of 13 years and not breeding until the age of 4 years. During the breeding season, adults will incubate the single egg for approximately 32 days with the chick fledging after approximately 21 days. The chick will then complete its growth at sea accompanied by its male parent.

2.20 Adult Razorbill feed on 0-group sandeel, chick diet comprises of 0-group sandeel, 1+ group sandeel and sprat[21]. Maximum foraging trip ranges have been found to vary between colony. The maximum recorded foraging range is 312 km from Fair Isle, however, maximum distances recorded from 5 other colonies range between 36 – 92km[22].

2.21 Razorbill are amber listed in the Birds of Conservation Concern.

Puffin

2.22 Puffin are one of the most iconic seabird species around Scotland with their brightly coloured beaks during the breeding season. They tend to nest in burrows and so are susceptible to mammalian predators. There is some evidence their diet changes seasonally[23] but during the breeding season, they typically feed on shoaling fish such as sandeel, sprat and herring which they catch by underwater pursuit.

2.23 They are vulnerable to displacement[28] which can lead to a loss of feeding grounds and excess energy expenditure as they take less direct routes to reach alternative prey sources.

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20 See, for example, https://isleofmaynnr.wordpress.com/2024/05/15/troubling-times/

21 Thaxter et al. 2013. *Modelling the Effects of Prey Size and Distribution on Prey Capture Rates of Two Sympatric Marine Predators*. PLoS One. https://doi.org/10.1371/journal.pone.0079915

22 Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019. *Desk-based revision of seabird foraging ranges used for HRA screening*. BTO Research Report No. 724

23 Harris, M., Leopold, M.F., Jensen, J.-K., Meesters, E.H. & Wanless, S. 2015. *The winter diet of the Atlantic Puffin Fratercula arctica around the Faroe Islands.* Ibis 157: 468– 479

2.24 Puffin are red listed in the Birds of Conservation Concern and have been assessed by the IUCN as vulnerable to global extinction.

Proximity of seabird colonies

2.25 The application array location is close to several SPAs with qualifying features within foraging range of the application array area. This includes the Outer Firth of Forth and St Andrews Bay Complex SPA, the Forth Islands SPA, Fowlsheugh SPA and St Abb's Head to Fast Castle SPA.

2.26 As SPAs, these sites are subject to general duties to protect, conserve and restore the designated features of the site to meet their conservation objectives, to prevent deterioration of the site's habitats and to prevent significant disturbance to the sites. If an application might impact a qualifying feature, as set out in Chapter 1, assessment in accordance with the Habitats Regulations is required.

Forth Islands SPA

2.27 The Forth Islands SPA[24] consists of a series of islands in the Firth of Forth. The islands of Inchmickery, Isle of May, Fidra, The Lamb, Craigleith and Bass Rock were classified in 1990 and an extension to the site, consisting of Long Craig, was classified in 2004.

2.28 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- Migratory species including:
    a. **Northern Gannet**, representing 8.2% of world's biogeographical population and 13.6% of the Great Britain population); and
    b. **Atlantic Puffin,** (representing 1.5% of the total F.a.grabae biogeographic population and 3.1% of the Great Britain population).
- In excess of 20,000 individual seabirds during the breeding season including, in addition to Northern Gannet and Atlantic Puffin:
    a. **Razorbill** representing 1.4% of the Great Britain population;
    b. **Common Guillemot** representing 2.2% of the Great Britain population; and
    c. **Black-legged Kittiwake** representing 1.7% of the Great Britain population.

2.29 The conservation objectives for the Forth Islands SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*
- *To ensure for the qualifying species that the following are maintained in the long term:*
    a. Population of the species as a viable component of the site
    b. Distribution of the species within site
    c. Distribution and extent of habitats supporting the species
    d. Structure, function and supporting processes of habitats supporting the species
    e. No significant disturbance of the species

[24] Forth Islands SPA Citation and Conservation Objectives

Fowlsheugh SPA

2.30 Fowlsheugh SPA[25] is a stretch of sheer cliffs on the east coast of Aberdeenshire plus a two-kilometre extension into the marine environment. The cliffs were designated in 1992 and the marine extension in 2009.

2.31 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- Migratory species including:

  a. **Common Guillemot** representing 5% of the Great Britain population; and
  b. **Black-legged Kittiwake** representing 7.5% of the Great Britain population.

- In excess of 20,000 individual seabirds during the breeding season including:

  a. **Razorbill** representing 3.9% of the Great Britain population.

2.32 The conservation objectives for the Fowlsheugh SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

- *To ensure for the qualifying species that the following are maintained in the long term:*

  a. Population of the species as a viable component of the site
  b. Distribution of the species within site
  c. Distribution and extent of habitats supporting the species
  d. Structure, function and supporting processes of habitats supporting the species
  e. No significant disturbance of the species

St Abb's Head to Fast Castle SPA

2.33 St Abb's Head to Fast Castle SPA[26] comprises an area of sea cliffs and 1km marine extension stretching over 10km along the Berwickshire Coast. The cliffs were designated in 1997 and the marine extension in 2009.

2.34 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- In excess of 20,000 individual seabirds during the breeding season including:

  a. **Razorbill** representing 1% of the Great Britain population;
  b. **Common Guillemot** representing 3% of the Great Britain population; and
  c. **Black-legged Kittiwake** representing 4% of the Great Britain population.

2.35 The conservation objectives for the St Abb's Head to Fast Castle SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

- *To ensure for the qualifying species that the following are maintained in the long term:*

  a. Population of the species as a viable component of the site

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25 Fowlsheugh SPA Citation and Conservation Objectives
26 St Abb's Head to Fast Castle SPA Citation and Conservation Objectives

b. *Distribution of the species within site*
c. *Distribution and extent of habitats supporting the species*
d. *Structure, function and supporting processes of habitats supporting the species*
e. *No significant disturbance of the species*

East Caithness Cliffs

2.36 The East Caithness Cliffs SPA[27] includes most of the sea-cliff areas between Wick and Helmsdale on the north-east coat of the Scottish mainland and includes an approximate 2km seaward extension. It was designated in 1996 and the marine extension in 2009.

2.37 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- In excess of 20,000 individual seabirds during the breeding season including:

a. **Razorbill** representing 2% of the Great Britain population;
b. **Common Guillemot** representing 3% of the Great Britain population; and
c. **Black-legged Kittiwake** representing 1% of the Great Britain population.

2.38 The conservation objectives for the East Caithness Cliffs SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

- *To ensure for the qualifying species that the following are maintained in the long term:*

a. *Population of the species as a viable component of the site*
b. *Distribution of the species within site*
c. *Distribution and extent of habitats supporting the species*
d. *Structure, function and supporting processes of habitats supporting the species*
e. *No significant disturbance of the species*

North Caithness Cliffs

2.39 The North Caithness Cliffs SPA[28] includes sea-cliffs and islands at the north coast of the Scottish mainland. It includes a seaward extension that extends approximately 2km into the marine environment to include the seabed, water column and surface. It was designated in 1996 and the marine extension in 2009.

2.40 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- In excess of 20,000 individual seabirds during the breeding season including:

a. **Razorbill** representing 3% of the Great Britain population;
b. **Common Guillemot** representing 4% of the Great Britain population; and
c. **Black-legged Kittiwake** representing 3% of the Great Britain population.

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27 East Caithness Cliffs SPA Citation and Conservation Objectives
28 North Caithness Cliffs SPA Citation and Conservation Objectives

2.41 The conservation objectives for the North Caithness Cliffs SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*
- *To ensure for the qualifying species that the following are maintained in the long term:*

  a. *Population of the species as a viable component of the site*
  b. *Distribution of the species within site*
  c. *Distribution and extent of habitats supporting the species*
  d. *Structure, function and supporting processes of habitats supporting the species*
  e. *No significant disturbance of the species*

Troup, Pennan and Lion's Heads

2.42 The Troup, Pennan and Lion's Heads SPA[29] is a 9km stretch of sea cliffs along the Aberdeenshire coast in Scotland. It includes a seaward extension that extends approximately 2km into the marine environment to include the seabed, water column and surface. It was designated in 1997 and the marine extension in 2009.

2.43 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- In excess of 20,000 individual seabirds during the breeding season including:

  a. **Black-legged Kittiwake** representing 6% of the Great Britain population;
  b. **Common Guillemot** representing 4% of the Great Britain population; and

2.44 The conservation objectives for the Troup, Pennan and Lion's Heads SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*
- *To ensure for the qualifying species that the following are maintained in the long term:*

  a. *Population of the species as a viable component of the site*
  b. *Distribution of the species within site*
  c. *Distribution and extent of habitats supporting the species*
  d. *Structure, function and supporting processes of habitats supporting the species*
  e. *No significant disturbance of the species*

Buchan Ness to Collieston Coast

2.45 The Buchan Ness to Collieston Coast SPA[30] is a stretch of south-east facing cliff in Aberdeenshire, Scotland. It includes a seaward extension that extends approximately 2km into the marine environment to include the seabed, water column and surface. It was designated in 1998 and the marine extension in 2009.

2.46 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

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29 Troup, Pennan and Lions Heads SPA Citation and Conservation Objectives

30 Buchan Ness to Collieston Coast SPA Citation and Conservation Objectives

- In excess of 20,000 individual seabirds during the breeding season including:

    a. **Common Guillemot** representing 1% of the Great Britain population; and
    b. **Black-legged Kittiwake** representing 6% of the Great Britain population.

2.47 The conservation objectives for the Buchan Ness to Collieston Coast SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

- *To ensure for the qualifying species that the following are maintained in the long term:*

    a. Population of the species as a viable component of the site
    b. Distribution of the species within site
    c. Distribution and extent of habitats supporting the species
    d. Structure, function and supporting processes of habitats supporting the species
    e. No significant disturbance of the species

Farne Islands

2.48 The Farne Islands SPA [31]is a group of low-lying islands 2-6km off the coast of Northumberland in north-east England. It includes a seaward extension that extends approximately 2km into the marine environment to include the seabed, water column and surface. It was designated in 1996 and the marine extension in 2009.

2.49 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- In excess of 20,000 individual seabirds during the breeding season including:

    a. **Common Guillemot** representing 2% of the biogeographic population; and
    b. **Seabird assemblage** including **Black-legged Kittiwake**.

2.50 The conservation objectives for the North Caithness Cliffs SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

- *To ensure for the qualifying species that the following are maintained in the long term:*

    a. Population of the species as a viable component of the site
    b. Distribution of the species within site
    c. Distribution and extent of habitats supporting the species
    d. Structure, function and supporting processes of habitats supporting the species
    e. No significant disturbance of the species

Flamborough and Filey Coast SPA

2.51 The Flamborough and Filey Coast SPA is a stretch of cliffs running along the Yorkshire coast. It includes a seaward extension that extends approximately 2km into the marine environment to include the seabed, water column and surface. The Flamborough Head and Bempton Cliffs SPA was originally designated in 1993 for its internationally important colony of Kittiwakes. In

[31] Farne Islands SPA Citation and Conservation Objectives

2016, the protected area was extended and renamed as the Flamborough and Filey Coast SPA. This extension provided specific protection to another three species, the overall seabird assemblage, and the terrestrial cliff environment of Filey Brigg. The revised SPA also protects the inshore waters around the seabird breeding cliffs, from mean low water to 2km offshore.

2.52 It qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- In excess of 20,000 individual breeding seabirds and more than 1% of the biogeographical population of four regularly occurring migratory species;

  a. **Black-legged Kittiwake** (2% North Atlantic),
  b. **Northern Gannet** (2.6% North Atlantic),
  c. **Common Guillemot** (15.6% North Atlantic) and
  d. **Razorbill** (2.3% North Atlantic).
  e. **Seabird assemblage** including over 2,000 individual **Northern Fulmar**

2.53 The conservation objectives for the Flamborough and Filey Coast SPA are as follows:

- *To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and*

- *To ensure for the qualifying species that the following are maintained in the long term:*

  a. Population of the species as a viable component of the site
  b. Distribution of the species within site
  c. Distribution and extent of habitats supporting the species
  d. Structure, function and supporting processes of habitats supporting the species
  e. No significant disturbance of the species

Proximity of Marine Protected Areas

Outer Firth of Forth and St Andrews Bay Complex SPA

2.54 The Outer Firth of Forth and St Andrews Bay Complex SPA[32] is a large estuarine and marine site consisting of the adjacent Firth of Forth and Tay. It attracts one of the largest and most diverse marine bird concentrations in Scotland. It complements adjacent SPAs including the Forth Islands SPA.

2.55 It was designated in 2020 and qualifies under Article 4(2) of the Birds Directive due to the regular presence of:

- Migratory species including:

  a. **Northern Gannet** (*Morus bassanus*), representing 1.4% of biogeographical population and 2.7% of the Great Britain population.

- In excess of 20,000 individual seabirds during the breeding season including:

  a. **Atlantic Puffin** (*Fratercula arctica*) representing 5.3% of the Great Britain population,
  b. **Black-legged Kittiwake** (*Rissa tridactyla*) representing 1.6% of the Great Britain population and;

[32] Outer Firth of Forth and St Andrews Bay Complex SPA Citation

c. more than 2,000 individual **Common Guillemots** (*Uria aalge*).

- In excess of 20,000 individual seabirds during the non-breeding season including more than 2,000 individual **Common Guillemot**, **Black-legged Kittiwake,** and **Razorbill** (*Alca torda*).

2.56 The draft conservation objectives for the Outer Firth of Forth and St Andrews Bay Complex SPA are as follows:

- *To ensure that the qualifying features of the Outer Firth of Forth and St Andrews Bay Complex SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.*

- *To ensure that the integrity of the Outer Firth of Forth and St Andrews Bay Complex SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:*

  a. The populations of qualifying features are viable components of the site.
  b. The distributions of the qualifying features throughout the site are maintained by avoiding significant disturbance of the species.
  c. The supporting habitats and processes relevant to the qualifying features and their prey/food resources are maintained, or where appropriate restored, at the Outer Firth of Forth and St Andrews Bay Complex SPA.

2.57 Black-legged Kittiwake and other species are considered to be in an unfavourable condition and therefore there is an overarching 'restore' objective for the site. Should plans or projects compromise the ability of the unfavourable qualifying features to recover (e.g. result in a further decline or accelerate the rate of decline, or prevent a recovery from occurring), then the Outer Firth of Forth and St Andrews Bay Complex SPA will not make an appropriate contribution to achieving Favourable Conservation Status (FCS) across the Atlantic Biogeographic Region.

3. Offshore ornithology assessment

Introduction

3.1 RSPB Scotland recognise that the Applicant invested a great amount of time and resource into the ornithological assessment process and wish to formally express that we welcome and appreciate this work. The documentation is well written and structured and, except for the assessment for Common Guillemot, as discussed below, presented in a logical and clear manner.

3.2 In this section, we have provided commentary on the impact methodology. With the exception of Gannet collision risk modelling, we consider the approach advised by NatureScot and detailed in their online guidance to be the best reflection of the likely impact of the proposed development. For Gannet collision risk modelling, RSPB Scotland prefers that an additional breeding season avoidance rate is presented to reflect the uncertainty inherent in the assessment as the recommended avoidance rate is based on the non-breeding season and does not reflect behaviours during the breeding season.

3.3 As set out in Searle et al (2023a)[33], assessing impacts of offshore windfarms and other renewables developments is inherently uncertain. This uncertainty is propagated throughout the impact assessments, as there are not only direct impacts, but ecosystem wide impacts that can change, for example, the abundance and availability of prey. Multiple data sources and modelling techniques are used to capture a simplified version of reality. They do not fully capture the complexity of seabird behavioural or demographic processes in a inherently dynamic marine environment.

3.4 It is therefore vital that the precautionary approach required by the Habitats Regulations is taken. This means if scientific data is incomplete or hard to get and it is not possible to complete a full evaluation of all possible or potential risks an activity/development may cause, account should be taken of all possible harm. Potential harm should not be dismissed due to the lack of scientific data.

3.5 Importantly, the precautionary principle requires the Applicant to demonstrate with scientific certainty that something would not be harmful. The concept of something being overly precautionary dismisses the inherent uncertainty in modelling and overlooks the simplistic version of reality that the modelling captures.

3.6 Not recognising these uncertainties risks poorly informed decisions being made. Furthermore, an underestimation of impacts will have repercussions when consenting later offshore wind development. If a precautionary approach is taken from the beginning, the likelihood of irreversible damage occurring is reduced even whilst our knowledge base is incomplete and modelling improves.

Impact methodology

NatureScot Guidance

3.7 Throughout the assessment, the Applicant presents two approaches, the one recommended by NatureScot and the Applicant's preferred approach. The presentation of alternative approaches is to be welcomed but RSPB Scotland recommend that the NatureScot approach is the most realistic reflection of the likely ornithological impacts of development and crucially incorporate a suitable degree of precaution to reflect the degree of uncertainty inherent in the assessment process. The guidance provided by NatureScot[34] is the result of many years of wide-ranging research and review, drawing on extensive internal and external expertise. It is subject to regular review and provides one of the most detailed resources for assessment on the ornithological impacts on seabirds currently available. The Applicant has largely followed this guidance, with the exception of the approach to colony distance when apportioning, which has been misunderstood and raises serious concerns with the assessment of Guillemot.

Screening out of Common Guillemot from the Report to Inform Appropriate Assessment

3.8 Through the apportioning process detailed in Part 3 Appendix 3A of the Report to Inform the Appropriate Assessment, the Applicant has screened Guillemot out of the scoping for Likely Significant Effect at all SPAs through a misapplication of the NatureScot guidance. In

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[33] Searle, K. R., O'Brien, S. H., Jones, E. L., Cook, A. S. C. P., Trinder, M. N., McGregor, R. M., Donovan, C., McCluskie, A., Daunt, F., and Butler, A., 2023a. *A framework for improving treatment of uncertainty in offshore wind assessments for protected marine birds*, ICES Journal of Marine Science, 2023;, fsad025, https://doi.org/10.1093/icesjms/fsad025

[34] https://www.nature.scot/doc/guidance-note-1-guidance-support-offshore-wind-applications-marine-ornithology-overview

determining connectivity, distances from the centre of the Array to the centre of the colony have been compared with mean maximum foraging range + 1 SD for each species. The correct approach is to determine if there is spatial overlap between the colony and the developments, so should be minimum linear distance. Because of this misapplication of guidance, the Applicant has screened out all SPAs for breeding Guillemot, despite there being evidence of both connectivity and likely effect. As such we cannot have any confidence in the assessment for this species and so are **unable to reach conclusions as to the significance of impacts**, in particular on the Guillemot feature of Troup, Pennan and Lion's Head, Buchan Ness to Collieston Coast, Fowlsheugh, Forth Islands, St. Abbs Head to Fast Castle and Farne Islands SPAs.

3.9 RSPB Scotland also wish to highlight that the rationale behind excluding Guillemot from the Assessment was far from clear, apparently only being added close to submission, and an audit trail leading to the decision being conspicuously absent. This has made understanding and evaluating the assessment considerably more difficult.

3.10 While the misapplication of the guidance will have resulted in the screening out of other species and site combinations, these are unlikely to make a material change to our conclusions.

Collision Risk Modelling

3.11 In order to assess the mortality that could arise from avian collision with turbine blades, the Applicant has used the Band Collision Risk Model, (CRM) in both deterministic and stochastic formulations (sCRM). This approach is welcomed by RSPB Scotland. This Band model combines a series of parameters describing the turbine design and operation with estimates of a bird's size and behaviour to generate a predicted number of birds that would collide with a turbine over a given time period. The stochastic formulation was initially developed by Masden (2015) and then produced in an easier to use interface by McGregor et al, (2018). The stochastic version allows for some account of uncertainty and variability in parameters to be made.

3.12 The input parameters related to bird size and behaviour include a parameter known as "Avoidance Rate". This is defined by Band (2012) as the inverse of the ratio of the number of actual collisions to number of predicted collisions. As such "Avoidance Rate" is a misnomer; it is a catch all term for the inconsistency between predicted and actual mortalities, an inconsistency that can be derived from a variety of sources, including avoidance behaviour *per se*, survey error, natural variability, and model misparameterisation.

3.13 The Applicant has used Avoidance Rates (see above) in the sCRM, as presented in Ozsanlav-Harris *et al.,* 2022[35], which have now formally been adopted in NatureScot guidance. Whilst RSPB Scotland agrees with the majority of the latter advised rates, including the rate for non-breeding Gannets, in our opinion, the additional presentation of a 98% avoidance rate is appropriate for breeding Gannets. This is because the figures used for the calculation of avoidance rates advocated by the SNCBs are largely derived from the non-breeding season for Gannet[36,37]. During the breeding season, Gannets are constrained to act as central place

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[35] Luke Ozsanlav-Harris , Richard Inger & Richard Sherley 2022. Review of data used to calculate avoidance rates for collision risk modelling of seabirds. JNCC Report 732 (Research & review report), JNCC, Peterborough, ISSN 0963-8091. https://hub.jncc.gov.uk/assets/de5903fe-81c5-4a37-a5bc-387cf704924d

[36] Cook, A S C P, Humphreys, E. M., Masden, E. A., & Burton, N. H. K. 2014. *The Avoidance Rates of Collision Between Birds and Offshore Turbines*. Edinburgh.

[37] Cook, A.S.C.P., Humphreys, E.M., Bennet, F., Masden, E.A., Burton, N.H.K. 2018. *Quantifying avian avoidance of offshore wind turbines: Current evidence and key knowledge gaps*. Marine Environmental Research, 140, 278-288

foragers meaning they return to the colony after feeding in order to maintain territories, incubate eggs and provide for chicks. Once chicks have fledged adult Gannets remain at sea and no longer visit the colony. Differences in behaviour between the breeding and non-breeding season are likely to result in changes in reactive behaviour.

3.14 There is evidence that the foraging movements and behaviour of Gannets will vary in relation to stage of the breeding season in response to changes in the distribution and abundance of prey and changing constraints as they progress from pre-laying to chick-rearing[38]. GPS tracking of Gannets breeding on the Bass Rock between 2010 and 2021 has shown variation in the two-dimensional foraging behaviour of birds across the breeding season (prior to chick-rearing and during chick-rearing), between sexes, and between years[38,39,40]. Three-dimensional tracking of Gannets during chick-rearing has also revealed that flight height and flight speed both vary according to behaviour, sex and wind conditions[41,42,43] and similar patterns have been recorded in other seabirds[44] . Because any error in the use of flight height and flight speed as input parameters in the CRM should be corrected for in the use of the Avoidance Rate, any seasonal variation in these parameters should also be reflected in variation in the Avoidance Rate, in the absence of any actual evidence from the breeding season.

Distributional responses

3.15 Distributional responses to the presence of a wind farm can occur through displacement or barrier effects. Displacement arises when there is a significant reduction in the density of birds within the wind farm footprint and the surrounding area (the buffer zones), which may be partial or total displacement, compared with the baseline situation. Displacement is equivalent to habitat loss and may be temporary or permanent, depending on whether or not there is habituation, *i.e.* adjustment to the presence of the wind farm and a resumption of use of the area. It may be triggered during construction, or during operation, depending on the direct cause.

3.16 Barrier effects arise when an obstacle, such as a wind farm, causes birds to divert from their intended path in order to reach their original destination. It is generally considered to act mainly on birds in flight (SNCBs 2022). As such they are similar, though not the same, as displacement effects. However, in practical terms it is currently not possible to disentangle the two and so barrier and displacement effects are considered together in impact assessment, as

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38 Lane, J.V., Jeavons, R., Deakin, Z., Sherley, R.B., Pollock, C.J., Wanless, R.J., Hamer, K. C., 2020. *Vulnerability of northern Gannets to offshore wind farms; seasonal and sex specific collision risk and demographic consequences*. Marine Environmental Research. 162.

39 Cleasby, I.R., Wakefield, E.D., Bodey, T.W., Davies, R.D., Patrick, S.C., Newton, J., Votier, S.C., Bearhop, S., Hamer, K.C. 2015a. *Sexual segregation in a wide-ranging marine predator is a consequence of habitat selection. Marine Ecology Progress Series*, 518, 1-12

40 Lane, J.V. and Hamer, K.C. 2021. *Annual adult survival and foraging of Gannets at Bass Rock, Scotland: Report to the Ornithology subgroup of the Forth and Tay Regional Advisory Group (FTRAG-O*) – October 2021

41 Cleasby, I.R., Wakefield, E.D., Bearhop, S., Bodey, T.W., Votier, S.C., Hamer, K.C., 2015b. *Three-dimensional tracking of a wide-ranging marine predator: flight heights and vulnerability to offshore wind farms. Journal of Applied Ecology*, 52, 1474–1482

42 Lane, J.V., Spracklen, D.V., Hamer, K.C., 2019. *Effects of windscape on three-dimensional foraging behaviour in a wideranging marine predator, the northern Gannet.* Marine Ecology Progress Series, 628, 183–1

43 Lane, J.V., Jeavons, R., Deakin, Z., Sherley, R.B., Pollock, C.J., Wanless, R.J., Hamer, K. C., 2020. *Vulnerability of northern Gannets to offshore wind farms; seasonal and sex specific collision risk and demographic consequences*. Marine Environmental Research. 162.

44 Masden, E.A., Cook, A.S.C.P., McCluskie, A., Bouten, W., Burton, N.H.K, Thaxter, C. 2021. *When speed matters: the importance of flight speed in an avian collision risk model.* Environmental Impact Assessment Review, 90

per SNCB advice (*Ibid.*) This assessment must be made on all the birds present on site, regardless of whether in flight or on the water.

3.17 There are two methods for the assessment of distributional responses to the presence of turbines. The first is the Matrix approach, which is somewhat simplistic. It relies on two metrics, displacement rate and mortality rate, which are derived from expert opinion, and often presented as a range in order to reflect the considerable uncertainty inherent in both. It is carried out for two distinct time periods, the breeding and non-breeding season, although these may be further sub-divided. Both metrics are proportions or percentages. The displacement rate is the proportion of birds that will either be displaced from the wind farm or prevented from flying through (barrier effects). Mortality rate is the number of birds subject to these displacement or barrier effects that will die as a consequence. The metric is applicable only to fully sized individuals and as such, the method does not account for any effects of breeding success. For long lived, low fecundity species like seabirds, the most likely response to additional stressors during the breeding season is the abandonment of a breeding attempt, or chick death through poor attendance. As such, the omission of chick mortality can be seen as a major limitation of the approach and demonstrates the need to take a precautionary approach in determining the range of mortalities that may arise through distributional responses the presence of a wind farm. Conversely, the ability for the approach to consider both breeding and non-breeding seasons is a considerable advantage.

3.18 The SeabORD approach uses a simulation model to predict the time/energy budgets of breeding seabirds during the chick-rearing period and translates these into projections of adult annual survival and productivity for each individual and at the population level. Underpinning the model are empirical data including tracking data and so it can be considered to have more basis in biological reality than the Matrix approach. Furthermore, as it explicitly models productivity it accounts for any chick death or abandonment of breeding attempts as a result of distributional change. However, the approach is only currently suitable for the breeding season, and so the Matrix approach must be used for the non-breeding season.

3.19 The Applicant has correctly identified that a wide range of rates of displacement have been recorded in studies. These may be due to a range of factors, but it is likely the main driver will be the inherent dynamism of the marine environment. As such, reliance on studies carried out at a single site, should be avoided. For example, Trinder *et al*., (2024)[45] reported no displacement of auk species within a single site, Beatrice wind farm in the Moray Firth, whereas a recent peer reviewed study across 15 sites with auks present reported that 65% of these studies detected an effect[46]. Of relevance, the latter study also reported a stronger effect for wind farms further from the coast; Ossian is a considerable distance, approximately 84 kms, from the Aberdeenshire coast.

3.20 The displacement and mortality rates presented in the NatureScot guidance represent the most probable range of impacts arising from a distributional response to the presence of offshore wind farms and RSPB Scotland recommend that these rates form the basis of any decision as to significance of impacts.

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[45] Trinder, M., O'Brien, S. H., & Deimel, J. (2024). A new method for quantifying redistribution of seabirds within operational offshore wind farms finds no evidence of within-wind farm displacement. *Frontiers in Marine Science*, *11*, 1235061.

[46] Lamb, J., Gulka, J., Adams, E., Cook, A., & Williams, K. A. (2024). A synthetic analysis of post-construction displacement and attraction of marine birds at offshore wind energy installations. *Environmental Impact Assessment Review*, *108*, 107611.

Summary of significant impacts - project in isolation

Common Guillemot

3.21 As described above, the Applicant has failed to carry out a proper assessment of the impacts of the development of the Guillemot feature of any SPA, but in particular the Troup, Pennan and Lion's Head, Buchan Ness to Collieston Coast, Fowlsheugh, Forth Islands, St. Abbs Head to Fast Castle and Farne Islands SPAs. As such RSPB Scotland is **unable to reach conclusions as to the significance of impacts on these SPAs** arising through the project alone. In the context of the extremely poor guillemot breeding season in 2024, it is likely that the scale of impact will be unacceptable.

Summary of significant impacts, in combination with other offshore wind farms

3.22 The Applicant has only presented in combination assessment for a sub-set of SPA and species combinations, using a *de minimis* approach, as described above. Below we summarise the results of the assessments that were taken forward to PVA level assessment, and where the impacts can be considered significant. However this does not mean we agree that other species and sites may have significant impacts, rather that we are unable to reach conclusions as the assessment, including PVA, was not completed. These in combination impacts are presented both including and excluding the impacts from the proposed Berwick Bank offshore wind farm. The impacts also include those predicted from West of Orkney Offshore Wind Farm, the assessment methodology of which has been heavily criticised by NatureScot and RSPB Scotland. However while the revised assessment is still being drafted, we do not believe it will make a material difference to our conclusions.

Black-legged Kittiwake

3.23 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **Forth Islands SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.994 and 0.996 with Berwick Bank excluded and 0.988 to 0.992 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **79.0 and 85.4%** with Berwick Bank excluded and **64.5 to 75.7%** with Berwick Bank included, of what it would have been in the absence of the development.

3.24 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **Fowlsheugh SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.994 and 0.996 with Berwick Bank excluded and 0.0.989 to 0.994 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **81.3 and 86.2%** with Berwick Bank excluded and **66.6 to 79.7%** with Berwick Bank included, of what it would have been in the absence of the development.

3.25 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **St. Abbs to Fast Castle SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.996 and 0.997 with Berwick Bank excluded and 0.953 to 0.972 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **86.9 and 99.1%** with Berwick Bank excluded and **18.2 and 35.6%** with Berwick Bank included, of what it would have been in the absence of the development.

3.26 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **Buchan Ness to Colliston Coast SPA** declining with a ratio of impacted to unimpacted population growth rate of 0.996 with Berwick Bank excluded and between 0.955 to 0.996 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **86.1 and 87.6%** with Berwick Bank excluded and **82.8 and 85.6%** with Berwick Bank included, of what it would have been in the absence of the development.

3.27 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **Troup, Pennan and Lion's Head SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.995 and 0.996 with Berwick Bank excluded and 0.994 to 0.996 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **82.8 and 87.2%** with Berwick Bank excluded and **79.8 and 85.4%** with Berwick Bank included, of what it would have been in the absence of the development.

3.28 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **East Caithness Cliffs SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.991 and 0.993 with Berwick Bank excluded and 0.990 to 0.993 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **71.0 and 78.4%** with Berwick Bank excluded and **68.7 and 72.0%** with Berwick Bank included, of what it would have been in the absence of the development.

3.29 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **North Caithness Cliffs SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.993 and 0.994 with Berwick Bank excluded and 0.992 to 0.994 with Berwick bank

included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **77.1 and 81.3%** with Berwick Bank excluded and **74.0 and 79.5%** with Berwick Bank included, of what it would have been in the absence of the development.

3.30 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **Farne Islands SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.997 and 0.998 with Berwick Bank excluded and 0.993 to 0.995 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **91.2 and 93.6%** with Berwick Bank excluded and **76.8 and 84.4%** with Berwick Bank included, of what it would have been in the absence of the development.

3.31 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Kittiwake at the **Flamborough and Filey Coast SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.993 and 0.994 with Berwick Bank excluded and 0.993 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **77.9 and 79.7%** with Berwick Bank excluded and **76.5 and 78.8%** with Berwick Bank included, of what it would have been in the absence of the development.

Common Guillemot

3.32 As discussed above, the Applicant has failed to carry out a proper assessment of the impacts of Ossian Offshore Wind Farm on the Guillemot feature of any SPA both for the project alone or in combination with other wind farms. As such we are **unable to reach conclusions as to the significance of impacts arising from the project in-combination with other development**, **on the Guillemot feature of Troup, Pennan and Lion's Head, Buchan Ness to Collieston Coast, Fowlsheugh, Forth Islands, St. Abbs Head to Fast Castle and Farne Islands SPAs.**

Razorbill

3.33 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Razorbill at the **Fowlsheugh SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.993 and 0.999 with Berwick Bank excluded and 0.992 and 0.998 with Berwick bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **78.5 and 95.6%** with Berwick Bank excluded and **74.6 and 94.6%** with Berwick Bank included, of what it would have been in the absence of the development.

Atlantic puffin

3.34 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from distributional change associated with

Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of puffin at the **Forth Islands SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.996 and 0.999 with Berwick Bank excluded and 0.996 and 0.999 with Berwick Bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **87.8 and 97.7%** with Berwick Bank excluded and **86.5 and 97.5%** with Berwick Bank included, of what it would have been in the absence of the development.

Gannet

3.35 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Gannet at the **Forth Islands SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.993 and 0.995 with Berwick Bank excluded and 0.991 and 0.993 with Berwick Bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **76.3 and 82.2%** with Berwick Bank excluded and **71.2 and 78.7%** with Berwick Bank included, of what it would have been in the absence of the development**.**

3.36 Within the range of likely mortalities derived using the methods advocated by NatureScot and RSPB Scotland during scoping, the impacts arising from collision and distributional change associated with Ossian Offshore Wind Farm in combination with other North Sea wind farms are predicted to result in the annual population growth rate of Gannet at the **Flamborough and Filey Coast SPA** declining with a ratio of impacted to unimpacted population growth rate of between 0.978 and 0.984 with Berwick Bank excluded and 0.978 and 0.984 with Berwick Bank included. This means that after the 35-year lifetime of Ossian Offshore Wind Farm, the population size of the SPA is expected to be between **44.9 and 56.4%** with Berwick Bank excluded and **44.5 and 56.1%** with Berwick Bank included, of what it would have been in the absence of the development**.**

Adverse Effect on Site Integrity (AEoSI)

3.37 An AEoSI means potential effects from the development that are also likely to prevent the achievement of the conservation objectives and cannot be mitigated. These international sites are the most important sites for wildlife. They are legally required to be conserved and if necessary restored to favourable conservation status. RSPB Scotland welcome the fact that the Applicant has acknowledged that AEoSI cannot be excluded for a number of these features

3.38 For the application in isolation, RSPB Scotland unable reach conclusions with regard to AEoSI for Common Guillemot at Troup, Pennan and Lion's Head, Buchan Ness to Collieston Coast, Fowlsheugh, Forth Islands, St. Abbs Head to Fast Castle, and Farne Islands SPAs.

3.39 In combination with other developments in the North Sea, RSPB Scotland consider potential AEoSI cannot be excluded with regard to the following SPAs:

- Kittiwake at Forth Islands SPA, Fowlsheugh SPA, St Abbs to Fast Castle SPA, Troup, Pennan and Lion's Head SPA, East Caithness Cliffs SPA, North Caithness Cliffs SPA, Buchan Ness to Collision Coast SPA, Farne Islands and Flamborough and Filey Coast SPA

- Common Guillemot at Buchan Ness to Colliston Coast SPA and Troup, Pennan and Lion's Head SPA
- Razorbill at Fowlsheugh SPA
- Atlantic Puffin at Forth Islands SPA, and
- Northern Gannet at Forth Islands SPA and Flamborough and Filey Coast SPA.

3.40 For the application in combination with other developments, RSPB Scotland are unable to reach conclusions with regard to AEoSI for Common Guillemot at Troup, Pennan and Lion's Head, Buchan Ness to Collieston Coast, Fowlsheugh, Forth Islands, St. Abbs Head to Fast Castle and Farne Islands SPAs.

3.41 In addition, given the possibility of adverse effects on these breeding seabird SPAs, potential adverse effects cannot be excluded for the Outer Firth of Forth and St. Andrews Bay Complex SPA.

Section summary

3.42 The application would result in large and significant impacts to Kittiwake, Guillemot, Razorbill, Puffin and Gannet in combination with other projects. This is in addition to the background population declines and the very recent impacts of HPAI.

3.43 The Habitats Regulations are clear that a project that would result in AEoSI on European protected sites cannot be permitted unless it can be demonstrated there are no lesser damaging alternative solutions, there are imperative reasons of overriding public interest (IROPI) for the project to go ahead, and compensation to maintain the integrity of the sites network can be secured. The Applicant has put forward a derogation case and RSPB Scotland's review of this is appended. The Applicant's case is put forward only for Kittiwake, Razorbill and Gannet. Based on our review of the evidence presented in the Assessment, there should also be presented a derogation case for Guillemot and Puffin.

Appendix 2
RSPB Scotland commentary on the Applicant's proposed compensation measures

The fundamental issues with the Applicant's assessment, along with the presentation of the outputs of the modelling of population scale impacts, in our view mean the appropriate assessment is inadequate, and therefore insufficient for the robust consideration required to enable a proper understanding of all potential adverse effects of the Application. Whilst we appreciate the Applicant may provide more information (and we reserve the right to review our comments and concerns in light of it) unless the Applicant resolves these fundamental issues, in our view the assessment currently provided is not fit for purpose and therefore the full extent of the compensation measures required cannot be calculated.

1. RSPB Scotland approach to evaluating compensation measures

Introduction

1.1. In short - it is vital that details and evidence are provided to enable confidence ecologically, financially and legally, in the compensation proposals and such information must be available for review by all Interested parties. This section sets out RSPB Scotland's approach to evaluating compensation measures. It includes our general approach to assessing compensation proposals and the level of detail we consider is required in order to evaluate compensation proposals as part of the Application's determination, before drawing out some general issues raised by the Applicant's proposals. We have set it out under the following headings:

- RSPB Scotland's approach to assessing compensation proposals;
- What level of detail is required on proposed compensation measures?
- Generic issues raised by the Applicant's compensation proposals:
  - Lack of specific proposals and locations for compensation measures
  - Scale of compensation
  - Lead-in times for compensation
  - Lifetime of compensation in relation to damage
  - Environmental assessment of the proposed compensation measures.

RSPB Scotland's approach to assessing compensation proposals

1.2. Set out below is the key criteria and requirements from the EC guidance[1] on compensatory measures, along with additional commentary based on RSPB Scotland's experience of the principles that should be applied when assessing compensatory measures.

[1] EC (2018) Managing Natura 2000 sites – The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (21/11/18) C(2018) 7621 final

EC criteria	EC guidance summary (emphasis added)	RSPB Scotland additional commentary
Targeted	Measures should be the **most appropriate to the impact predicted** and **focused on objectives and targets addressing the Natura 2000 elements affected**. Must **refer to structural and functional aspects of site integrity and habitats/species affected**. **Must consist of ecological measures**: payments to individuals/funds are not appropriate.	Clear objectives and success criteria must be established for the compensation measures. Must address the ecological functions and processes required by impacted species/habitat. Requires shared understanding and agreement on what the impacts are i.e. need to agree nature, magnitude including that they will continue for as long as the project's impacts. This includes the time likely to be required for the SPAs to recover from those impacts in the case of proposals that are in place for a specified time period. This is in order to define objectives for compensation measures and to set out the success criteria to determine whether those objectives have been/are being achieved.
Effective	**Based on best scientific knowledge available alongside specific investigations for the location where the measures will be implemented**. Must be **feasible and operational in reinstating the conditions needed to ensure the overall coherence** of the Natura 2000 network. **Measures where no reasonable guarantee of success should not be considered**. The likely success of the compensation scheme should influence final approval of the plan or project in line with the prevention principle. The **most effective option, with the greatest chance of success, must be chosen**. **Detailed monitoring required** to ensure long-term effectiveness with remediation provisions if shown to be less effective.	Scientific evaluation of proposed measures must be carried out before consent is granted to avoid agreeing to measures that is/are not effective or technically feasible. This should include appropriate baseline survey and assessment. Compensation must address the impacted SPAs features to ensure overall coherence of the network for that feature is maintained. Substitution is not acceptable. Must be clearly defined timescales for delivery and measuring success (See success criteria under Targeted above). Monitoring must directly relate to the target species and the relevant ecological functions and processes. The compensation measures should be provided in perpetuity in line with obligations to ensure the overall coherence of the UK Site Network is maintained. Where it is not possible to devise compensatory measures to offset the adverse effects on site integrity, the project should not proceed.
Technical feasibility	**Design must follow scientific criteria and evaluation** in line with best scientific knowledge and take into account the specific requirements of the ecological features to be reinstated.	See **Effective** above.
Extent	Extent required **directly related to**:	Based on an assessment of the necessary ecological requirements to restore species' populations and the related habitat structure and functions identified in the compensation objectives. Determining the minimum

EC criteria	EC guidance summary (emphasis added)	RSPB Scotland additional commentary
	- the **quantitative and qualitative aspects inherent to the elements of integrity likely to be impaired** - **estimated effectiveness of the measure(s)** Therefore, ratios best set on a case-by-case basis. Ratios should generally be well above 1:1. Ratios of 1:1 or below only considered when shown measures will be fully effective in reinstating structure and functionality in a short period of time.	appropriate quantity will require an understanding of the quality of the compensation measures and how effective they will be in reinstating the required structures and functions. Any identified uncertainty in success should be factored in to increased ratios. Ratios need to be used where they make ecological sense and will help secure a successful outcome by providing more of something. Simply multiplying capacity to address uncertainty risks giving a false level of confidence. If there is no reasonable guarantee of success that measure should not be considered (see **Effective** under EC criteria).
Location	**Located in areas where they will be most effective** in maintaining overall coherence of the Natura 2000 network. Pre-conditions to be met include: - **must be within same range/ migration route/wintering areas for bird species** and **provide functions comparable those justifying selection of original site esp. geographical distribution**; - **must have/be able to develop the ecological structure and functions required by the relevant species** (or habitat) - **must not jeopardise integrity of any other Natura 2000 site**. Spatial search hierarchy starting as close as possible to the impacted Natura 2000 site and working out from there.	While the preference is for compensation measures as geographically close to the location of the damage, it is important to consider whether or not the compensation measures will be subject to pressures impacting their efficacy in that location e.g. prey availability, disturbance, and/or other impacts from the same or similar developments such as collision risk or displacement due to offshore wind farms. Therefore, compensation measures should be located so as to maximise proximity while minimising external pressures that may reduce likelihood of success. Compensation measures proposed to benefit SPA features must not result in damage to the integrity of any other SPA, SAC or Ramsar site and their features.
Timing	Case by case approach but **must provide continuity in the ecological processes essential to maintain the structure and functions that contribute to the Natura 2000 network coherence**. Requires **tight co-ordination between implementation of the plan or project and the compensation measures**. Factors to consider include: - **no irreversible damage to the site before compensation in place**	Compensation measures should be fully functional before any damage occurs to ensure the overall coherence of the UK Site Network is protected. This requires careful alignment of the timelines for implementing the plan or project and the compensation measures. Suggested time lags in delivering fully functional compensation will need to be carefully considered and can only be accepted where this will not compromise the continuity of essential ecological processes, Any effect of delay should be factored into the design and additional compensation measures provided (see also **Extent** above).

EC criteria	EC guidance summary (emphasis added)	RSPB Scotland additional commentary
	- **compensation operational at the time damage occurs**. If not possible, over-compensation required - **time lags only admissible if will not compromise objective of "no net loss" to coherence of Natura 2000 network**; - May be possible to scale down in time depending on whether the negative effects are expected to arise in short, medium or long term. **All technical, legal or financial provisions must be completed before plan or project implementation starts** to prevent unforeseen delays that compromise effective compensation measures.	
Long-term implementation	**Legal and financial security required for long-term implementation** and **for protection, monitoring and maintenance of sites to be secured before impacts occur.**	Legal rights to secure and implement the compensation measures must be in place prior to consent being granted. And robust financial guarantees are required to fund implementation, monitoring and any necessary remediation measures.

Table 1: Criteria for designing compensatory measures

Mink Control

1.3. While we are supportive in principle of mink control measures, RSPB Scotland require further details to determine whether it is acceptable to be used as a compensation measure for seabirds. Results from a number of studies have shown varying effects of mink control on seabirds. In the Scottish West Coast, terns have shown higher breeding success at controlled sites, compared to uncontrolled sites (Ratcliffe et al., 2006[2]; Ratcliffe et al., 2008[3]). In the Archipelago National Park, Finland, Mink have been controlled since the 1990s. The effect it has had on biodiversity has been substantial, with many seabirds, land birds, and water birds having benefited from it (Nordstrom et al., 2003; Banks et al., 2008). Of the seabirds at this site, Great Black-backed Gulls have not shown signs of change since the control, Razorbills have recolonised the sites, and Arctic Skuas, Arctic Terns and Common Gulls have increased their breeding success.

1.4. While we acknowledge there is good evidence of the removal of mink increasing local populations of razorbill, we also agree with the applicant that "Examples of mink predation of razorbill are limited by both the difficulty in accessing or even observing razorbill nesting locations" We also request that further information of the types of colonies where mink predation has been a problem is required such as the nature of the habitat in which Razorbill

[2] Ratcliffe, N., Houghton, D., Mayo, A., Smith, T., Scott, M., 2006. The breeding biology of terns on the western isles in relation to mink eradication. Atlantic Seabirds 8, 127-135

[3] Ratcliffe, N., Craik, C., Helyar, A., Roy, S., Scott, M., 2008. Modelling the benefits of American Mink Mustela vison management options for terns in west Scotland. Ibis 150, 114-121

nesting. For example, Nordström and Korpimäki, 2004[4] describe mink as having a negative effect on Razorbill population on small Baltic islands and mink removal having positive effect on these populations (Nordström et al., 2003)[5] However, these were very low lying islands with the auks nesting under relatively accessible boulders. It would be expected for the situation with cliff nesting, and much less accessible, Razorbill to be rather different.

1.5. Conversely, the evidence for mink predation on Kittiwake is scant; the Applicant only provides two examples from the UK. The first of these is quoted from Furness *et al.,* (2013[6]) describing a mink at St. Abbs predating "half of the Kittiwake colony during one breeding season", (at the time, this would have been c. 8000 birds). However, the National Trust for Scotland annual colony report describes this as a *suspected* mink predation event, whereby half a sub-colony, Horsecastle, was lost, accounting for the chicks of 56 breeding pairs[7]. We also note that a more recent review by the same lead author (MacArthur Green, 2021[8]) of potential seabird compensation measures highlights "a lack of clear evidence that this species (*Kittiwake*) would benefit from measures" including mink control.

1.6. The other quoted evidence is a personal communication from Professor Xavier Lambin describing carcasses found at Troup Head. We have complete faith in the rigour of Professor Lambin and acknowledge the breadth of his expertise in this area and the important work he as done as part of the Hebridean Mink Project and the Mink Control Project. As such, it would be of great value to understanding the potential benefits to kittiwake of mink control if the evidence he has gathered at Troup Head and elsewhere was shared as a structured part of the Application rather than as anecdotal evidence. the images of mink at a kittiwake colony in Norway are of low down the cliff face, so it may not be a problem higher up. Applicant argues all this evidence is compelling, we disagree!

1.7. For any mink management (eradication or control) measure to work, the RSPB notes there needs to be evidence of:

- Mink predation of the species required to benefit from the measure (Kittiwake, Razorbill and, preferably, Guillemot); and that:
- The predation is having a detrimental effect on the target colony e.g. evidence of reduced breeding productivity; and
- Evidence that the proposed measure can be successfully implemented and maintained in practical terms; and
- That the species targeted to benefit will respond positively to the measure implemented.

1.8. While mink predation on seabirds can be extensive, it can also take the form of isolated incidents that can be unpredictable, both in terms of magnitude and of timing of occurrence. This adds considerable uncertainty to outcome predictions of implementation of the measure and as such there would need to be a rigorous monitoring programme in place as an important

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4 Nordström, M., & Korpimäki, E. (2004). Effects of island isolation and feral mink removal on bird communities on small islands in the Baltic Sea. Journal of Animal Ecology, 73(3), 424-433

5 Nordström, M., Högmander, J., Laine, J., Nummelin, J., Laanetu, N., & Korpimäki, E. (2003). Effects of feral mink removal on seabirds, waders and passerines on small islands in the Baltic Sea. Biological Conservation, 109(3), 359-368.

6 Furness, R. W., MacArthur, D., Trinder, M., & MacArthur, K. (2013). Evidence review to support the identification of potential conservation measures for selected species of seabirds. Report to Defra.

7 Rideout, KJ and Harris, S (2001) St. Abbs Head NNR seabird report 2001

8 MacArthur Green. 2021. Review of seabird strategic compensation options. Report to Crown Estate Scotland and SOWEC: HRA Derogation Scope B. Available at: https://www.offshorewindscotland.org.uk/media/12970/hra-derogation-scope-b-report.pdf

component of the measure. Further to this, for this measure to be acceptable as compensation there would also need to be a detailed adaptive management plan in place detailing how this measure would be implemented, monitored and the triggers for adapting the measures when necessary.

Seabird Bycatch Reduction

1.9. In addition to the concerns expressed above about the proposed approach to providing compensation through Mink Control, RSPB Scotland has a number of concerns about the proposed approach to providing compensation through seabird (Razorbill and Northern Gannet) bycatch reduction.

1.10. It is recognised that bycatch (the incidental capture of non-target species in fishing activity) is one of the leading drivers of seabird population declines (Dias et al, 2019), with thousands of seabirds killed through bycatch every year in the UK (Northridge et al, 2020) and therefore it is vital reduction measures are brought forward. However, due to low levels of direct monitoring on vessels, the true levels of seabird mortality in fishing gear are likely to be underestimated.

1.11. In the UK, high risk gear types for seabird bycatch include longlines and gillnets. While best practice mitigation measures exist for some gear types like longlines, effective measures for gillnets are yet to be established and require further research, e.g., spatial/temporal measures, above-water deterrents (looming eye buoys and predator-shaped kites) and gear-switching.

1.12. RSPB Scotland notes Table 3.4 in the Appendix 2 Compensation Plan Derogation Case, but disagrees with the summary conclusion therein that seabird bycatch reduction should be pursued as compensation measures. We believe seabird bycatch reduction should be being done as part of the Scottish Government's seabird protection and conservation duties. Whilst it may be possible for some bycatch measures to be strategic compensation in the future, we have grave concerns about such measures being suggested for project level compensation as here. Even if deemed acceptable, RSPB Scotland object to such measures being taken in Portugal.

Summary of pre-requisites to assess a bycatch reduction proposal

1.13. To determine if the Applicant's proposed bycatch measures are feasible and effective, we consider it helpful to assess their proposals against the ACAP Best Practice Seabird Bycatch Mitigation Criteria and Definition[9], which are outlined below. ACAP is a formal agreement under the Convention on the Conservation of Migratory Species of Wild Animals (known as CMS), to which the UK is one of 13 global Parties. The Seabird Bycatch Working Group of ACAP comprises representatives from these Parties, alongside invited experts with technical expertise. As such, it is the most widely recognised and credible forum for assessing and determining best practice seabird bycatch mitigation techniques.

- Individual fishing technologies and techniques should be selected from those shown by experimental research to significantly reduce the rate of seabird incidental mortality[10] to the lowest achievable levels. Experimental research yields definitive results when performance of candidate mitigation technologies is compared to a control (no deterrent), or to status quo in the fishery. When testing relative performance of

[9] ACAP (2021) ACAP Review of mitigation measures and Best Practice Advice for Reducing the Impact of Pelagic Longline Fisheries on Seabirds. In: ACAP - Twelth Meeting of the Advisory Committee. Online

[10] This may be determined by either a direct reduction in seabird mortality or by reduction in seabird attack rates, as a proxy

mitigation approaches, analysis of fishery observer data can be plagued with a myriad of confounding factors. Where a significant relationship is demonstrated between seabird behaviour and seabird mortality in a particular system or seabird assemblage, significant reductions in seabird behaviours, such as the rate of seabirds attacking baited hooks, can serve as a proxy for reduced seabird mortality. Ideally, where simultaneous use of fishing technologies and practices is recommended as best practice, research should demonstrate significantly improved performance of the combined measures.

- Fishing technologies and techniques, or a combination thereof, should have clear and proven specifications and minimum performance standards for their deployment and use. Examples would include: specific bird scaring line designs (lengths, streamer length and materials; etc.), number and deployment specifications (such as aerial extent and timing of deployment); night fishing defined by the time between the end of nautical dusk and start of nautical dawn; and, line weighting configurations specifying mass and placement of weights or weighted sections.
- Fishing technologies and techniques should be demonstrated to be practical, cost effective and widely available. Commercial fishing operators are likely to select for seabird bycatch reduction measures and devices that meet these criteria including practical aspects concerning safe fishing practices at sea.
- Fishing technologies and techniques should, to the extent practicable, maintain catch rates of target species. This approach should increase the likelihood of acceptance and compliance by fishers.
- Fishing technologies and techniques should, to the extent practicable, not increase the bycatch of other taxa. For example, measures that increase the likelihood of catching other protected species such as sea turtles, sharks and marine mammals, should not be considered best practice (or only so in exceptional circumstances).
- Minimum performance standards and methods of ensuring compliance should be provided for fishing technologies and techniques, and clearly specified in fishery regulations. Relatively simple methods to check compliance should include, but not be limited to, port inspections of branch lines to determine compliance with branch line weighting, determination of the presence of davits (tori poles) to support bird scaring lines, and inspections of bird scaring lines for conformance with design requirements. Compliance monitoring and reporting should be a high priority for enforcement authorities.

1.14. Despite these concerns should such measures be taken forward as compensation for this Application it is vital bycatch reduction measures for Razorbill and Northern Gannet first are considered within Scottish waters to ensure such measures are more closely aligned with potential effects to our resident seabird populations due to this Application. Therefore the bycatch reduction measure referenced in Table 3.4 in the Appendix 2 Compensation Plan Derogation Case should only be progressed in Scottish waters but once more direct and more efficient measures have been considered and only if those measures are not possible legally, financially or ecologically.

1.15. As set out in detail above, it is vital as set out in detail above that any harm (or potential harm) caused by developments are "compensated". That compensation must not only be targeted at the protected sites and species to be potentially harmed but also as close as possible to that harm and crucially fulfilment of the requirement to protect the integrity and coherence of the **UK** International Sites' network. Therefore UK measures must be prioritised.

1.16. If measures are not possible close to the harm, it becomes even more vital that the measures have connectivity to the SPA species UK populations impacted upon. For Gannet there is strong evidence of UK birds passing through Portuguese waters, but this passage is also important for birds from other countries, for example, Germany and Iceland[11][12].Conversely, Razorbill from the UK are more likely to remain in the North Sea than to move to Portugal[13].

1.17. When the Energy Act 2023 strategic compensation is up and running, it is wholly possible that bycatch could be a measures to be considered in the future due to additional possibility that Act enables, meaning bycatch could be considered as an option for strategic compensation as part of the fulfilment of objectives of the Fisheries Act 2020, which include minimising and, where possible, eliminating incidental catches of sensitive species, including seabirds and addressing bycatch in respect of achieving Good Environmental Status (GES) for descriptor Birds (D1, D4), through being a signatory, for example, to the Joint Fisheries Statement. Key target fisheries operating within UK waters are likely to also include non-UK registered vessels. For bycatch mitigation to realise the most benefit, all vessels will need to be targeted. Therefore, any measures developed will need to target all vessels operating in UK/Scottish waters (depending on the target region).

1.18. RSPB Scotland expects that all trials for bycatch mitigation measures should be accompanied by Remote Electronic Monitoring (REM) with cameras onboard all vessels, to allow for robust testing to determine effective application of the mitigation as well as the ecological impact. To withstand peer review scrutiny, standards will need to be agreed on data transparency, data analysis, and presentation of data and results.

2. Conclusions

2.1. Noting the comments above the submission of, and consultation on additional information is required to ensure that full consideration of legally, ecologically and financially appropriate and possible Compensation measures relating to the SPAs and their species that will and or may be affected by the Application and only if these are not feasible alternative solutions and IROPI confirmed.

2.2. RSPB Scotland would welcome further and ongoing engagement with the Applicant, the Marine Directorate and NatureScot, to discuss possible compensation measures prior to the determination of the application.

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11 Garthe, S., Peschko, V., Fifield, D.A. *et al.* Migratory pathways and winter destinations of Northern Gannets breeding at Helgoland (North Sea): known patterns and increasing importance of the Baltic Sea. *J Ornithol* (2024). https://doi.org/10.1007/s10336-024-02192-x

12 Furness, R. W., Hallgrimsson, G. T., Montevecchi, W. A., Fifield, D., Kubetzki, U., Mendel, B., & Garthe, S. (2018). Adult Gannet migrations frequently loop clockwise around Britain and Ireland. *Ringing & Migration*, *33*(1), 45–53. https://doi.org/10.1080/03078698.2018.1472971

13 Buckingham, L., Bogdanova, M.I., Green, J.A., Dunn, R.E., Wanless, S., Bennett, S., Bevan, R.M., Call, A., Canham, M., Corse, C.J. and Harris, M.P., 2022. Interspecific variation in non-breeding aggregation: a multi-colony tracking study of two sympatric seabirds. *Marine Ecology Progress Series*, *684*, pp.181-197.

Scottish and Southern Electricity Networks

Scottish Hydro Electric Transmission Plc.
Prime View, Prime Four Business Park
Kingswells Causeway
Aberdeen
AB15 8NY

The Scottish Government
Marine Directorate Licensing Operations Team
Marine Laboratory
Aberdeen
AB11 9DB

Submitted via email: MD.MarineRenewables@gov.scot

05 September 2024

Dear Marine Directorate, Licensing and Operations Team,

REF: Ossian Offshore Wind Farm – Section 36 Consent and Marine Licence Application

Thank-you for the invitation to provide comment on the Ossian Offshore Windfarm Section 36 Consent and Marine Licence Application.

As the owner of the electricity transmission network in the North of Scotland, Scottish Hydro Electric Transmission Plc (SSEN Transmission), we welcome the inclusion of subsea cables within the Array EIA. It is noted that there is specific reference to SSEN Transmission projects within Chapter 15, Infrastructure and Other Users, paragraphs 53 – 55.

SSEN Transmission are currently progressing a £20bn investment across our network area, both onshore and offshore, enabling the connection of the renewable energy needed to meet Scottish and UK Government 2030 energy targets and beyond; providing greater home-grown energy security and supporting Scotland and the UK's pathway to Net Zero. As providers of critical national infrastructure there is also the potential for future projects beyond 2030 to be located within and adjacent to the Ossian Array site, therefore presenting the potential for future interactions in proximity to the boundaries as detailed within the documents shared.

We remain committed to working with other legitimate users of the sea in a proactive manner, enabling all parties to deliver successful projects wherever reasonably possible. We therefore welcome and encourage regular and proactive engagement as the Ossian OWF project progresses, as has already been the case for the EGL3 project. This is especially important where proximity and crossing agreements are to be developed, giving due consideration and provision for present and future cables to cross both export and generation sites, maintaining the freedom of the seas for both telecommunications and power cables. As well as EGL2, EGL3 and EGL4 projects referenced, we would also like to highlight the Offshore Grids project, which is at relatively early stage but engagement has already taken place with the Ossian OWF project team.

Lastly we highlight and suggest the use of our 'Project map' Project Map - SSEN Transmission (ssen-transmission.co.uk) as this will provide the most up to date information regarding any developing SSEN Transmission projects.

I am happy to discuss further the comments above should you have any questions or concerns.

Yours sincerely

Peter Watson

Lead Marine Consents & Environment Manager

Scottish Borders Council

Scottish Borders COUNCIL

Rosanne Dinsdale
Marine Scotland

By email

Please ask for:	*Scott Shearer*
Our Ref:	*24/00858/NECON*
Your Ref:	*00010861*
E-Mail:	*sshearer@scotborders.gov.uk*
Date:	*23.07.2024*

Dear Rosanne,

ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990

MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

Thank you for your consultation request to Scottish Borders Council in respect of the above development. This correspondence represents the response of Scottish Borders Council.

We have considered the merits of the proposed development and note acknowledge that the proposal will make a significant contribution to meeting our national renewable energy targets, in line with the intention of Policy 11 of NPF4. We do not consider that the proposed development would have any significantly adverse impacts on the Scottish Borders, including the Berwickshire Coastline. The proposal may impact on ecological and biodiversity interests, however, given the distance of the Scottish Borders administrative area to the development we consider that other authorities and bodies would be better placed to consider this.

Overall, given the distance of the Ossian Wind Farm to the Scottish Borders we have no comments to raise in response to this proposed development.

I trust that this is of assistance,

Your sincerely,

Scott Shearer
Principal Planning Officer (Local Review and Major Developments)

Scottish Environmental Protection Agency

From:	Planning.North
To:	MD Marine Renewables
Cc:	Rosanne Dinsdale
Subject:	PCS-20002274 SEPA Response to 00010861 & 00010862
Date:	16 July 2024 16:55:13
Attachments:	image.png

Dear Rosanne Dinsdale

Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017
00010861 & 00010862
Construct and Operate The Ossian Offshore Wind Farm
Approximately 80 KM South East of Aberdeen

Thank you for the above consultation. We understand that that this consultation request relates to the proposed section 36 consent and marine licence application for the array area only and not the export cable corridor or onshore elements of the works. Please refer to our standing advice and other guidance which is available on our website. In addition, please also refer to our SEPA standing advice for the Department for Business, Energy and Industrial Strategy and Marine Scotland on marine consultations available here.

I trust these comments are of assistance - please do not hesitate to contact me if you require any further information.

Kind regards
Nicki Dunn
Senior Planning Officer

èifeachdach an t-siostaim a ghlèidheadh agus airson adhbharan laghail eile.

Scottish Fishermen’s Federation

Our Ref: FH-OssianOWF LApp/0024/001

Your Ref: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application
Email dated: 12th July 2024

Scottish Fishermen's Federation
24 Rubislaw Terrace
Aberdeen, AB10 1XE
Scotland UK

T: +44 (0) 1224 646944
E: sff@sff.co.uk

www.sff.co.uk

E-mail: MS.MarineRenewables@gov.scot
12 September 2024

Dear Rosanne Dinsdale/MD-LOT

SFF Response to Ossian OWF Array area License Application

The Scottish Fishermen's Federation (SFF) appreciate the opportunity to make this representation on behalf of the 450 plus fishing vessels in membership of its constituent associations, the Anglo Scottish Fishermen's Association, Fife Fishermen's Association. Fishing Vessel Agents and Owners Association, Mallaig & North West Fishermen's Association, Orkney Fisheries Association, Scottish Pelagic Fishermen's Association, the Scottish White Fish Producer's Association and Shetland Fishermen's Association.

Please take this response as a total and unreserved objection to the planning application for the proposed Ossian offshore wind farm. Given that this would be the largest floating offshore windfarm if consented, it will remove in the region of 880 km2 of fishing opportunities for the fishing industry.

It is proposed that the Ossian offshore windfarm will adopt catenary mooring systems which will in effect close off the entire array to traditional fishing methods. We note in particular that the proposed mitigation measure to be implemented for zero access for fishing is for the developer to join a commercial fisheries working group. This is nothing short of an insult to the fishing industry.

The SFF on this occasion will not highlight any other obvious concerns that are normally part of our responses for offshore planning applications. It is unconscionable that so many traditional fishing opportunities are to be removed in favour of a vast floating offshore wind development - a new and unproven technology - with absolutely no meaningful mitigations for our industry. Further, to date there is no scientific evidence to show that an OWF of this size will not have an impact on the ecosystem and the marine environment. This includes the development impacts on commercial fisheries, spawning and nursery grounds (e.g. ICES advice 2024 bans any disruptive activities on herring grounds). The link for the ICES advice can be accessed here: North Sea herring advice.

SFF also objects to the proposed nature compensation measure "Bycatch Reduction in Portugal" and reiterate that we oppose any nature compensation measures to offset the environmental

damage from offshore wind developments that impose any types of restrictions on commercial fisheries. Once again, it is unconscionable that the fishing industry should be expected to pay the price for the environmental harms of the offshore wind industry.

The SFF stresses that our primary concern is protecting the rights of fishermen to safely, effectively and efficiently undertake their trade, and this is the cornerstone of our response. Our position is that fishing activities should continue unaffected and unharmed post-development. If impacted fishermen are denied the right to earn their living, SFF will not support the proposal of any windfarm developments, therefore I reiterate that we strongly object to this application.

Best regards

Mohammad Fahim Hashimi
Offshore Energy Policy Manager
Scottish Fishermen's Federation

Sports Scotland

From:	Gillian Kyle
To:	MD Marine Renewables
Subject:	Ossian Offshore Wind Farm - sportscotland response
Date:	17 July 2024 12:31:53

Hi Roseanne,
Confirming a nil return on this from **sport**scotland. I gather RYAS have been consulted through the process and have no concerns.
Thanks, Gillian

From: MD.MarineRenewables@gov.scot <MD.MarineRenewables@gov.scot>
Sent: Friday, July 12, 2024 10:23 AM
To: MD.MarineRenewables@gov.scot
Cc: Iain.Macdonald3@gov.scot; Rosanne.Dinsdale@gov.scot
Subject: [EXTERNAL] Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024

Dear Sir/Madam
ELECTRICITY ACT 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
The Electricity (Applications for Consent) Regulations 1990
MARINE AND COASTAL ACCESS ACT 2009
The Marine Works (Environmental Impact Assessment) Regulations 2007
APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.
On 28 June 2024, Ossian Offshore Wind Farm Limited ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate the Ossian Offshore Wind Farm at a site off the coast of Aberdeen. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application. In addition, the Applicant has provided a Report to Inform Appropriate Assessment, HRA Derogation Case and Compensation Plan.
Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from: https://marine.gov.scot/node/23264
There are three application pages, as follows:

- Section 36 Consent – Construction and Operation of Generating Station – Ossian Offshore Wind Farm
- Marine Licence – Construction and Operation of Generating Station – Ossian Offshore Wind Farm – 00010861
- Marine Licence – Transmission Infrastructure – Ossian Offshore Wind Farm - 00010862

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **3 September 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.
Kind regards,

Rosanne
Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot
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*****

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*****

Scottish Water

Thursday, 18 July 2024

Marine Licensing
375 Victoria Road

Aberdeen

Development Operations
The Bridge
Buchanan Gate Business Park
Cumbernauld Road
Stepps
Glasgow
G33 6FB

Development Operations
Freephone Number - 0800 3890379
E-Mail - DevelopmentOperations@scottishwater.co.uk
www.scottishwater.co.uk

Follow Us

Dear Customer,

Ossian Offshore Wind Farm, 80 KM SOUTH EAST OF, ABERDEEN, AB39 2RG
Planning Ref: 23264
Our Ref: DSCAS-0113957-XRV
Proposal: Scoping Report - Ossian Offshore Wind Farm - South-east of Aberdeenshire Coast.

Please quote our reference in all future correspondence

Scottish Water has no objection to this planning application. The applicant should be aware that this does not confirm that the proposed development can currently be serviced.

Please read the following carefully as there may be further action required. Scottish Water would advise the following:

Drinking Water Protected Areas

A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

I trust the above is acceptable however if you require any further information regarding this matter, please contact me on **0800 389 0379** or via the e-mail address below or at planningconsultations@scottishwater.co.uk.

Yours sincerely,

Ruth Kerr
Development Services Analyst
PlanningConsultations@scottishwater.co.uk

Scottish Water Disclaimer:

"It is important to note that the information on any such plan provided on Scottish Water's infrastructure, is for indicative purposes only and its accuracy cannot be relied upon. When the exact location and the nature of the infrastructure on the plan is a material requirement then you should undertake an appropriate site investigation to confirm its actual position in the ground and to determine if it is suitable for its intended purpose. By using the plan you agree that Scottish Water will not be liable for any loss, damage or costs caused by relying upon it or from carrying out any such site investigation."

Supplementary Guidance

- Scottish Water asset plans can be obtained from our appointed asset plan providers:
    - Site Investigation Services (UK) Ltd
    - Tel: 0333 123 1223
    - Email: sw@sisplan.co.uk
    - www.sisplan.co.uk

- Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area, then they should write to the Development Operations department at the above address.

- If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.

- Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.

- The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or a Sustainable Drainage System (SUDS) proposed to vest in Scottish Water is constructed.

- Please find information on how to submit application to Scottish Water at our Customer Portal.

Transport Scotland

From:	Iain Clement
To:	MD Marine Renewables
Cc:	Rosanne Dinsdale; llogan@systra.com; DEVENNY Alan; Andrew Erskine
Subject:	EIA - Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation Response - 3-Sep-24
Date:	03 September 2024 15:29:17
Attachments:	image001.png image002.png image003.png image004.png image005.png

FAO Rosanne Dinsdale

Afternoon Rosanne,

Thank you for the opportunity for Transport Scotland to comment on the documentation submitted in support of the Ossian Offshore Wind Farm.

Transport Scotland was consulted on the Scoping Report (SR) for this application and provided comment in our letter dated 6th April 2023. In this, we noted that Transport Scotland would not envisage any significant impacts on the trunk road network as we would expect the majority of materials for the development to be delivered by sea, as land-based activities were to be dealt with via a separate application. As such, Transport Scotland had no specific comment to make on the Offshore SR, other than to state that the proposed assessment methodology of the potential impact of the development on the road network adjacent to onshore infrastructure will require to be included within the separate Onshore Scoping Report.

Having reviewed the Environmental Impact Assessment Report (EIAR) supporting the Offshore application, we note that it states that separate consents, licenses and permissions for the Onshore (landward of MLWS) infrastructure of Ossian will be required and will be applied for by the Applicant, and that an Onshore EIA Report will support the onshore consent and license applications.

Given the above, we can confirm that Transport Scotland has no comment to make on the Offshore supporting documents and has no objection to the proposed development. We will, however, be pleased to review and comment on the Onshore elements as and when these become available.

Kind regards,

Iain
Development Management
Network Operations
Roads Directorate
transport.gov.scot
Transport Scotland, 2nd Floor, George House, 36 North Hanover St, Glasgow, G1 2AD

Transport Scotland, the national transport agency
Còmhdhail Alba, buidheann nàiseanta na còmhdhail
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From: MD Marine Renewables <MD.MarineRenewables@gov.scot>

Sent: Friday, July 12, 2024 10:23 AM

To: MD Marine Renewables <MD.MarineRenewables@gov.scot>

Cc: Iain Macdonald <Iain.Macdonald3@gov.scot>; Rosanne Dinsdale <Rosanne.Dinsdale@gov.scot>

Subject: Ossian Offshore Wind Farm - Section 36 Consent and Marine Licence Application - Consultation - Response Requested by 3 September 2024

Dear Sir/Madam

ELECTRICITY ACT 1989

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

The Electricity (Applications for Consent) Regulations 1990

MARINE AND COASTAL ACCESS ACT 2009

The Marine Works (Environmental Impact Assessment) Regulations 2007

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL

ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

On 28 June 2024, Ossian Offshore Wind Farm Limited ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate the Ossian Offshore Wind Farm at a site off the coast of Aberdeen. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application. In addition, the Applicant has provided a Report to Inform Appropriate Assessment, HRA Derogation Case and Compensation Plan.

Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from: https://marine.gov.scot/node/23264

There are three application pages, as follows:

- Section 36 Consent – Construction and Operation of Generating Station – Ossian Offshore Wind Farm
- Marine Licence – Construction and Operation of Generating Station – Ossian Offshore Wind Farm – 00010861
- Marine Licence – Transmission Infrastructure – Ossian Offshore Wind Farm - 00010862

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MD.MarineRenewables@gov.scot, no later than **3 September 2024**. If you are unable to meet this deadline please contact the Marine Directorate Licensing Operations Team ("MD-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MD-LOT will assume a 'nil return'.

Kind regards,

Rosanne

Rosanne Dinsdale
Consenting and Licensing Casework Manager – Licensing Operations Team - Marine Directorate
Scottish Government, Victoria Quay, Edinburgh EH6 6QQ
E: rosanne.dinsdale@gov.scot

UK Chamber of Shipping

UK CHAMBER of SHIPPING

MD Marine Renewables
MD.MarineRenewables@gov.scot

30 Park Street
London
SE1 9EQ

rmerrylees@ukchamberofshipping.com
020 7417 2843

3 September 2024

Dear Sir/Madam

THE UK CHAMBER OF SHIPPING RESPONSE TO APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE THE OSSIAN OFFSHORE WIND FARM, APPROXIMATELY 80 KM SOUTH EAST OF ABERDEEN.

Introduction

The UK Chamber of Shipping (hereafter "the Chamber") welcomes the opportunity to provide submission to Scottish Government on the proposed Ossian Offshore Wind Farm.

The Chamber is the trade association for the UK shipping industry and its voice. The Chamber represents more than 200 members, operating in excess of 900 vessels equalling 18 million GT in capacity, trading around the UK and globally. Chamber members operate across the full breadth of the shipping industry, including: containers, dry bulk and tanker trades; passenger transport, comprised of international and domestic cruise & ferry operators, including lifeline services; offshore supply and construction engaged in oil & gas and renewables; towage and specialist operations; along with professional service providers supporting the shipping industry.

The Chamber is a firm advocate for the UK's targets to decarbonise the country and reach net zero by 2050, 2045 in Scotland, a target the Chamber supports the UK Government in pushing the global shipping industry to also adopt. Offshore renewables are becoming a significant source of green energy and will grow considerably, with the Chamber supporting the Government's targets for offshore wind development. The Chamber is furthermore a champion of the vital role the ports and shipping industries play in enabling offshore energy production targets to be achieve, with both industries essential throughout the lifespan of developments across construction, operation & maintenance, and decommissioning phases.

The Chamber's primary concern however is for navigational safety for crew, passenger, cargo, and vessel to be maintained and for the avoidance or minimisation of disruption or economic loss to the shipping and navigation industries with particular regard to approaches to ports and to strategic routes essential to regional, national and international trade, and lifeline ferries.

The Chamber provides comments across a few specific areas as per the following sub-headings.

Navigational Corridor

The MCA, Northern Lighthouse Board (NLB) and Chamber have liaised regarding the Red Line Boundaries and navigation implications for the gap between Ossian and Morven Offshore Wind Farms and provided comment to the applicant in June 2024. As initially presented at Scoping, the two developments through being sited adjacently created a form of navigational channel that appeared to funnel traffic between them. This raised risk concerns and led to discussions regarding widening of the gap to a "safe distance". A variety of differing pieces of guidance were considered on what may constitute a "safe distance", including suggestion of 5nm.

Subsequently, navigational stakeholders had information presented to them by the projects on 2 May 2024, which indicated evidence of alternative routing to both the east and west of the Morven and Ossian projects and relatively low traffic volumes. It was concluded that the existing proposed gap between the Morven and Ossian projects would remain a viable option for through navigation, but that the majority of vessels navigating the area would tend to avoid it. It was recognised that any traffic passing through the gap would do so on the Masters' discretion and the numbers of vessels that may consider this, based on the current activity in the area and expert opinion, would likely be low.

Therefore, MCA were content with the boundaries bordering the gap between Ossian and Morven to remain as they were presented at Scoping. The Chamber is accepting of this position, however, firmly supports the MCA position that this is an exceptional case and neither influences nor set a precedent to other proposed wind farm boundaries in the UK.

Red Line Boundary

Following the consideration and agreement that the majority of commercial traffic will not transit via the gap between Morven & Ossian but either pass inshore to the west of Morven and Ossian OWFs or to the east of Ossian, via the Ossian/Bellrock gap, the outer channels are therefore considered in greater detail.

The Chamber maintains that more searoom is always preferable and would encourage the projects wherever possible to consider this going forward. Whilst the Chamber recognises that the gap between Ossian and Bellrock complies with guidance as per MGN 654 and has not raised significant concern from a navigational risk perspective, there nonetheless will be an efficiency and operational impact to the shipping industry from the shape of the red line boundary of Ossian.

The southern end of the projects where the gap is smallest and the south-eastern 'Heel' of the Ossian project (a reduction of which would open up a more direct through route with Bell Rock) should be of particular focus for reducing commercial impacts to the shipping industry.

Accordingly, recognising that the western boundary of Ossian is not being proposed for amendment, and that efficiencies of the shipping industry could be improved, through a reduced number of turns and reduced deviation. In reference to Figure 6.1 of the NRA "Key Coordinates of the Site Boundary", the Chamber politely suggests that the south-eastern boundary of Ossian be redrawn to present a straight line effectively from Key Coordinate 40 to Key Coordinate 4. This would reduce the number of potential turns for vessel traffic, enhance operational and commercial viability of the routes in the Chamber's opinion.

The Ossian OWF presents a very large area of seabed leased for the purpose of offshore wind development. The development is stated as having an array area of 858km2 with a generating capacity of up to 3.6GW. This provides a relative energy density of the site is 4.2MW per km2, i.e.

3.6 GW / 858 km2. As a comparator, the Round Four sites in English waters, have a minimum requirement of 5MW/km2 as a requirement of their lease.

The Chamber is therefore very clear in its suggestion proposed would in no way impinge upon the developer to be able to obtain the generating capacity for which they are proposing. The Chamber recognises the necessity for large scale deployment of offshore wind to reach net zero however the UK EEZ is finite and through enhanced efficient use of the seabed, we can collectively mitigate against negative impacts upon shipping industry and set aside more sea-room for other activities, including commercial navigation, along with the potential for more build out of offshore wind in later rounds.

Project Specification

The Chamber is firmly supportive of at least two lines of orientation and suggestions that a single line of orientation (SLOO) may become the final layout is of concern. MGN 654 states that should a developer wish to propose a SLOO then a safety justification needs to be presented to MCA for approval. The language as per paragraph 57 of the NRA suggest simply discussion with MCA post consent is sufficient. This is incorrect in the Chamber's perspective.

The Chamber is supportive of Tension Leg Platform (TLP) foundations to a greater degree than semi-submersible floating foundations due to the narrow anchor spread and reduction in potential interference with navigation and fishing industries.

When dynamic inter-array cabling is used introducing a buoyancy module and lazy "s" bend system, the Chamber would like to see an agreed minimum Under Keel Clearance that permits safe vessel transit over the top in all conditions. The Chamber is unaware that such a commitment has been made yet.

Whilst recognised as indicative worst case layout, the Chamber considers it unsuitable and introducing of unnecessary risk to have Offshore Substation Platforms (OSPs) on the external boundary. Any likelihood of allision will be greater on the external WTGs or OSPs and given the potential higher consequence for allision with a OSP it should be avoided.

Allision and Collision Risk Modelling

Section 15 of the NRA presents Allision and Collision Risk Modelling for the site in isolation, however the Chamber has not seen such detailed analysis for the site in cumulative scenario and recommends such analysis be requested.

For example, Figure 15.5 shows Powered Vessel Allision Risk per Structure (Base Case), yet there is no equivalent presented for the development also with the existence of the planned Morven and Bellrock OWFs. Whilst the Chamber recognises there is qualitative analysis of cumulative risks, aspects are not presented, which may not present a wholly complete or accurate picture for the assessment of risk.

Conclusion

The Chamber thanks Scottish Government for the opportunity to respond and would be happy to provide additional detail or explanation should it be warranted.

Yours faithfully,

Redacted

Robert Merrylees
Policy Manager (Safety & Nautical) & Analyst
UK Chamber of Shipping

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0207 417 2843