



Bowdun Offshore Wind Farm, Offshore EIA Report

Volume 3, Technical Appendix 4.3: Scoping
Opinion - Appendix I: Consultation
Responses & Advice

TWP-BOW-MDL-OFS-LET-00002 | April 2026



Scoping Consultation Responses

Aberdeen Airport

FAO Abby Gray
Marine Directorate
Scottish Government

Via Email

ABZ Ref: ABZ3279

23rd September 2024

Dear Abby

**Thistle Wind Partners Limited (TWP) - Bowdun Offshore Windfarm - ScotWind E3 Site,
38km off Aberdeenshire Coast**

I refer to your request for scoping opinion received in this office on 11th September 2024.

The scoping report submitted has been examined from an aerodrome safeguarding perspective and we would make the following observations:

- The proposed site is located within the wind farm and instrument flight procedure (IFP) consultation zones for Aberdeen Airport and as such aviation impacts should be considered as part of the EIA.
- The proposed turbines will likely be detected by Aberdeen Airport's primary surveillance radars and generate clutter on air traffic control displays. Radar mitigation is highly likely to be required.
- Detailed assessment of impact on IFP will be required. The developer should note that mitigation any impact identified may not be possible, in which case an aerodrome safeguarding objection may be maintained. We would encourage the developer to engage with Aberdeen Airport on this matter as soon as possible.

Our position with regard to this proposal will only be confirmed once the turbine details are finalized and we have been consulted on a full planning application. At that time we will carry out a full safeguarding impact assessment and will consider our position in light of, inter alia, operation impact and cumulative effects.

Yours Sincerely

[Redacted]

Kirsteen MacDonald
Safeguarding Manager
Aberdeen Airport
[Redacted]

abzsafeguard@aiairport.com



Aberdeen City Council

From: EPConsultations <EPConsultations@aberdeencity.gov.uk>
Sent: 14 October 2024 15:57
To: MD Marine Renewables
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024

Categories:
Objective:

Good afternoon,

Thank you for getting in contact with Aberdeen City Council. I confirm we have no response in relation to the proposal.

Regards

Richard Brough | - Senior Environmental Planner
Protecting the irreplaceable. Promoting the sustainable

Aberdeen City Council | Climate and Environment Policy | Strategic Place Planning | Commissioning
Ground Floor North | Marischal College | Broad Street | Aberdeen | AB10 1AB

Direct Dial: 01224 067912 Mobile: [Redacted] | Switchboard: 01224 523 470
www.aberdeencity.gov.uk | Twitter: @AberdeenCC | Facebook.com/AberdeenCC

Aberdeenshire Council

Our Ref: ENQ/2024/1361

Your Ref:

Ask for: Fiona Rendall

Tel: 01467 533088

Email:

Thistle Wind Partners
Capital Building
12-13 St Andrew Square
Edinburgh
EH2 2AF

24 October 2024

Dear Sir/Madam

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended by The Environmental Impact Assessment (Miscellaneous Amendments) (Scotland)
The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)
The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2007 (as amended)

Consultation on scoping request for the erection of offshore windfarm and associated infrastructure for Bowdun Offshore Windfarm.

- 1.1 I refer to your consultation in respect of a Scoping Request for the above proposal received on 12 September 2024. Your request sought advice relating to the content of a future environmental assessment and an Offshore Scoping Report (TWP-BOW-RPS-OFS-RPT-00004) has been provided for consideration.
- 1.2 Aberdeenshire Council, as a terrestrial authority, is generally only concerned with potential effects upon the intertidal zone between mean high-water springs (MHWS) and mean low water springs (MLWS) with offshore infrastructure projects like this.
- 1.3 The offshore infrastructure includes offshore generation and transmission assets detailed within Section 3.4 of the Offshore Scoping Report. The turbines are located approximately 38km from shore at the closest point. In regard to the landfall for the project, it is understood that infrastructure is to make landfall at Benholm and is to be assessed under the separate onshore scoping request currently under consideration by Aberdeenshire Council (ENQ/2024/1337).
- 1.4 As such within this Offshore Scoping request, the Planning Service are limited to comments relating to Seascape, landscape and visual impacts; Natural Heritage; and Archaeology only. Consultation has been undertaken with the Council's Archaeology and Natural Heritage teams.

Natural Heritage

- 1.5 Chapter 12 Offshore Ornithology contains the approach and scope for the ornithological interests for the offshore aspects of the project.
- 1.6 Consultation with the Council's Natural Heritage team has raised comment in relation to the potential impact on the Benholm to Todhead Point Local Nature Conservation Site which extends to 2km offshore and should incorporate those features of the site which feed in or otherwise use the offshore area. The impact on this area which is of regional importance should be considered in order to minimise any disturbance or damage to this zone in any landfall and cabling work.
- 1.7 It is noted that the wide intertidal zone between Gourdon and Johnshaven is a valuable area of importance to intertidal wetland birds (waders, ducks and gulls in particular). There have been some quite high counts here of various species and in hard weather it can be a well-used refuge. The wide breadth of the intertidal zone here is unusual in the context of North-East Scotland. Further information on this site is available from NESBReC nesbrec@aberdeenshire.gov.uk

Seascape, Landscape and Visual Impact Assessment

- 1.8 Chapter 20 contains the approach and scope of the Seascape, Landscape and Visual Impact Assessment (SLVIA) for the offshore aspects of the project. The Planning Service agrees with the proposed study area, baseline conditions and overall approach. The proposed viewpoints set out in Table 20.2, within the Aberdeenshire Council administrative boundary, are agreed.

Archaeology and Cultural Heritage

- 1.9 Chapter 19 Marine Archaeology contains the approach and scope for marine archaeology receptors of relevance to the proposed development.
- 1.10 Consultation with the Council's Archaeology team agree with the embedded mitigation outlined in Section 19.6; agree with the impacts scoped into the assessment (Table 19.4); and agree with the proposed assessment methodology outlined in section 19.8.

Conclusion

- 1.11 Having reviewed the submitted documentation the Planning Service generally agrees with the proposed scope of the EIA in relation to those aspects which may impact upon the Aberdeenshire Council Area. Any issues or comments to be considered further are provided above.
- 1.12 Comments have been provided in respect of impacts upon receptors within the Aberdeenshire Council Area alone. However, past experience would suggest that development of this nature may also impact upon more distant receptors, such as designated sites in other authorities. Consideration should be given to engaging with

appropriate consultees to ensure that these are adequately considered within the scoping exercise.

1.12 I hope the above information is of assistance within the context of the Planning Service as a consultee. Further consultation is welcome at the appropriate time during pre-application discussions or the application stage.

1.13 If you wish to discuss the content of this consultation response, please use contact details at the top of this letter.

Yours faithfully

[Redacted]

Paul Macari
Head of Planning and Economy

Angus Council

From: Stephanie G Porter
Sent: 17 September 2024 15:49
To: MD Marine Renewables
Cc: Marc MacFarlane; Kirsten Watson; Judith Horrill; Abby Gray
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024 ref: 24/00471/PREAPP

Categories:
Objective:

Dear Sir/Madam

**REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017
REGULATION 13 AND SCHEDULE 4 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2007
REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017
(collectively referred to as the “EIA Regulations”).**

Thistle Wind Partners Limited (TWP) - Bowdun Offshore Windfarm - ScotWind E3 Site, 38km off Aberdeenshire Coast

I write in relation the above consultation.

Having reviewed the submitted scoping report, Angus Council note that the proposed offshore turbines would have a maximum blade tip height of around 370m above Lowest Astronomical Tide. It is noted that the proposal is of a similar in height to the turbines (no greater than 390m) forming part of the incipient nearby Morven OWT and Ossian developments.

Angus Council is generally satisfied with the scope of the EIA set out in the scoping report, subject to cognisance of comments provided by statutory consultees such as NatureScot.

While Angus Council recognises the distance of the proposal from land will likely reduce any seascape, landscape and visual impacts associated with the development, the potential maximum blade tip height of roughly 370m may still lead to impacts and therefore Angus Council welcome the provision of wireframe/photomontage/visualisations to help illustrate such impacts. Upon review of the submitted documentation it doesn't appear as though any viewpoints have been identified within Angus. Although outwith the extent of the submitted 60km ZTV, Angus Council would encourage the provision of a viewpoint from the Angus shoreline (near Ethie Haven or Dunninald Castle). This is consistent with the feedback provided in relation to the Morven OWT scoping request. Angus Council also request that cumulative seascape, landscape and visual impacts be clearly illustrated in such wireframe/photomontage/visualisations.

Notwithstanding the comments provided in this response Angus Council would like to retain the right to request further information in connection with any consultation request received at application stage if necessary, and where there may be impacts upon Angus.

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)

Covid: As restrictions ease, the emphasis will continue to be on personal responsibility, good practice and informed judgement. [Get the latest information on Coronavirus in Scotland.](#)

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BT

From: radionetworkprotection@bt.com
Sent: 16 September 2024 11:56
To: MD Marine Renewables
Subject: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024. WID13566

Categories:
Objective:

OUR REF:- WID13566

Good afternoon

Thank you for your email dated 11/09/2024

We have studied the proposed windfarm development with respect to EMC and related problems to BT point-to-point microwave radio links.
The conclusion is that the Project indicated should not cause interference to BT's current and presently planned radio network.

Kind Regards
Chris

Department of Agriculture,
Environment and Rural
Affairs

From: DAERA Marine Information Requests <Marine.InfoRequests@daera-ni.gov.uk>
Sent: 11 October 2024 15:26
To: MD Marine Renewables
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024

Categories:
Objective:

Hi
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
Contact: | Tel: (028) 90 569262 | DD: 69262.



Sustainability at the heart of a living, working, active landscape valued by everyone.

Fisheries Management Scotland



T: +44 (0)131 221 6567

E: general@fms.scot

By e-mail
md.marinerenewables@gov.scot

30 September 2024

Bowdun Offshore Wind Farm - ScotWind E3 Site

Dear Sir/Madam

Fisheries Management Scotland is the representative body for Scotland's District Salmon Fishery Boards, the River Tweed Commission and charitable Rivers and Fisheries Trusts. Our members work to conserve Scotland's valuable and iconic wild salmon and freshwater fish and fisheries and the aquatic environment on which they depend.

Offshore renewable energy has an important role to play if the Scottish Government are to meet their commitment for Scotland to reach net-zero emissions of all greenhouse gases by 2045. However, there remain a number of outstanding questions and concerns about the potential negative effects on diadromous fish, including Atlantic salmon and sea trout.

District Salmon Fishery Boards have a statutory duty to protect and improve salmon and sea trout fisheries. In assessing marine renewable energy developments (wind, wave or tidal), it is important that DSFBs and Fisheries Trusts, can be assured that all potential negative impacts have been assessed in full, and mitigations put in place. Where uncertainty remains, the developer should be required to contribute to research which will help fill these evidence gaps, as a condition of their operational consent. In addition, and in the light of the nature crisis, we believe that all developers should contribute to projects designed to conserve and restore important habitat at a catchment scale.

Across Scotland, wild salmon populations are in crisis, and face a range of pressures, some of which are under human control. The Scottish Government have published a [wild salmon strategy](#) and [implementation plan](#), which sets out the actions to be taken over a five year period to 2028. The implementation plan includes a number of actions under the heading of "understanding and mitigating pressures in the marine and coastal environment".

Where salmon populations are below their conservation limits, any additional pressure, including from marine renewables, cannot be considered sustainable. Scottish salmon rivers are categorised by the Scottish Government under The Conservation of Salmon (Scotland) Regulations 2016, according to the likelihood of them meeting their conservation limits. The most recent river gradings have been [published for 2024](#). There are now 112 rivers across Scotland graded as Category 3, meaning there is a less than 60% probability of meeting their conservation limit.

It is now well-recognised that populations of Atlantic salmon have rapidly deteriorated across their native range. In the latest species reassessment by the [IUCN Red List](#) of Threatened Species, released in December 2023, Atlantic salmon have been reclassified from 'Least Concern' to 'Endangered' in Great Britain (as a result of a 30-50% decline in British populations since 2006 and 50-80% projected between 2010-2025), and from 'Least Concern' to 'Near Threatened' in terms of global populations (as a result of global populations declines of 23% since 2006).

We note, and support, the recent position that the Marine Directorate have taken - "*MSS do not consider it appropriate for an EIA/HRA to conclude there is no or negligible impact just because no evidence exists of the impact. MSS advise that impacts to diadromous fish must be adequately investigated, rather than relying on a lack of evidence to claim there is no impact*".

There are 17 Special Areas of Conservation for which Atlantic salmon are either a primary reason for designation or a qualifying feature. For sea lamprey, there are six SAC sites and for river lamprey, there are six SAC sites. For freshwater pearl mussel, there are 19 SAC sites.

We consider that the SAC rivers identified in the Scoping report are appropriate from a Scottish perspective, but thought should be given to including SAC rivers from the east coast of England.

Whilst there is often a focus on rivers designated as Special Areas of Conservation (SACs), it is important to recognise that the drivers behind declines in wild salmon and sea trout, and other species of migratory fish, affect **all** rivers to a greater or lesser extent. In recognition that the marine phases of both Atlantic salmon and sea trout are included on the list of Priority Marine Features - the habitats and species of *greatest conservation importance* in inshore waters – we consider that **all** relevant rivers should be fully considered in the consenting and assessment process.

Under Scottish Marine Energy Research (ScotMER), the [Diadromous Fish Receptor Group](#) has identified evidence gaps related to the health, distribution, and impacts on Diadromous fish (salmon, sea trout, etc.). Scottish Government has published an 'evidence map' (available for download at the above link) which identifies and scores these evidence gaps according to a specific prioritisation process. It is important that each of these evidence gaps is considered in full by the applicant, and developers should *contribute* to filling these evidence gaps as a **specific condition of consent**.

In order to properly assess Environmental Statements for developments, information on the use of the development area by diadromous fish should be provided. If such information is lacking then a suitable monitoring strategy should be devised, either for the site in question or through contributing to strategic projects undertaken through ScotMER. Any monitoring strategies must include pre-construction monitoring in order that baseline information on movement, abundance, swimming depth, feeding behaviour etc. can be collected.

Offshore renewable developments have the potential to directly and indirectly impact diadromous fish. We would therefore expect developers to assess and, where necessary, mitigate the potential impacts of deployed devices on such fish during the deployment, operation and decommissioning phases. These potential impacts have been highlighted through ScotMER, and include:

- Avoidance (including exclusion from particular rivers and subsequent impacts on local populations);
- Disorientation effects that could potentially affect behaviour, susceptibility to predation or by-catch; and
- Impaired ability to locate normal feeding grounds or river of origin; and delayed migration

Fisheries Management Scotland request that, in addition to the evidence gaps identified by ScotMER, the EIA considers the effects of predator aggregation (e.g. large gadoids/ grey seals) around the proposed development on migrating salmonids at both the smolt and adult stages and, additionally, physical barrier

effects on salmon during construction and operation (e.g. noise, shadow flicker). In this regard, it should be noted that NatureScot has formally conceded that shadow flicker from moving turbine blades (and also the direct visual effects of moving blades) may adversely affect salmonids in freshwater habitat. Since exactly the same physical principles apply in the marine environment, surface-orientated fish like salmonids are likely to be exposed to equivalent adverse effects.

Conclusion

It should be emphasised that we have no wish to prevent or delay any proposed development unnecessarily and we remain keen to work constructively with the developers and Marine Scotland to identify appropriate monitoring programmes which will allow us to be able to assess the acknowledged risks of this development, and other proposed developments in a more appropriate manner. There is a clear and urgent need to fund, plan and start strategic research on the movement, abundance, swimming depth, feeding behaviour and impact pathways relevant to diadromous fish. Such research would clearly feed into the potential mitigation measures that might be deemed appropriate, and the conditions under which such mitigation should be enacted. Developers should be required to work together to fund strategic monitoring, in order to allow more certainty for all involved.

The scale of proposed offshore developments and other technical approaches to marine renewables development represents a step-change in the exposure of marine animals of high cultural and economic significance to attendant risks. As highlighted above, understanding of many of these risks is insufficient to support proposals for mitigation even at this late stage when substantial developments are being submitted for licensing. The cumulative impact of this proposal alongside those developments already submitted or likely to follow in the near future is potentially even greater. We believe that more needs to be done to ensure that the best scientific talent is made available to find practicable ways to address the unresolved uncertainties. Fisheries Management Scotland would welcome an opportunity to constructively engage with any such process.

Yours faithfully,

[Redacted]

Alan Wells

CEO, Fisheries Management Scotland

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: 300070595
Your ref: SCOP-0056

17 October 2024

Dear Marine Directorate

The Marine Works (Environmental Impact Assessment) (Scotland)
Regulations 2017, Regulation 14
The Marine Works (Environmental Impact Assessment) (Scotland)
Regulations 2007, Regulation 13 and Schedule 4
The Electricity Works (Environmental Impact Assessment) (Scotland)
Regulations 2017, Regulation 12
(Collectively referred to as the “EIA Regulations”)
**Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off
Aberdeenshire Coast
(Scoping Report)**

Thank you for consulting us on this Environmental Impact Assessment (EIA) scoping report, which we received on 11 September 2024. We have reviewed the details 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.

The relevant local authority archaeological and cultural heritage advisors will also be able to offer advice on the scope of the cultural heritage assessment. This may include topics covered by [our advice-giving role](#), and also other topics such as unscheduled archaeology, category B and C listed buildings, and conservation areas.

Proposed development

We understand that the proposed development comprises:

Historic Environment Scotland – Longmore House, Salisbury Place, Edinburgh, EH9 1SH

Scottish Charity No. **SC045925**

VAT No. **GB 221 8680 15**



Offshore Generation Assets:

- up to 67 Wind Turbines of 369.36 maximum blade tip height from Lowest Astronomical Tide and associated supporting structures which may be fixed or floating foundations including mooring and anchoring systems;
- a network of up to 156 km of Inter-Array Cables (IACs) which may be either static or dynamic cables depending on the Wind Turbine foundations used;
- up to 35 km of Interconnector Cables;
- Subsea Collectors, used to connect Wind Turbines in clusters to Offshore Substation Platforms (OSPs); and
- scour and cable protection.

Offshore Transmission Assets:

- up to three OSPs with fixed foundations and supporting infrastructure including scour protection;
- up to four Offshore Export Cables totalling approximately 320 km in length; and
- cable protection and utility crossings where required

We note that the onshore elements of the proposed development, which includes the Onshore Transmission Assets above Mean Low Water Springs, is the subject of a separate Onshore Scoping Report.

We note that the Offshore Scoping Report and the subsequent Offshore EIA Report for the proposed development intend to follow the practice of the Project Design Envelope approach (also known as the 'Rochdale Envelope'), to develop maximum design scenarios and allow the likely impacts of the proposal to be assessed according to the maximum design parameters.

Our Advice

We welcome the production of both Cultural Heritage and Marine Archaeology chapters within the Scoping Report and note that this application covers the offshore elements of the proposed development.

We are generally content with the proposed approach to assessing impacts on our historic environment interests, as set out in the scoping report.

Our advice on the nature of any likely impacts on our historic environment interests, and any potential mitigation measures, are included in an annex to this covering letter. This also includes our requirements for information to be included in the EIA Report.

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](#).



HISTORIC
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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 Urszula Szupszynska at

Yours sincerely

Historic Environment Scotland



ANNEX

Marine archaeology

We note that while there are no Historic Marine Protected Areas within the Marine Archaeology Study Area, there are 13 identified wrecks or possible wreck sites either within the development boundary or within 2km of it. These assets are all listed in the scoping report (Table 19.3). Direct physical impacts should be avoided, including where wreckage is dispersed and where the asset is located in a route corridor.

As noted in section 19.5.9, it is possible that the Protection of Military Remains Act 1986 could be relevant to some of these wrecks, so it is particularly important that physical impacts are avoided.

We note that impacts on the marine archaeological baseline will be scoped into the assessment and we are content with the study areas defined for marine archaeology, and with the baseline data sources listed in the Scoping Report.

We welcome the proposals outlined in (section 19.8.2) to use project-specific survey outputs to enhance the understanding of marine archaeology within the study area. Any such survey work should be undertaken in a manner that facilitates its archaeological analysis and use.

We are content that the potential impacts on marine archaeology and cultural heritage have been identified adequately within the Scoping Report. We are content with the proposals outlined in (section 19.6.1) to use embedded mitigation strategies to manage and mitigate impacts on the marine archaeology. We support the use of the proposal to create appropriately sized Archaeological Exclusion Zones around marine archaeological assets. We are also content with the proposals for development of a marine archaeological Written Scheme of Investigation (WSI) and a Protocol for Archaeological Discoveries (PAD), and welcome that these documents are to be developed as part of the EIA reporting process and updated post-consent (section 19.8.1).

Terrestrial cultural heritage assets

We are content with the list of heritage assets proposed to be scoped into the assessment (Table 21.3).

There are a large number of designated assets located within 60km of the development boundary. The applicant sets out that it would be disproportionate to include all of the assets for assessment, which we agree with. However, we would expect a forthcoming EIA report to justify why some of the assets that fall within the ZTV have been scoped out of the assessment.

Historic Environment Scotland
17 October 2024

Hywind

From: [Reinier Zoutenbier](#)
To: [MD Marine Renewables](#)
Cc: [Andy Edgar](#); [Polly Haslam](#); [William Munn](#); [Maria Pagla](#)
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024
Date: 12 September 2024 14:12:54
Attachments: [image001.png](#)

Good afternoon

On behalf of the Hywind Scotland project, please see our response below.

The Hywind Scotland project has no comments on the Scoping Report at this stage. We would however request to be kept informed of further developments and have the opportunity to comment in future.

Kind Regards
Reinier

Reinier Zoutenbier
Principal Consents Project Management and Control
Equinor

[Redacted]
rzou@equinor.com
equinor.com

Joint Nature Conservation Committee

From: JNCC Offshore Industries Advice <OIA@jncc.gov.uk>
Sent: 11 September 2024 16:54
To: MD Marine Renewables; JNCC Offshore Industries Advice
Cc: Marc MacFarlane; Kirsten Watson; Judith Horrill; Abby Gray
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024

Categories:
Objective:

Good Afternoon,

Thank you for consulting JNCC on the Bowdun Offshore Wind Farm, which we received on 11/09/2024. JNCC's role in relation to offshore renewables in Scottish waters has been delegated to NatureScot. NatureScot is now authorised to exercise the JNCC's functions as a statutory consultee in respect of certain applications for offshore renewable energy installations in inshore and offshore waters (0-200nm) adjacent to Scotland. Therefore, NatureScot should provide a full response. NatureScot will contact JNCC if any input is required.

As such JNCC have not reviewed this document and will not be providing further comment.

Kind regards,

Jon Connon

Offshore Industries Advice Officer

Marine Management Team

JNCC, Inverdee House, Baxter Street, Aberdeen, AB11 9QA

Tel: 01224 083522

Working pattern: Monday to Friday

[Website](#) [Twitter](#) [Facebook](#) [LinkedIn](#)

 **JNCC Together for Nature**

We are inclusive, collaborative, innovative

Joint Radio Company

From: JRC Windfarm Coordinations Old <windfarms@jrc.co.uk>
Sent: 10 October 2024 09:28
To: MD Marine Renewables
Cc: Abby Gray; Wind SSE
Subject: Bowdun Offshore Wind Farm - Scoping Consultation [WF694299]

Dear scottish,

A Windfarms Team member has replied to your co-ordination request, reference **WF694299** 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 Abby

Planning Ref: SCOP-0056

Name/Location: Bowdun Offshore Windfarm

Max Number of Turbines: 67

OLA / Development Boundary Points at NGR:

- 1 450237 789415
- 2 441200 779035
- 3 438537 791001
- 4 436648 796828
- 5 434691 793127
- 6 433971 784319
- 7 433169 790249
- 8 432840 780537
- 9 431033 785543

Max Hub Height (above LAT): 206.36m

Max Blade Length: 163m

This proposal is **cleared - subject to 50m Micrositing** - 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.

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, developers are advised to seek re-coordination prior to considering any design changes.

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 maintain your personal contact details and are compliant with the Data Protection Act 2018 (DPA 2018) for the purpose of 'Legitimate Interest' for communication with you. If you would like to be removed, please contact

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?id=34090>

Kincardine Offshore Wind Farm

From: [Catrin Fowden](#)
To: [MD Marine Renewables](#)
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024
Date: 14 October 2024 15:26:30
Attachments: [image001.png](#)

Nil response

Marine Directorate - Science,
Evidence, Data and Digital (9
October 2024)



E: MD-SEDD-RE_Advice@gov.scot

Abby Gray
Marine Directorate Licensing Operations Team
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

09 OCTOBER 2024

BOWDUN OFFSHORE WIND FARM

Marine Directorate advisers have reviewed the request from MD-LOT and provide the following advice.

Commercial fisheries

MD-SEDD are content that all potential fisheries impacts have been identified and scoped in.

MD-SEDD note that cable protection may be required in both the export cable corridor and the offshore array area. The fishing industry have raised concerns over the use of concrete mattresses in open areas of seabed and therefore MD-SEDD advise that the use of concrete mattresses be the last choice for cable protection and other methods such as rock placement are utilised first where possible. MD-SEDD also recommend that the rock protection follows the industry best practice guidance of using graded rocks and berms designed with 1:3 gradients to minimise gear snagging.

MD-SEDD advise that applicants should include AIS data provided by EMODNet which gives the amount of time spent by fishing vessels in a location. These can be found via emodnet.ec.europa.eu under “vessel density”. These provide a better indication of fishing intensity than the AIS route density data presented in the scoping report, as they weight the



movement of a vessel through a grid square with how long the vessel has stayed in that square and how much of the square it has covered. The route density data presented in the scoping report is also useful for visualising transiting routes for assessing impacts to steaming routes.

MD-SEDD note that the Scotmap data from 2014 have been mentioned as a data source and advise that these data should not be relied upon to provide information on the commercial fisheries baseline for the inshore fleet as they are out of date. MD-SEDD advise that this dataset should be used only to validate information gathered through consultation with local fishers and stakeholders. The heat maps for <12m vessels (2017-2021) available on NMPi are a more up to date source of spatial activity, and MD-SEDD note these have also been utilised.

When using VMS datasets from the MMO to produce spatial maps of fishing activity, MD-SEDD recommend that the data are used to present figures showing both average VMS value and also fishing effort (kW per hour). Areas of high value may not necessarily equate to areas of high effort so it is advised to visualise the fishing activity using both indices. This will provide further information about the commercial fisheries baseline and help in the assessment of possible displacement of fishing effort.

MD-SEDD advise that the cumulative effects assessment should take into account any nearby Marine Protected Areas and other fisheries management areas with restricted fishing activity as potential projects that could cause cumulative effects for commercial fisheries.

MD-SEDD advise undertaking a fisheries displacement assessment within the EIA and referring to the 'Good practice guidance for assessing fisheries displacement by other licensed marine activities' (Xodus, 2022) for further information on how to do this.

Physical environment / coastal processes

The MD-SEDD oceanography adviser has reviewed Chapter 7 (Physical Process) of the Bowdun Offshore Wind Farm (OWF) offshore Environmental Impact Assessment (EIA) scoping report, mainly focusing on tidal and water column processes.

MD-SEDD agree with the impacts scoped into the proposed development assessment for physical processes, and the development phases indicated (Table 7.2). Many of the potential impacts are associated with sediment transport, and the scoping report proposes the use of

standard modelling tools for the assessment. MD-SEDD consider this approach to be adequate for the proposed development.

The proposed wind farm is in a region of shelf sea that is likely to experience intermittent seasonal stratification, and the potential changes to water column structure including magnitude, timing and extent of seasonal stratification should be considered in the EIA. MD-SEDD note this impact is scoped into the operational development phase and that the scoping report proposes the use of hydrodynamic modelling to conduct an assessment on stratification. MD-SEDD advise that the hydrodynamic model used needs to resolve the vertical water column, e.g. using a 3D or 1D-vertical model.

Water column structure is controlled by competing processes including atmospheric heating, freshwater input and mixing. An offshore wind farm 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. There is potential for both these effects to be important cumulatively, when considering multiple OWFs in a region, and this should be considered with the EIA.

MD-SEDD advise that the baseline description should include a description of prevailing baseline water column conditions, including the timing of stratification and frontal positions. This should include the evolution of water column structure through the year (e.g. weekly to monthly temperature, salinity, density profiles) and when typically the region stratifies, and how key parameters change through the year (e.g. surface mixed layer depth and potential energy anomaly).

For baseline characterisation MD-SEDD advise the use of existing 3D ocean model output, e.g. data available from the Copernicus Marine Service or the Scottish Shelf Waters Reanalysis Service (SSW-RS, <https://tinyurl.com/SSW-Reanalysis>), and observational data, to characterise the water column structure within the region throughout the year, paying particular attention to the onset/decay of seasonal stratification and fronts. The timing, extent and magnitude of stratification is naturally variable, and this variability should be described to enable the potential changes due to the wind farm to be assessed against this backdrop.

MD-SEDD recommend the EIA investigates whether the potential change in mixing could delay the onset of stratification and what pathways to impact this could have on biological receptors, including primary production and the wider ecosystem. The potential impact of the structures (e.g. Dorrell et al. 2022) and the potential wind-wake impact (e.g. Christiansen et al. 2023) should be assessed, and compared with one-another.

MD-SEDD recognise there is no clear methodology or guidance available on how to assess the impact of wind farm structures or wind deficit on stratification. This could be achieved using a 3D ocean model (e.g. Christiansen et al. 2023), but MD-SEDD recognise that this could be computationally expensive. The use of a 1D vertical model, such as the General Ocean Turbulence Model (GOTM), could be a pragmatic way to model the potential impact of the wind farm structures on mixing. A 1D vertical model would require boundary conditions, and these could be supplied from existing 3D hydrodynamic model data (temperature, salinity, velocities), or potentially from any other hydrodynamic model being used as part of the EIA. An alternative approach is to investigate how turbine structures could change Turbulent Kinetic Energy (TKE) (e.g. Carpenter et al. 2016) and comparing this with background/baseline TKE values. The potential impact of these changes in TKE on the timing of stratification should be included, and whether fronts are likely to be effected.

MD-SEDD recognise there is no pragmatic method, or modelling guidance, available for modelling the potential impact of the wind wake, and therefore suggest that a qualitative assessment be performed using published research findings, e.g. Christiansen et al. (2022).

MD-SEDD advise that changes to mixing have the potential to impact other receptors, such as productivity as well as higher trophic levels, and following the assessment of modelling outlined above, this should also be qualitatively assessed in the EIA. MD-SEDD advise the potential impact on ncMPAs where fronts are a designated feature should be included.

References

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Yours sincerely,

Renewables and Ecology Team

Marine Directorate – Science, Evidence, Data and Digital

Marine Directorate - Science,
Evidence, Data and Digital (25
October 2024)

Bowdun Offshore Wind Farm

Marine Analytical Unit (“MAU”) Response **Marine Directorate**

The Bowdun Offshore Wind Farm Development scoping report includes descriptions of a range of potential impacts. This response focuses only on the assessment of social and economic impacts.

We recommend that a full Socio-Economic Impact Assessment be carried out. We provide general advice on how to deliver this in Annex 1.

1. Overview

1.1. Study areas

We noted that Aberdeen City and Aberdeenshire have been identified as a local study area for tourism. We noted that the economic effects will be assessed at the level of the Scottish and UK economies.

With regards to other socio-economic impacts (demographic changes, housing, etc), although at this stage port location and supply chain hubs have not been defined, the assessment of socio-economic impacts would benefit from the inclusions of a short list of potential epicentres of impact. This can help to define the affected communities, and aid stakeholder engagement and research with local communities.

We note that to overcome the difficulty of identifying potential local study areas, it is suggested in para 18.2.7. to discuss hypothetical areas of impact and undertake analysis using a range of port location scenarios, such as those in rural and urban location. We welcome this suggestion, as it might provide information on the nature and scale of impacts that might affect communities. Scenario mapping, however, should not be viewed as a replacement of primary research with stakeholders, including local communities.

1.2. Consultation, stakeholder engagement, and primary data collection

We noted consultation conducted to date with statutory consultees and the intention to organise public consultation with regards to the project’s onshore and offshore infrastructure (mentioned in section 5.4, page 85).

In addition to this, primary social research is planned through the SOWEC and CES project to assess socio-cultural impacts (mentioned in Table 18.4, page 411). The MAU welcomes developer collaboration for the assessment of socio-economic impacts. The MAU would like to note that it is the responsibility of developers to ensure that the SEIA includes the results of such analyses, as the MAU will not support signposting to participation in the project as sufficient for the assessment.

Academic research (e.g. Aitken et al 2016; Devine-Wright 2011; Firestone et al 2012; Howell 2018; Jijelava and Vanclay 2028; Langbroek and Vanclay 2012; Vanclay 2020) shows that it is important to involve local communities in social impact assessments and address any concerns communities might have. This decreases the delivery risks for projects. Following this research, we believe that the engagement of stakeholders (including local communities) is very important for the assessment of socio-economic impacts, as these communities might be directly impacted by the development. As described in the Annex 1, we recommend conducting a stakeholder mapping exercise to identify all potential stakeholders who might be affected by the development. These stakeholders need to be engaged for identification and assessment of potential impacts (e.g. creation of a working group with local community councils where magnitude and sensitivity of socio-economic impacts is discussed).

It is important not only to inform members of the general public about the development but also gather their views of how they might be affected (primary data collection). Please note that this approach is important not only for the assessment of socio-cultural impacts, but also other social and economic impacts (e.g. communities' views on potential impacts on employment, housing, local services). We recommend that potential socio-economic impacts are discussed with members of the general public and their assessment is fed into the report.

We believe that engagement and research with communities is proportionate to large infrastructure projects, such as offshore wind farms. Moreover, there are examples¹ of how social research has been implemented in practice by some OWFs.

We encourage the developer to engage trained social researchers with experience in qualitative methods to conduct research and primary data collection with communities to ensure that the social science research methods are designed and executed correctly so that the engagement is delivered in as ethical and meaningful way as possible.

1.3. Data sources

Please use the most up-to-date data sources.

2. Scoping of impacts

2.1. Social impacts

We disagree with scoping out of socio-cultural impacts during the decommissioning phase (mentioned in Table 18.4, page 412). It is important to consider how decommissioning might create a range of impacts, including socio-cultural effects.

2.2. Economic impacts

¹ [Environmental Impact Assessment Report - Volume 1 - West of Orkney Windfarm - West of Hoy, Orkney | Marine Scotland Information](#)

We broadly agree with the proposed approach for assessing economic impacts, in particular that the assessment will include direct, indirect and induced impacts for all phases of the project. We recommend that the assessment takes into account deadweight, leakage, displacement and substitution, and that sensitivity analysis will be performed to account for risk, uncertainty and optimism bias. Please refer to our guidance shown in Annex 1 for further information.

The scoping report outlines that employment impacts will be assessed at each phase of the project in terms of years of employment and jobs. If it is possible to supply additional information about the types of jobs that are expected to be created (e.g. part-time, full-time, skilled, unskilled etc) and how these compare to the existing jobs in the study area, this will add further depth to the analysis.

We expect to see a detailed description of the methodology used to assess economic impacts in the assessment, including specific details about the methodological approach taken and any key assumptions that underpin any estimates. This may be supplied in a technical annex if necessary.

3. Conclusions

We broadly agree with the proposed approach for assessing economic and social impacts. However, we disagree with the scoping out of socio-cultural impacts during the decommissioning phase. We would like to encourage the developer to conduct more engagement and social research with local communities. We recommend that you employ a social researcher with qualitative research expertise to collect primary data from communities to understand their responses to potential socio-economic changes resulting from the development.

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Annex 1: General Advice for Socio-Economic Impact Assessment

Marine Analytical Unit (MAU)

Marine Directorate

December 2023

This document sets out some suggestions for delivering socio-economic impact assessment drawing on the professional expertise of the Marine Analytical Unit (MAU), Marine Directorate.

Section 1. Some general best practice tips

- Take a proportionate approach to SEIA in line with the size and generating capacity of the development
- Consider offshore and onshore components of the development in the same assessment.
- Employ experts to design and carry out the assessment. The relevant expertise would include:
 - Social research and economist training, qualifications and experience
 - Familiarity and experience with appropriate methods for each discipline (including economic appraisal, social research methods such as surveys, sampling, interviews, focus groups and participatory methods)
- Consider potential secondary socio-economic impacts of any changes that affect the other relevant receptor groups covered in the wider EIA e.g. commercial fisheries, cultural heritage and archaeology and visual impacts.
- Include consideration of the cumulative impact of multiple offshore developments.
- Outline the rationale for scoping out impacts that are deemed to be minimal, including any evidence or analysis that has been used. If this is not provided it can be difficult for MAU to understand why impacts have been scoped out and we may suggest scoping them back in.

Section 2. Key components of a Socio-economic Impact Assessment

We set out below what we consider to be the key steps to an assessment. We recommend a combined approach so that social and economic impacts are covered together in the assessment, whilst acknowledging that different methodologies for social and economic impacts assessment are needed at certain stages, and that the two disciplines are distinct.

We wish to highlight the importance of stakeholder engagement throughout the assessment, and the use of social research methods (see Methods Toolkit referenced at the end of this Annex) to gather primary data and first hand perspectives from particular groups and communities that are affected. These are helpful in order to better understand the nature and degree of impacts that might be caused by changes that are expected occur. A change in itself may or may not bring about tangible impact, impacts may vary for different people or be perceived in different ways, are affected by individual values and attitudes, and conditioned by the context.

Stakeholder engagement and data collection can occur at a number of stages in the SEIA process and may involve similar methodologies but there are important differences to note. The primary aims of stakeholder engagement are to inform, consult or involve key stakeholders, and to communicate information and gather feedback. Data collection, in contrast is a more rigorous analytical process involving:

- Setting out a planned methodology in advance with clear objectives of what you wish to achieve through data collection
- Sampling strategies that take account of the demographic variations in the population and the need to include difficult to reach groups
- Robust methods to collect information from people in a neutral and unbiased way
- Awareness of how data will be analysed and reported on to obtain and disseminate robust conclusions
- Taking account of research ethics including informed consent, and data protection requirements under GDPR

The stages below are divided into the activities that we suggest are **before** the developer submits a request for a scoping opinion and those that are done **after** the scoping phase. We recommend an iterative approach which means that steps inform each other, information is built up over time, and some steps may be repeated or done in a different order.

The key steps should include:

Pre-scoping activities

- 1) Getting started:** Employ economist and social research experts and work with them to develop a plan for the SEIA that sets out data requirements, and the proposed social and economic data collection and impact assessment methodologies, timescales, any data protection considerations, risk assessment and ethical issues that might arise from the work.
- 2) Develop a detailed description** of the planned development and consider the project phases where socio-economic impacts might be experienced (covering development, construction, operation and maintenance and decommissioning phases). Start to map out potential socio-economic impacts and initial consideration of areas of impact on land that will need to be covered.
- 3) Initial scoping of impacts:** develop a broad list of potential impacts informed by experts (including social researcher, economist, local representatives from key groups, community stakeholders and others).
- 4) Define potential impact areas on land** taking into account locations and connections between activities. Different types of impacts may be experienced at different geographic levels, some in the area nearest the landfall or the nearest coastline to the development at sea, and others much further away (at Scotland level, UK level and internationally). The geographical scale at which social impacts are experienced may be different for social impacts compared with economic impacts. There may be multiple epicentres from which impacts radiate

including the site of the development, land-based areas such as landfall and grid connections, construction bases and places from which the development is visible. Activities that take place in the sea are also relevant for defining the impact area on land, for example the location of fishing activity and ports where fish are landed. The definition of the impact area will inform which communities and which sectors are included in the assessment and vice versa, so this exercise needs to be done iteratively with step 3, the initial scoping of impacts.

- 5) **Stakeholder mapping** is required to identify all the people, groups and stakeholders who may be affected by the development and is a first step in order to conduct effective stakeholder engagement. This exercise is informed by the definition of the impact area. A broad approach is recommended. Stakeholders are likely to include local communities, businesses, workers, other users of the sea, interest groups, community councils and so on.

Steps 4 and 5 may lead to a change in the list of potential impacts so this will need refined/checked.

- 6) **Stakeholder engagement (with those affected by the development, sea users, communities etc)** is a key requirement of SEIA that is done at different stages of the process. We recommend doing some initial stakeholder engagement before submitting the scoping report. Stakeholder engagement will fulfil a number of requirements:

- **Provide information about the development** so that those who might be affected are able to make an informed judgement about potential impacts
- **Present and refine list of potential impacts based on feedback** - identify impacts that are most relevant and add any additional ones that are identified
- **Collect initial data/ insights from stakeholders** on what potential socio-economic impacts (to be developed later)
- **Build relationships** with the community and key groups affected for later stages of the SEIA process so that they can understand the decisions making process and how they can influence it.

There are many **participatory methodologies** that can be used for effective stakeholder engagement that provide a deliberative space for community discussions.

This stage may also require the setting up of governance structures and a community liaison officer. **Early engagement** with those who might be affected is very important, as is meaningful and inclusive engagement where people feel that they are being listened to and that their feedback will be acted upon. It is important to set out clearly how stakeholder engagement is being done for the SEIA specifically.

- 7) **Gather contextual information** to develop a social and economic profile of the area prior to the development that will help with setting the baseline and impact

prediction, identifying potential industries and communities that might be affected and sources of data that can be used in the assessment. This might include primary data collection using social research methods (such as surveys, interviews, focus groups) as well as desk based analysis (of existing data sets such as fishing data, population data).

Primary data collection may occur alongside participatory activities (e.g. engagement events) but must be done in a rigorous and systematic fashion and the findings should be robustly analysed and incorporated into the SEIA. Impacts that are identified for the other receptors in the wider EIA may also have socio-economic consequences and so it may be important to include these in the SEIA.

8) Produce list of anticipated impacts to be covered in the scoping report

setting out the range of potential impacts that could occur, building on what has already been done using data and insights that have been collected from various activities described above. Details of the methods that have been used should be included to enable Marine Directorate to determine if the analysis is based on a robust and appropriate approach. Justification should be provided for any impacts that are scoped in or out. This could be based on suggestions made by stakeholders and the public during stakeholder engagement or an assessment based on the analysis of primary and secondary data.

It is helpful if the scoping report includes details on the approach to be used for the SEIA including methods for data collection, planned stakeholder engagement activities and data-sets to be used.

Post scoping activities for the SEIA

The scoping opinion will advise on the final list of socio-economic impacts to be assessed in the SEIA. This may require additional data collection/ social research to enable a more rigorous assessment of a narrower set of anticipated impacts. It may also require further stakeholder engagement in order to check the significance of impacts with different groups, and the acceptability of mitigation options.

The data and information that has been collected throughout the scoping phase will be used to conduct steps 9, 10 and 11 below.

9) Conduct baseline analysis to assess the situation in the absence of the development, to provide a point of comparison against which to predict and monitor change. Appropriate social and economic measures should be used for the baseline and cover relevant issues (see section 4 for suggested data sources). Key stakeholders and other interested parties including affected communities and sectors may be aware of baseline data to be included, and this can be explored in the participatory approaches described above. The findings from social research can also be included in the baseline. Note that baseline data can be presented in the scoping report but is also the first stage of the SEIA and so should be included in the SEIA report.

10) Predict impacts and assess their significance (otherwise known as impact appraisal or options appraisal): Through analysis, estimate the social and economic changes and their expected impacts, considering any alternative development options and how significant the impacts might be. This is the core part of the assessment and forms the main part of the assessment report. Different methodologies and both primary and secondary data inform this part of the exercise.

Different phases of the development should be covered (development, construction, operation and maintenance) and also transitions between phases (if relevant).

The knock on socio-economic consequences of impacts in other parts of the EIA assessment should be assessed here, such as the impact on commercial fisheries, and impacts on related industries such as tourism could also be included.

It is important to consider distribution of impacts among different social groups (covering protected quality characteristics, socio-economic groups and geographic area where relevant to do so).

Economic impact appraisal should include consideration of:

- Direct, indirect and induced impacts
- Leakage, displacement and substitution effects
- Deadweight
- Cumulative impacts
- Sensitivity analysis to account for risk, uncertainty and optimism bias

There are a range of methodologies for calculating direct, indirect and induced impacts. These include the appropriate use of multipliers, a local content methodology, stakeholder involvement and expert opinion.

Modelling approaches should be realistic, based on robust data, and avoid over promising the economic impacts.

All prices should be presented in real terms (excluding inflation) and should state which year the prices represent.

11) Development enhancement, mitigation strategy and complete SEIA report.

There may be an opportunity for adaptation or other approaches to mitigate potentially adverse impacts and to maximise positive opportunities. This may include engagement with the community to develop a strategy for enhancing benefits and mitigating against impacts; or development of a Community Benefit Agreement (CBA). Again these activities should be done collaboratively with stakeholders where relevant and appropriate.

The SEIA report should clearly set out the methods used in the assessment, justification for decision made such as scoping certain impacts in or out of the

assessment, and the approach to analysis. The report should cover the baseline analysis and results of the impact prediction or appraisal, and distributional impacts. Social and economic impacts can be set out separately (where this makes sense) and together where they overlap.

It is good practice for the report to be reviewed by the people (i.e. the wider group of stakeholders and communities) who were involved in providing data for its production.

Section 3. Examples of different types of socio-economic impacts

In the literature social and economic impacts are defined in many different ways. Sometimes social and economic impacts are covered separately, whilst other sources refer to socio-economic impacts.

The following table sets out some commonly identified socio-economic impacts.

Examples of Socio-economic Impacts from Glasson 2017²

1. Direct economic:

- GVA
- employment, including employment generation and safeguarding of existing employment;
- characteristics of employment (e.g. skill group);
- labour supply and training; and
- other labour market effects, including wage levels and commuting patterns.

2. Indirect/induced/wider economic/expenditure:

- employees' retail expenditure (induced);
- linked supply chain to main development (indirect);
- labour market pressures;
- wider multiplier effects;
- effects on existing commercial activities (eg tourism; fisheries);
- effects on development potential of area; and

3. Demographic:

- changes in population size; temporary and permanent;
- changes in other population characteristics (e.g. family size, income levels, socio-economic groups); and
- settlement patterns

4. Housing:

- various housing tenure types;

² Glasson J (2017a) "Socio-economic impacts 2: Overview and economic impacts" in Therivel R and Wood G (eds.), *Methods of Environmental and Social Impact Assessment*, Abingdon: Routledge

- public and private;
- house prices and rent / accommodation costs;
- homelessness and other housing problems; and
- personal and property rights, displacement and resettlement

5. Other local services:

- public and private sector;
- educational services;
- health services; social support;
- others (e.g. police, fire, recreation, transport); and
- local authority finances

6. Socio-cultural:

- lifestyles/quality of life;
- gender issues; family structure;
- social problems (e.g. crime, ill-health, deprivation);
- human rights;
- community stress and conflict; integration, cohesion and alienation; and
- community character or image

7. Distributional effects:

Distributional analysis is a term used to describe the assessment of the impact of interventions on different groups in society. Interventions may have different effects on individuals according to their characteristics such as income level or geographical location

- effects on specific groups in society (eg: by virtue of gender, age, religion, language, ethnicity and location); environmental justice

Section 4: Useful Data Sources for Socio-Economic Impact Assessments

Name	Summary	Link to Source
Statistics.gov.scot	Contains a wide range of data by local authority and other geographic breakdowns. Has a search by subject and area option.	statistics.gov.scot
Marine Economic Statistics	Annual economic statistics publication including GVA and employment data for marine economy sectors.	Marine economic statistics - gov.scot (www.gov.scot)

Scottish Sea Fisheries Statistics	Provides data on the tonnage and value of all landings of sea fish and shellfish by Scottish vessels, all landings into Scotland, the rest of the UK and abroad, and the size and structure of the Scottish fishing fleet and employment on Scottish vessels.	Sea fisheries statistics - gov.scot (www.gov.scot)
Scottish Shellfish Farm Production Survey	Statistics on employment, production and value of shellfish from Scottish shellfish farms.	Scottish shellfish farm production surveys - gov.scot (www.gov.scot)
Scottish Annual Business Statistics	Scottish Annual Business Statistics (SABS) presents estimates of employment, turnover, purchases, Gross Value Added and labour costs. Data are provided for businesses that operate in Scotland. Data are classified according to the industry sector, location and ownership of the business.	Business and innovation statistics - gov.scot (www.gov.scot)
Sub-Scotland Economic Statistics Database	The Sub-Scotland Economic Statistics Database provides economic, business, labour market and population data for Scotland, and areas within Scotland.	Sub-Scotland Economic Statistics Database - gov.scot (www.gov.scot)
Nomis Official Labour Market Statistics	Labour market statistics including data on employment, unemployment, qualifications, earnings etc.	Nomis - Official Labour Market Statistics (nomisweb.co.uk)
Economics of the UK Fishing Fleet 2022	Economic estimates at UK, home nation and fleet segment level for the UK fishing fleet. The estimates are calculated based on samples of fishing costs and earnings gathered by Seafish as part of the 2022 Annual Fleet Economic Survey.	Economics of the Fishing Fleet 2022 — Seafish

Scotland's Census, National Records of Scotland	Census data that provides information about the characteristics of people and households in the country.	Home Scotland's Census (scotlandscensus.gov.uk)
Scottish Index of Multiple Deprivation	Collection of documents relating to the Scottish Index of Multiple Deprivation - a tool for identifying areas with relatively high levels of deprivation.	Scottish Index of Multiple Deprivation 2020 - gov.scot (www.gov.scot)
National Records of Scotland mid-year population data	Population estimates on an annual basis for Scotland and its constituent NHS Board and council areas.	Mid-Year Population Estimates National Records of Scotland (nrscotland.gov.uk)
The Green Book	HM Treasury guidance on how to appraise and evaluation policies, projects and programmes.	The Green Book: appraisal and evaluation in central government - GOV.UK (www.gov.uk)
The Magenta Book	HM Treasury guidance on evaluation. Chapter 4 provides specific guidance on data collection, data access and data linking.	The Magenta Book - GOV.UK (www.gov.uk)
Enabling a Natural Capital Approach (ENCA)	Supplementary guidance to The Green Book. ENCA resources include data, guidance and tools to help understand natural capital and know how to take it into account.	Enabling a Natural Capital Approach (ENCA) - GOV.UK (www.gov.uk)

Section 5: Further sources of guidance:

HM Treasury guidance on how to appraise and evaluate policies, projects and programmes: [The Green Book: appraisal and evaluation in central government](https://www.gov.uk)

Best practice in Social Impact Assessment according to the International Association for Impact Assessment: [Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects](https://www.iaia.org)

The project A two way Conversation with the People of Scotland on the Social Impacts of Offshore Renewables (CORR/5536) has developed elements of a conceptual framework on social values that can be used to support and inform existing processes for assessing the potential social impacts of offshore renewables plans: [Offshore renewables - social impact: two way conversation with the people of Scotland](https://www.gov.uk)

Best practice guidance for assessing the socio-economic impacts of OWF developments: [Guidance on assessing the socio-economic impacts of offshore wind farms \(OWFs\)](#)

[A toolkit of methods available to assist developers, consultants, and researchers carrying out socio-economic impact assessments: Methods Toolkit for Participatory Engagement and Social Research - gov.scot \(www.gov.scot\)](#)

Maritime and Coastguard Agency



Maritime &
Coastguard
Agency

Vaughan Jackson
Maritime and Coastguard Agency
UK Technical Services - Navigation
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SO15 1EG

Abby Gray
Marine Directorate – Licensing Operations Team
Marine Licencing and Consenting
Scottish Government
Marine Laboratory
Aberdeen
AB11 9DB

www.gov.uk/mca

Your Ref: SCOP-0056

Date: 16th September 2024

Via email: MD.MarineRenewables@gov.scot

Dear Abby,

REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 AND MARINE LICENCE APPLICATIONS FROM THISTLE WIND PARTNERS LIMITED (TWP) FOR THE BOWDUN OFFSHORE WIND FARM (SCOTWIND E3 SITE) UNDER THE EIA REGULATIONS.

The MCA has reviewed the scoping report provided by TWP for the Bowdun Offshore Wind Farm Limited as detailed in your correspondence of 11th September 2024 and would like to comment as follows:

The Environmental Impact Report should supply detail on the possible impact on navigational issues for both commercial and recreational craft, specifically:

- Collision Risk.
- Navigational Safety.
- Visual intrusion and noise.
- Risk Management and Emergency response.
- Marking and lighting of site and information to mariners.
- Effect on small craft navigational and communication equipment.
- The risk to drifting recreational craft in adverse weather or tidal conditions.
- The likely squeeze of small craft into the routes of larger commercial vessels.

The development area carries a moderate amount of traffic with several important commercial shipping routes to/from UK ports and the North Sea. Attention needs to be paid to routing, particularly in heavy weather so that vessels can continue to make safe passage without large-scale deviations. The likely cumulative and in combination effects on shipping routes should be considered for this project. It should consider the proximity to other windfarm developments, other infrastructure, and the impact on safe navigable sea room.

A Navigational Risk Assessment will need to be submitted in accordance with MGN 654. This NRA should be accompanied by a detailed MGN 654 Checklist which can be found at <https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping>

A vessel traffic survey to the standard of MGN 654 – at least 28 days which is to include seasonal data (two x 14-day surveys) collected from a vessel-based survey using AIS, radar and visual observations to capture all vessels navigating in the study area will need to be carried out. We note the data used to inform the initial traffic assessment is EMODNet data. We are content with the data presented in the scoping report (as summarised in table 14.1 and presented in figure 14.3) to inform traffic volumes/routes/types at this stage. We remind the applicant that the MGN 654 compliant data will need to be presented going forward.

We note in section 4.7 that a Cumulative Effects Assessment will be carried out in a tiered system of appraisal as detailed in paragraph 4.7.7. As highlighted, the proximity to other offshore windfarms and infrastructure will need to be fully considered, with an appropriate assessment of the distances between OREI boundaries and shipping routes as per MGN 654. Attention must be paid to the traffic for ensuring the established shipping routes within the North Sea can continue safely without unacceptable deviations.

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. If cable protection measures are required e.g., rock bags or concrete mattresses, the MCA would be willing to accept a 5% reduction in surrounding depths referenced to Chart Datum. This will be particularly relevant where depths are decreasing towards shore and potential impacts on navigable water increase, such as at the HDD location. It is noted that a Cable Burial Risk Assessment (CBRA) and Cable Plan (CaP) have been included in the embedded mitigations as summarised in Table A1.1.

TWP have stated that the foundation type, be it fixed or floating is yet to be fully explored. In paragraphs 14.3.2, 14.5.3 and Appendix A table A1.1, compliance with Regulatory Expectations on Moorings for Floating Wind and Marine Devices (HSE and MCA, 2017) is identified as a designed in mitigation measure for floating infrastructure if used. This guidance should be followed, and a Third-Party Verification of mooring arrangements will be required.

We note in Section 3.9.1 that: *‘Due to the early stage of the Proposed Development, details on the assembly and the need for possible wet storage of infrastructure is not known at this stage. There is, however, potential that wet storage may be needed to facilitate construction of the Proposed Development, by the Applicant, or ports and / or technology providers.’* We would like to point out to the applicant that any wet storage solutions should be discussed in consultation with relevant maritime stakeholders including the MCA and Northern Lighthouse Board (NLB). We would also expect the Navigation Risk Assessment to be updated to include the proposals for any wet storage once they are known.

Regarding the wet storing of moorings, anchors and inter array cables within the array area and the potential use of Subsea Collectors (paragraph 3.5.42) as the charted depths in the array range from approximately 55m-75m (Table 3.1), 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.

The Development Specification and Layout Plan (DSLPL) referred to in 14.5.3 and Appendix A, table A1.1, number 25, requires MCA approval prior to construction to minimise the risks to surface vessels, including rescue boats, and Search and Rescue aircraft operating within the site. Any additional navigation safety and/or Search and Rescue requirements, as per MGN 654 Annex 5, will be agreed at the approval stage.

Particular consideration will need to be given to the implications of the site size and location on SAR resources and Emergency Response Co-operation Plans (ERCoP). The report must recognise 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)). A SAR checklist will also need to be completed in consultation with MCA, as per MGN 654 Annex 5 SAR requirements.

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.

As stated in Chapter 3: Project Description, paragraph 3.6.2 of the report, High Voltage Alternating Current (HVAC) transmission infrastructure is to be used. Therefore, a pre-construction compass deviation study will not be required.

On the understanding that the Shipping and Navigation aspects are undertaken in accordance with MGN 654 and its annexes, along with a completed MGN checklist, MCA is likely to be content with the approach.

Yours faithfully,

[Redacted]

Vaughan Jackson
Offshore Renewables Project Lead
UK Technical Services Navigation

Ministry of Defence



Defence Infrastructure Organisation

Defence Infrastructure Organisation
Safeguarding Department
St George's House
Defence Infrastructure Organisation Head Office
DMS Whittington
Lichfield
Staffordshire
WS14 9PY

Your Reference: SCOP-0056

Tel: [Redacted]

Our Reference: DIO10064270

Email: Teena.oulaghan100@mod.gov.uk

Marine Directorate
Scottish Government
Marine Laboratory
Aberdeen
AB11 9DB

25 October 2024

By email only

Dear Ms Gray,

REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017.

REGULATION 13 AND SCHEDULE 4 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2007.

REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017 (collectively referred to as the "EIA Regulations").

Thank you for consulting the Ministry of Defence (MOD) on the above Scoping Opinion request in respect of the Bowdun Offshore wind farm development. The consultation was received by this office on 11 September 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, technical sites or maritime defence assets and interests.

The applicant has submitted an Offshore Scoping Report, with reference number TWP-BOW-RPS-OFS-RPT-00004/FINAL dated 21 August 2024, which sets out an indicative description of both the form and location of the proposed development. The proposed wind farm would be located approximately 38km off the east of the Aberdeenshire Coast. The development would comprise an array with an area of up to 187km² which would contain a maximum of 67 wind turbine generators (WTGs), each of which would have a maximum blade tip height of 369.36 metres above Lowest Astronomical Tide (LAT), up to three offshore substation platforms (OSPs), inter-array cables linking WTG's to OSP's, and a maximum of four export cables which would make landfall at Benholm, Aberdeenshire.

The Offshore Scoping Report has been drafted to support a request for a Formal Scoping Opinion from Scottish Ministers and, along with describing the proposed development and its context, seeks to identify the potential impacts of the construction, operation and decommissioning of the Bowdun Offshore Wind Farm.

Military Aviation.

Impact on military activity has been in Chapter 15 Aviation and Radar of the submitted Offshore Scoping Report. Within chapter 15 it is identified that the development would:

- be likely to be detected by an Air Defence radar deployed at Remote Radar Head Buchan,
- introduce/form a physical obstruction to low flying aircraft, and
- fall within the lateral boundaries of Danger Area D613A.

Air Defence (AD) radar.

Wind turbines have been shown to have detrimental effects on the operation of AD radar. These include the desensitisation of the radar in the vicinity of wind turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the locality 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 manage aircraft in United Kingdom sovereign airspace, thereby preventing it from effectively performing its primary function of Air Defence of the United Kingdom.

Paragraph 15.4.7 identifies that the development would be visible to/detectable by AD radar deployed at Remote Radar Head (RRH) Buchan. Following assessment, the MOD agrees with this conclusion.

Military Low Flying Training.

At paragraph 15.4.8 it is identified that the construction, operation, and decommissioning of a wind farm would introduce a physical obstruction to aviation which could limit or otherwise affect military low flying training that may be conducted in this area.

The MOD would normally stipulate that this impact is mitigated through the application of conditions/requirements that require the submission, approval, and implementation of an Aviation Lighting Scheme, and the submission of sufficient data to ensure that the development is accurately charted.

Military Practice and Exercise Areas and Danger Areas.

The submitted Offshore Scoping Report identifies at paragraph 15.4.12 that both the proposed array area and the cable route would be located wholly or partially within the boundaries of Danger Area D613A. This danger area provides space for military air combat training, high energy manoeuvres, and the use of munitions. As identified in paragraph 15.4.12, this danger area exists in three-dimensional space between an altitude of 10,000ft and 55,000ft. At this stage it is not anticipated that the development would have any significant impact on any Military Practice and Exercise Area or Danger Area.

Unexploded Ordnance (UXO).

The potential for unexploded ordnance (UXO) to be present within the development area is identified at paragraph 3.7.1 of the Offshore Scoping Report. The potential presence of UXO and disposal sites should be a consideration during the installation and decommissioning of turbines, cables, and any other infrastructure, or where other intrusive works are necessary.

I trust this is clear however should you have any questions please do not hesitate to contact me.

Yours sincerely, -

[Redacted]

Teena Oulaghan
Safeguarding Manager

NATS

From: NATS Safeguarding <NATSSafeguarding@nats.co.uk>
Sent: 01 October 2024 15:02
To: MD Marine Renewables
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024 [SG38098]

Our Ref: SG38098

Dear Sir/ Madam

We refer to the application above. The proposed development has been examined by our technical safeguarding teams. In the timeframe given to us we have been unable to thoroughly investigate the effects of the proposed development on our Operations, however, the relevant teams are being consulted.

Based on our preliminary technical findings, the proposed development does conflict with our safeguarding criteria. Accordingly, NATS (En Route) plc [objects to the proposal](#). We will notify you within 4-6 weeks of the results of our operational assessment. Only if this assessment shows the impact to be acceptable will we be able to withdraw our objection.

We would like to take this opportunity to draw your attention to the legal obligation of local authorities to consult NATS before granting planning permission for a wind farm. The obligation to consult arises in respect of certain applications that would affect a technical site operated by or on behalf of NATS (such sites being identified by safeguarding plans that are issued to local planning authorities).

In the event that any recommendations made by NATS are not accepted, local authorities are further obliged to notify both NATS and the Civil Aviation Authority ("CAA") of that fact (which may lead to the decision made being subject to review whether by the CAA referring the matter for further scrutiny or by appropriate action being taken in the courts).

As this further notification is intended to allow the CAA sufficient time to consider whether further scrutiny is required, we understand that the notification should be provided prior to any granting of permission. You should be aware that a failure to consult NATS, or to take into account NATS's comments when deciding whether to approve a planning application, could cause serious safety risks for air traffic.

If you have any queries regarding this matter you can contact us using the details as below.

Yours faithfully

NATS

NATS Safeguarding

E: natssafeguarding@nats.co.uk

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk

NATS Internal

Natural England

Date: 11 October 2024
Our ref: 487494
Your ref: Scop-0056



Lancaster House
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Newcastle-upon-Tyne
NE4 7YH

T 0300 060 3900

Marine Scotland
Scottish Government
Atlantic Quay
Glasgow
G2 8LU

BY EMAIL ONLY

Dear Abby

Environmental Impact Assessment Scoping

REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017

REGULATION 13 AND SCHEDULE 4 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2007

REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017 (collectively referred to as the "EIA Regulations").

Thistle Wind Partners Limited (TWP) - Bowdun Offshore Windfarm - ScotWind E3 Site

Location: 38km off Aberdeenshire Coast

Thank you for seeking our advice on the scope of the Environmental Impact Assessment (EIA) in your consultation which we received on 11 September 2024.

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). As the application is located in Scottish waters then the advice from NatureScot, the statutory nature conservation body in Scotland should be sought.

Natural England considers that all matters in which we have an interest in English waters have been considered in the EIA. We have no further comments on Fish and Shellfish ecology.

For the Bowdun Offshore windfarm, Natural England advise that as a minimum, Flamborough and Filey Coast SPA and Farne Islands SPA, are scoped in to the environmental statement. This is due to the windfarm being within the foraging range of these colonies. We further advise that the Berwickshire and North Northumberland Coast SAC is scoped in to the Environmental Statement and HRA due to the designated seal population.

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

Bethan Rogers
Northumbria Area Marine Team, Natural England
E-mail:

NatureScot

Abby Gray
Marine Licensing Casework Officer
Marine Directorate – Licensing Operations Team
Scottish Government – Marine Laboratory
Aberdeen
AB11 9DB

18 October 2024

Our ref: CNS / REN / OSWF / E3 –
Bowdun – Pre-application

By email only: MD.MarineRenewables@gov.scot

Dear Abby,

Bowdun Offshore Wind Farm – ScotWind E3

NatureScot advice on the Environmental Impact Assessment (EIA) Scoping Report

Thank you for consulting NatureScot on the EIA Scoping Report for the proposed Bowdun Offshore Wind Farm array area and Export Cable Corridor (ECC).

Our advice on the natural heritage interests to be addressed within the Environmental Impact Assessment Report (EIA Report) is outlined below. Please note that the advice contained in this letter is in relation to the offshore components (seawards of MHWS) only.

Policy context

We are currently facing two crises, that of climate change and biodiversity loss and as the Scottish Government's adviser on nature, our work seeks to inspire, enthuse and influence others to manage our natural resources sustainably. We recognise that this proposed development is a lease awarded through the ScotWind process in an area identified through the Sectoral Marine Plan process for Offshore Wind.

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 enhancement and restoration of biodiversity.

Proposed development

The proposed Bowdun Offshore Wind Farm is sited approximately 38km offshore, to the east of Aberdeenshire, covering a seabed area of approximately 187km².

The proposed development uses a Project Design Envelope (PDE) approach¹ and comprises of:

- Up to 67 wind turbine generators (WTGs) using either floating or fixed foundations.
- WTG capacity is unstated, but the total capacity is estimated to be approximately 1 GW.
- For floating foundations, the preferred option is a semi-submersible design. Anchoring systems considered include drag embedment, suction piles, driven piles, drilled piles, suction embedded plate anchors, vertical loading anchors, or gravity blocks. Mooring lines considered include semi-taut and catenary.
- Three types of fixed foundations are under consideration, these include monopile foundations, piled and/or drilled jackets foundations and suction bucket jacket foundations.
- A maximum blade tip height of 369.36m (above Lowest Astronomical Tide, LAT) and a maximum rotor blade diameter of 326m.
- Inter-array cabling, with a total length of 156km and a target burial depth of 1-3m. Dynamic inter-array cabling may be required where floating foundations are used.
- Up to three interconnector cables, with a maximum total length of 35 km.
- Up to three Offshore Substation Platforms (OSPs) with fixed (pile jacket) foundations.
- Between 16 and 20 Subsea Collectors (SCs) with a height of 6m from the seabed, may be used to connect WTGs in clusters to OSPs.
- Up to four Offshore Export Cables with a total cable length of 320 km, 6km wide trench and a target cable burial depth between 1–3m.
- Cable protection to include concrete mattresses, rock placement, grout or rock bags, rock berms, or protective sleeves or tubes. Utility crossings may also be required.
- Landfall located at Benholm, Aberdeenshire.
- Cables installed at landfall using open trenching installation or trenchless techniques (e.g. Horizontal Directional Drilling (HDD), pipe-jacking or micro-tunnelling).

Content of the EIA Scoping Report

We are generally content with the format of the EIA Scoping Report, which is well laid out and easy to navigate.

The proposed PDE is broad and is likely to be refined throughout the EIA process. We recommend that, during the pre-application period, as the PDE is refined and further survey data becomes available discussion is sought to ensure that data sources, sites / qualifying features, impact pathways and assessment processes are fit for purpose.

Assessment approach

The EIA Report should consider the impact of all phases of the proposed development on the receiving environment, including effects from pre-construction activities as well as the construction, operation and maintenance and decommissioning phases. We recommend that the following aspects are considered further and included in the EIA Report.

¹ <https://www.gov.scot/publications/guidance-applicants-using-design-envelope-applications-under-section-36-electricity-act-1989/>

Baseline characterisation

We recommend submission of the baseline characterisation Digital Aerial Survey (DAS) report during the pre-application stage rather than waiting until the application. This will enable any issues to be discussed and resolved in a timely manner.

Ecosystem assessment

Increasingly, there is a need to understand potential impacts holistically at a wider ecosystem scale in addition to the standard set of discrete individual receptor assessments. This assessment should focus on potential impacts across predator prey interactions. This will enable a better understanding of the consequences (positive or negative) of any potential changes in prey distribution and abundance from the proposed development on bird and mammal (and other top predator) interests and what influence this may have on population level impacts.

Climate change and carbon costs

The impact of climate change effects should be considered, both in futureproofing the project design and how certain climate stressors may work in combination with potential effects from the proposed wind farm. The EIA Report should also consider the carbon cost of the wind farm (including supply chain) and to what extent this is offset through the production of green energy. We recognise that some aspects of this are addressed in Section 22 (Climate Change).

Blue carbon

In addition to the climate change assessments outlined in Section 22 of the EIA Scoping Report, we recommend that consideration is given to impacts on blue carbon and whether an assessment can be undertaken. This should expand on the information and assessment conducted for benthic ecology to focus on the potential impacts of the proposed development on marine sediments and coastal habitats.

Wet storage

Section 3.9 indicates that there may be a need for wet storage. However, this is not discussed in receptor-specific sections of the EIA Scoping Report and specific requirements and potential wet storage locations are not provided.

Wet storage could represent a significant impact, therefore consideration of the potential impacts on all receptors needs to be addressed, including cumulative impacts. However, it is unclear whether this should form part of the EIA Report for this application or should be considered as an aspect related to the relevant port and harbour expansion considerations. We are aware that Marine Directorate are currently considering consenting routes and processes around the activities associated with both the construction and maintenance phases and requirements to assemble, maintain and store components away from the array area. We would welcome further discussion on this when further details are available, to help inform our advice going forward.

Mitigation

We welcome the identification of “embedded mitigation measures” described as outlined in each of the relevant receptor-specific sections of the EIA Scoping Report and summarised in Appendix A: Draft Schedule of Mitigation and Commitments.

However, much of the embedded mitigation detailed throughout includes the development of and adherence to post-consent plans/programmes. Plans do not strictly constitute mitigation – it is the measures contained within the plan that will mitigate impacts. The EIA Report must clearly articulate

those mitigation measures that are informed by the EIA (or HRA) and are necessary to avoid or reduce predicted significant adverse environmental effects of the proposed development. We advise that the full range of mitigation and monitoring measures, and published guidance, are considered and discussed in the EIA Report.

Cumulative impact assessment

Section 4.7 of the Scoping Report outlines the proposed approach to cumulative effects assessment.

Paragraph 4.7.9 indicates that where likely significant effects for the proposed development alone are assessed as negligible, these will not be considered within the cumulative effects assessment. However, as discussed in the Bowdun Scoping Workshop (held 25 April 2024) and raised in our post Scoping Workshop advice (dated 04 July 2024), we advise that project alone impacts could be deemed negligible, but when combined with others, the overall magnitude could be greater and therefore result in a cumulative effect. As such, further consideration should be given to negligible project alone impacts in the cumulative effects assessment. We recognise that some aspects of this are discussed in receptor-specific chapters of the EIA Scoping Report and provide further advice in the appendices below.

In paragraph 4.7.10 it is noted that advice will be sought from consultees in order to seek agreement regarding projects to be included within the CEA. We welcome further discussion during the pre-application period to refine the approach to cumulative assessment.

Environmental Impact Assessment Report (EIA Report)

The EIA Report provides the assessment to support the application and should be suitably structured, with appropriate formatting, sufficient information with limited repetition to ensure it can be reviewed efficiently and effectively. Consideration should therefore be given to the following aspects:

- It should clearly follow the direction provided in the Scoping Opinion, or where specific agreement was later reached during the pre-application process. Any divergence from this needs to be laid out separately and must be fully justified.
- Consideration should be given to the volume and flow of information within and across each receptor chapter and associated technical appendices. The flow of information relating to impact pathway, assessment and conclusions should be concise, but not omit key information on steps taken. Repeated duplication of text should be avoided through appropriate structuring.
- In electronic versions of the EIA Report, navigational aids including use of hyperlinks etc. are required, particularly where there are supporting technical appendices to any chapters.
- Each stage of the assessment process should be sufficiently transparent to allow the assessments to be repeated. Where specific tools have been used, details of which version and when the assessment was carried out is required.

Habitats Regulations Appraisal (HRA)

We note that we will be consulted on the HRA Stage 1 Screening Report separately, subsequent to the Scoping Report consultation.

Positive Effects for Biodiversity / Biodiversity Net Gain

We recommend early consideration of potential inclusion of positive effects for biodiversity as well as nature inclusive design. Whilst it is not a policy requirement, as part of the need to address both the climate and biodiversity crises, we encourage developers to consider this as part of their application.

Natural Heritage interests to be considered

We provide advice as detailed below within receptor-specific technical appendices for key natural heritage interests to be considered in the EIA Report:

- Advice on physical processes is provided in **Appendix A**.
- Advice on benthic ecology is provided in **Appendix B**.
- Advice on fish and shellfish ecology is provided in **Appendix C**.
- Advice on marine mammals is provided in **Appendix D**.
- Advice on ornithology is provided in **Appendix E**.

For the following receptors, we advise:

- Seascape, Landscape Character and Visual Impact Assessment (SLVIA) - we do not intend to provide advice regarding SLVIA for the Bowdun Offshore Windfarm Scoping consultation and the subsequent offshore section 36 application. This is due to the location of the proposal and the distance of the array from shore.
- Bats – in our post Scoping Workshop advice (issued 04 July 2024) we advised that *Nathusius' pipistrelle* bats should be considered under EIA for the Offshore Project. We noted that there is currently very little knowledge of bat migration in Scotland, however, recent evidence has shown *Nathusius' pipistrelle* bats flying through on migration. Further to this, there have also been additional sightings at oil and gas platforms in Scottish waters. It is likely that these sightings are an underestimate as they are incidental, rather than from active monitoring. We are aware of research proposals reviewing *Nathusius' pipistrelle* migration, which do migrate across the North Sea from the Baltic region. **We would welcome further discussion with Bowdun and other developers to discuss potential funding and collaboration with ScotMER on this topic.**

Further information and advice

We hope this advice is of assistance to help inform the Scoping Opinion, noting that there may be aspects where some further engagement is required to assist in preparing the EIA Report. We note that not all the baseline surveys have been completed and/or analysed, in addition, there may be further refinement of the PDE and potential for issues that have not been foreseeable at this point in time. As such, we recommend ongoing dialogue with the developer as they prepare their assessment to inform their application.

Please contact me in the first instance for any further advice, using the contact details below, copying to our marine energy mailbox – marineenergy@nature.scot.

Yours sincerely,

Clare McCarty

Marine Sustainability Adviser – Sustainable Coasts and Seas

NatureScot advice on EIA Scoping Report for the Bowdun Offshore Wind Farm

Appendix A – Physical Processes

Physical processes are considered in Section 7 of the Scoping Report.

Study area

The study area is based on several elements: one spring tidal ellipse buffer (suspended sediment plumes); cell boundaries (littoral transport); expert judgement / evidence base (wave blockage). This study area aligns with that presented at the Scoping Workshop and we are therefore content with the study area proposed.

Baseline characterisation

Data sources

Key data sources are provided in Table 7.1 and we are content with those listed. Please note that Hansom et al. (2017) was an output of Dynamic Coast phase 1. In 2021 this was superseded by phase 2 outputs, including [new reports](#) and [webmapping](#) of coastal change, which should be a data source for the EIA.

Designated sites

Figure 7.1 shows the designated sites within proximity to the proposed development, and we note that whilst no sites overlap with the array area or ECC, various sites are within the physical processes study area. We note that in Paragraph 7.4.20 it is stated that “At all sites, changes to the physical characteristics of these sites have the potential to impact the habitats they support and, therefore, consideration is given to them in the marine physical processes assessment.” We welcome this approach.

Impact pathways

The potential impacts proposed to be scoped for physical processes are summarised in Table 7.2. It is noted that no impacts to physical processes receptors or pathways have been scoped out at this stage, due to the potential for pathway changes to impact on other topic receptors.

During the Bowdun Scoping Workshop, we advised that the potential re-exposure of buried landfall cable(s) should be assessed as an additional operational impact, especially given the anticipated increases in rates and extent of erosional retreat at the coast due to accelerating sea-level rise. This is to reduce any potential need for future hard engineering, which could in turn disrupt coastal processes. Much of the landfall area has a rocky foreshore, as such, in the event that HDD is required this impact may be ruled out. However, there are erodible coastal sediments in which a cable might be buriable. Table 5.2 provides a brief summary of the Scoping Workshop and makes reference to the risk of cable re-exposure being considered in the assessment; however, this is not included within Table 7.2. We advise again that this operational impact should be separately assessed in the EIA.

Approach to assessment

Definitions of Magnitude and Sensitivity for the Marine and Coastal Processes impact assessment should be provided at this Scoping stage rather than waiting till in the EIA Report. This is important to avoid potential disagreement over assessment undertaken.

In Paragraph 7.7.2, we welcome the acknowledgment that “potential changes assessed in the physical processes section of the Offshore EIA Report may not themselves be significant, it may be the case that

they have potential to cause significant impacts to other EIA topic receptors.” Similarly, we welcome the recognition that physical processes can be both pathways and receptors and we are content with the two receptors identified at 7.7.3. Furthermore, Section 7.8 discusses potential interrelated effects, whereby information on physical processes will be used to inform other receptors – we support this approach.

A combination of analytical methods is proposed to assess the potential changes to physical processes. Whilst we are content with what is proposed, we highlight the recent consultation on the Physical Processes Modelling Method Statement (NatureScot advice issued 11 July 2024), which provided more detail with respect to the modelling proposed. This detail is not replicated within the Scoping Report.

Cumulative assessment

Section 7.9 discusses potential cumulative effects. The following impacts are proposed to be included in the cumulative effects assessment: sediment plumes / increases in suspended sediment concentrations; and changes to waves, tides and sediment transport. We are content with what is proposed.

Mitigation and monitoring

We welcome the identification of embedded mitigation described in Section 7.5 and summarised in Appendix A: Draft Schedule of Mitigation and Commitments.

However, much of the embedded mitigation detailed throughout includes the development and adherence to post-consent plans/programmes. Plans do not strictly constitute mitigation as it’s the measures contained within the plan that will mitigate impacts. The EIA Report must clearly articulate those mitigation measures that are informed by the EIA and are necessary to avoid or reduce predicted significant adverse environmental effects of the proposed development. We advise that the full range of mitigation and monitoring measures, and published guidance, are considered and discussed in the EIA Report.

Transboundary impacts

Potential transboundary impacts are discussed in Section 7.10 and also in Appendix B: Transboundary Screening. We are content that transboundary impacts can be scoped out from further consideration.

NatureScot advice on EIA Scoping Report for the Bowdun Offshore Wind Farm

Appendix B – Benthic Ecology

Benthic ecology interests are considered in Section 9 of the EIA Scoping Report.

Additionally, Appendix D: Marine Protected Area Screening outlines considerations regarding MPAs and details those to be taken forward to the MPA Assessment Report.

Study area

The local study area is defined as the array area and Export Cable Corridor (ECC) plus a buffer of one spring tidal ellipse, which ranges from 6.22 km to 9.42 km. A regional study area is also proposed, which extends further into the North Sea and has been informed by the Sectoral Marine Plan East Region. We are content with what is proposed.

Baseline characterisation

Data sources

We are content with the proposed data sources and guidance documents as listed in Section 9.3 and Table 9.1. An initial review of these desktop data sources has been used to provide a high-level overview of the baseline environment and we note that paragraph 9.4.1 states a full benthic ecology baseline will be provided in the EIA Report.

Site-specific surveys

We note that results from the site-specific subtidal survey were not available at the time of writing this Scoping Report. Whilst we are content with the general approach suggested for outcomes from the surveys to be incorporated into the EIA Report, if there are any unexpected survey results (e.g. new sensitive habitat identified), we recommend further engagement prior to application submission.

Designated sites

Table 9.3 and Figure 9.4 outline the designated sites within proximity to the proposed development. We note that whilst no sites overlap with the array area or ECC, various sites are within the benthic ecology study area.

Appendix D: Marine Protected Area Screening outlines considerations regarding MPAs and details those to be taken forward to the MPA Assessment Report. Regarding benthic ecology interest, we are content with what is proposed within the MPA Screening in Appendix D.

Potential impacts

Scoping of impacts is discussed in Section 9.6, Table 9.4 and Table 9.5. We are broadly content with what is proposed.

Table 9.4 refers to electromagnetic fields (EMF) impacts from unburied cables. However, we advise that EMF should be scoped in for all cabling (buried and unburied) as burial will not completely remove the possibility of EMF effects on infaunal and epifaunal species. Burial will reduce the level of EMF at the seabed surface, but this could still result in biologically meaningful levels, thereby potentially impacting benthic species.

Approach to assessment

We are generally content with the approach to assessment for benthic ecology. However, we note that the proposed PDE is broad at this point, and moreover results of site-specific benthic surveys are not yet

available. As such, we recommend that as the project envelope is refined further discussion and agreement should be sought during the pre-application period to ensure that assessment processes are fit for purpose.

As briefly referred to in paragraph 9.7.3, we note that the definitions of magnitude and sensitivity for benthic ecology interests are not yet confirmed.

Cumulative impacts

With the proposed number of offshore wind developments in Scottish waters, we are noting the tendency for developers to indicate no LSE from EMF impacts from a cumulative basis. However, we are concerned that the spatial and temporal scale is not being considered cumulatively across the network of cables, including those outwith the proposed development. Therefore, we advise that EMF impacts are considered in the cumulative assessment.

Mitigation and monitoring

We welcome the identification of embedded mitigation described in Section 9.5 and summarised in Appendix A: Draft Schedule of Mitigation and Commitments.

However, much of the embedded mitigation detailed includes the development and adherence to post-consent plans/programmes. Plans do not strictly constitute mitigation; as it's the measures contained within the plan that will mitigate impacts. The EIA Report must clearly articulate those mitigation measures that are informed by the EIA and are necessary to avoid or reduce predicted significant adverse environmental effects of the proposed development. We advise that the full range of mitigation and monitoring measures, and published guidance, are considered and discussed in the EIA Report.

For instance, we would expect micrositing infrastructure to avoid key species / habitats would be included in the embedded mitigation section. However, we acknowledge that the embedded mitigation commitment to "Achieve appropriate design and layout of Wind Turbines within the Array Area" may incorporate this measure, although we consider that micrositing would also be relevant for the ECC.

Transboundary impacts

Potential transboundary impacts are discussed in Section 9.10 and Appendix B: Transboundary Screening. We are content that transboundary impacts for benthic and intertidal interests can be scoped out from further consideration.

NatureScot advice on EIA Scoping Report for the Bowdun Offshore Wind Farm

Appendix C – Fish and Shellfish Ecology

Fish and shellfish ecology is considered in Section 10 of the EIA Scoping Report, with subsea noise considered in Section 8.

Additionally, Appendix D: Marine Protected Area Screening outlines considerations regarding MPAs and details those to be taken forward to the MPA Assessment Report.

Study area

The fish and shellfish ecology study area, as shown in Figure 10.1, is defined as a 100km buffer around the proposed development, which includes the offshore Export Cable Corridor (ECC). The study area is large and includes both the Firth of Forth and the Firth of Tay. We consider the extent of the study area will encompass potential impacts for fish and shellfish receptors, noting that migratory species, including diadromous fish species are likely to travel through both the offshore array area and export cable corridor. Consideration of the ECC in nearshore waters should assess impacts to diadromous fish species, particularly Atlantic Salmon from key East coast salmon rivers such as the Rivers South Esk and Dee, that are in proximity to the landfall area.

Baseline characterisation

Data sources

Key data sources are provided in Table 10.1. We are content with the data sources listed, which includes those recommended in our post Scoping Workshop advice. We also recommend some additional sources relevant to basking shark - which are being sighted more regularly on the East coast:

- Witt, M.J., Hardy, T., Johnson, L., McClellan, C.M., Pikesley, S.K., Ranger, S., Richardson, P.B., Solandt, J.L., Speedie, C., Williams, R., Godley, B.J. (2012). Basking sharks in the northeast Atlantic: spatio-temporal trends from sightings in UK waters. *Marine Ecology Progress Series* 459:121-134.
- Witt, M.J., Doherty, P.D., Godley, B.J. Graham, R.T. Hawkes, L.A. & Henderson, S.M. (2016). Basking shark satellite tagging project: insights into basking shark (*Cetorhinus maximus*) movement, distribution and behaviour using satellite telemetry. Final Report. Scottish Natural Heritage Commissioned Report No. 908.
- Austin, R.A, Hawkes, L.A, Doherty, P.D, Henderson, S.M, Inger, R, Johnson, L, Pikesley, S.K, Solandt, J-L, Speedie, C, Witt, M.J. (2019). Predicting habitat suitability for basking sharks (*Cetorhinus maximus*) in UK waters using ensemble ecological niche modelling. *Journal of Sea Research*, Volume 153, 101767, ISSN 1385-1101.
- Pikesley, S.K., Carruthers, M., Hawkes, L.A. and Witt, M.J. 2024. Analysis of Basking Shark Watch Database 1987 to 2020. NatureScot Research Report 1279.

Receptors

Section 10.4 sets out the baseline environment, including the fish and shellfish species typically expected in the North Sea. This includes marine fish, diadromous fish and commercial shellfish. Maps of spawning/nursery grounds are included for commercial fish species. We note that shellfish such as blue mussel, horse mussel and ocean quahog are covered in the benthic ecology chapter. Our interest in fish species relates to those species that are Priority Marine Features and/or the relationship between predators and prey within marine ecosystems.

In addition, species recorded through site-specific Digital Aerial Surveys are included in Paragraph 10.1.16. Basking sharks are included in the list of elasmobranch species present in the Study Area and were also recorded in the DAS (one basking shark, recorded in July 2023).

It is noted that the results of site-specific benthic surveys are not yet available. Data from other offshore wind farm projects within the study area has been used to provide evidence for species that are likely to be present. Should the analysed site-specific benthic ecology survey data indicate the likely presence of other species, we advise that these additional species will need to be included within the EIA Report. Furthermore, benthic survey data should be used to help inform suitable fish habitat modelling as well as to determine suitable sandeel habitat and/or herring spawning habitat.

Designated sites

Designated sites are listed in Table 10.5 and discussed in paragraphs 10.1.23 – 10.1.25. Seven designated sites with fish and/or shellfish qualifying species are included. The Turbot Bank ncMPA (designated for sandeel) and various SACs designated for diadromous fish and/or freshwater pearl mussel are within the study area.

Several migratory fish SACs are listed within Table 10.5. We note that a HRA Screening Report has been submitted separately, which will consider SACs. We advise that for diadromous fish species there is limited knowledge of distribution and behaviour of these species in the marine environment. For example, the precise migration routes of adult or juvenile Atlantic salmon or direction taken by migrating adult European eels is not fully known. Published information indicates that European smelt and river lamprey are primarily, though probably not exclusively, associated with estuarine environments. Shad might also prefer estuarine environments. The ScotMER evidence map² process for diadromous fish confirms these evidence gaps, particularly with respect to spatial and temporal distribution as well as uncertainty around migration routes, potential impact pathways and connectivity to protected sites. The ScotMER process is an important vehicle for helping to address these evidence gaps and uncertainties. We specifically welcome the ScotMER project *Diadromous Fish in the Context of Offshore Wind – Review of Current Knowledge & Future Research*, due to be published soon. This research may change conclusions on how diadromous fish are treated in both EIA and HRA going forward. However, we advise, based on evidence currently available to us, it is not possible for us to carry out an assessment of diadromous fish to the level required under HRA. We therefore advise that diadromous fish species should be assessed through EIA only and not through HRA.

The Turbot Bank ncMPA is located 35.6 km from the Scoping Boundary, which is within the 100 km buffer for subsea noise. Underwater noise is the only impact pathway further consideration may be required. Within Appendix D: Marine Protected Area Screening it is concluded that underwater noise will not be capable of affecting (other than insignificantly) the sandeel feature of the Turbot Bank MPA. We note and welcome that conclusions regarding underwater noise will be reviewed and confirmed through underwater sound modelling as part of the EIA Report. As underwater noise modelling is not yet completed, we consider it to be premature to screen out the Turbot Bank MPA and advise this MPA is screened in until the noise modelling is complete to allow for the proposed further assessment following underwater noise modelling.

² <https://www.gov.scot/publications/diadromous-fish-specialist-receptor-group/> – published 26 January 2023

Priority Marine Features

Paragraph 10.1.25 states that several of the species likely to be present are PMFs (Atlantic salmon, anglerfish, blue whiting, cod, European eel, European smelt, herring, horse mackerel, ling, mackerel, Norway pout, river lamprey, saithe, sandeel, sand goby, sea lamprey, sea trout, spurdog, and whiting). Consideration of impacts to these species should be undertaken particularly if there is likely to be any impact on the national status of these species from this proposal. This assessment may be qualitative, but should provide the context of impact pathways, impacts and any mitigation.

Impact pathways

The potential impacts proposed to be scoped in and out for fish and shellfish are outlined in Tables 10.6 and 10.7 respectively. We are generally content with what is proposed.

Fish aggregation around the Wind Turbine Generators (WTGs) and other hard structures should also be included for relevant fish species. This would need to be considered with other receptors in mind, e.g. marine mammals and ornithology. Fish aggregation around WTGS should be addressed whether fixed or floating WTGs are to be deployed.

Approach to assessment

We are generally content with the proposed approach to assessment for fish and shellfish ecology, as set out in Section 10.7.

Changes in prey availability

Potential interrelated effects are discussed in Section 10.8, which outlines that fish and shellfish ecology may also impact other receptors including benthic ecology, marine mammals, offshore ornithology and commercial fisheries.

The EIA Report should clearly set out impacts to key prey species (such as sandeel, herring, mackerel and sprat) and their habitats arising from the development alone and cumulatively with other wind farms. Increasingly, there is a need to understand impacts at the ecosystem scale. Therefore, consideration across key trophic levels will enable better understanding of the consequences (positive or negative) of any potential changes in prey distribution and abundance on top predator interests and how this may influence population level impacts. Consideration of how this loss and or disturbance may affect the recruitment of key prey (fish) species through impacts to important spawning or nursery ground habitats should also be assessed.

The PrePARED (Predators and Prey Around Renewable Energy Developments) project³ may be helpful in the understanding of predator-prey relationships in and around offshore wind farms.

Cumulative assessment

Within section 10.9 potential cumulative effects are briefly discussed. All impacts scoped in for the proposed development alone (Table 10.6) will be assessed as potential impacts within the cumulative assessment. A buffer of 100km will be used for subsea noise, with all other impacts applying a buffer of 50km.

The roll out of ScotWind in the North Sea along with other offshore wind development in other countries is a significant change in use, with both temporary and permanent changes to habitats and therefore likely changes to the spatial and temporal use of habitats by fish and shellfish. Consideration of this

³ <https://owecprepared.org/>

change qualitatively should be provided to enable further assessment of what this may mean for predator / prey interactions.

We have observed a tendency for wind farm projects to dismiss impacts from electromagnetic field (EMF) from a cumulative perspective. However, noting the proposed number of offshore wind developments in Scottish waters, we are concerned that the spatial and temporal scale is not being sufficiently considered cumulatively across the network of cables, including those outwith the proposed development. We therefore advise that EMF impacts should be considered in the cumulative assessment.

Mitigation and monitoring

Embedded mitigation is presented in Section 10.5 and Appendix A: Draft Schedule of Mitigation and Commitments. Whilst the mitigation presented isn't directly related to fish and shellfish, it will indirectly reduce the impacts of the development on fish and shellfish. Therefore, we agree with the embedded mitigation presented at this point, however, should the EIA assessment show that further mitigation is needed for fish and shellfish, this should be addressed.

For basking shark, we advise that any mitigation for marine mammals should also be applied to basking sharks. Furthermore, if Uncrewed Surface Vehicles (USVs) or Autonomous Underwater Vehicles (AUVs) are to be used then we recommend further consultation to agree on appropriate mitigation for basking sharks (and also marine mammals).

Transboundary impacts

Section 10.10 and Appendix B: Transboundary Screening discuss potential transboundary impacts. For fish and shellfish ecology, it is concluded that transboundary impacts can be scoped out from further assessment, we agree with this conclusion.

NatureScot advice on EIA Scoping Report for the Bowdun Offshore Wind Farm

Appendix D - Marine Mammals

Marine mammals are considered in Section 11 of the EIA Scoping Report, with subsea noise considered in Section 8.

Additionally, Appendix D: Marine Protected Area Screening outlines considerations regarding MPAs and details those to be taken forward to the MPA Assessment Report.

Study area

The marine mammal study areas are defined in Section 11.2 and Figure 11.1. We are content with the approach to use a local scale study area based on the DAS (12km DAS buffer) and a regional scale study area covering a wider area of the North Sea as defined by relevant IAMMWG Management Units (MUs).

We note that the Bowdun regional study area does not encompass each of the full MUs for each species scoped into the assessment. The regional study area was discussed in the Scoping Workshop (held on 25 April 2025). This study area aligns with that presented at the Scoping Workshop and as such we are content - noting the points below regarding baseline characterisation and population estimates.

Baseline characterisation

Data sources

We are generally content with the proposed data sources, as per Table 11.1 and in addition recommend consideration of Marine Directorate's SPAN / ECOMMAS acoustic work, as well as SMASS, WDC and ORCA sightings.

Table 11.3 outlines the marine mammal species recorded in the first year of site-specific DAS. We advise that any species identified in the DAS should be scoped into the EIA assessment, whether this be quantitatively or qualitatively.

For quantitative assessment, the most precautionary density estimate should be used, whether this is from DAS or SCANS. If there are no density estimates available from SCANS IV or the SCANS III modelled density surfaces are significantly higher, then SCANS III should be used instead.

Table 11.7 sets out the estimated population size for harbour porpoise, bottlenose dolphin, white-beaked dolphin, minke whale, grey seal and harbour seal. For grey seal, it is noted that population estimates have been derived by the applicant from the most recent August counts at haul-out sites (applicant references SCOS, 2023). We note that SCOS 2023 is an interim advice report and not new seal population estimates, therefore the 2022 figures should still be used. We advise that the latest SCOS PBR (Nmin) population estimates are used for each seal monitoring unit for each species, rather than using scalars, this is to ensure consistency in assessments across all developments. When undertaking the assessment, any updated seal figures in the most recent SCOS report should be reviewed and incorporated if appropriate.

We are content with the reference populations stated in Table 11.7 for the wider study area. However, for impact assessment we advise the use of population estimates for the UK portion of the IAMMWG MUs rather than the full MUs, for species with very large MUs. The reasoning for this is to try to present the most realistic assessment of numbers of animals affected by developments in Scottish waters. The MUs for most species are very large areas, and in most cases are too big for a meaningful understanding of impacts to affected populations. Although we know this is based on a non-biological delineation, we feel that using the UK portion of the MU better reflects the likely size of populations affected by the

potential impact pathways. For species with smaller MUs, such as bottlenose dolphin in the Coastal East Scotland MU, and seals, the entire MU should be used in the assessment.

The use of population estimates for the full MUs are still useful for context and baseline characterisation. We advise stating the total MU population for context, and then assessing impacts against the UK portion of the MU.

Receptors

We are content with the species to be included in the EIA Report, as listed in paragraph 11.4.7, which includes the consideration of fin whale and humpback whale qualitatively. However, given that Risso's dolphins were identified in the site-specific DAS (along with 51 unidentified dolphin or porpoise species and 41 unidentified marine mammals recorded) we advise that Risso's dolphin are also considered qualitatively.

Designated sites

Table 11.8 lists designated sites within the UK portion of the MUs included in the regional study area.

The Southern Trench ncMPA is located 35.9km from the Scoping boundary, within the 100km buffer for subsea noise. Within Appendix D: Marine Protected Area Screening, it is concluded that underwater noise contours associated with disturbance effects are unlikely to extend to the Southern Trench ncMPA and is therefore proposed to be screened out. However, we note that underwater noise modelling is still to be completed and as such consider it premature to scope out effects on the Southern Trench MPA at this stage.

Potential impacts

We are generally content with the scoping of impacts as set out in Table 11.9 and Table 11.10, with further comments provided below.

In Table 11.9, for injury and disturbance, we agree that a dose-response approach is used for piling. Regarding injury and disturbance from subsea noise, clarification on what is meant by 'residual effect' within Table 11.9 would be helpful - we assume this to be the overall impact with mitigation applied, however, it would be useful to also present the unmitigated impact initially. In relation to this, it would be helpful to present the percentage of the reference population affected in order to assign magnitude.

In addition, unless sound levels are predicted to exceed PTS from operational or other construction activities (continuous noise sources), then PTS does not need to be included for these activities. It is usually piling, UXO and any other impulsive noises that we would expect to see PTS modelled for.

Direct impacts to marine mammals from EMF have been scoped in, which we are content with. We advise that indirect impacts from EMF should also be scoped in, cross-referencing between the fish and shellfish chapter and marine mammal chapter.

Approach to assessment

The proposed marine mammal assessment methodology is outlined in Section 11.7.

Paragraph 11.7.2 states that the marine mammal species carried forward to the assessment will be grouped into broad ecological groups (IEFs) and impacts set out in Table 11.9 will be assessed for each IEF. The rationale behind this is not explained and we do not support this proposed approach for marine mammals. For clarity, we expect marine mammal species to be assessed independently rather than grouped together for assessment. For species where quantitative assessment is possible, we expect to see a

percentage of each species respective (UK portion) reference population when assigning the magnitude of each assessed impact.

Further comments and advice regarding the approach to assessment are provided below.

Densities

As above, we advise that the most precautionary estimate between DAS and SCANS IV (or modelled density surfaces if available and only when more precautionary than the average density surface) should be used. If there are no density estimates available from SCANS IV or the SCANS III modelled density surfaces are significantly higher, then SCANS III should be used instead. If this is not available, we can accept Waggitt, et al. (2019).

For humpback whale, fin whale and Risso's dolphins, a qualitative approach will be required, as noted above.

IPCoD model

Population modelling (iPCoD) should be carried out in order to identify long-term impacts to marine mammal populations. This should be done for the proposed development alone and cumulatively with other activities (both OWF and others). A new version of the iPCoD model will be published soon, which incorporates a Dynamic Energy Budget (DEB) for harbour porpoise. This should be used if available within the project timelines, although we are content with the use of the current model otherwise.

Sensitivity and magnitude

From experience with recent casework, we wish to highlight that we do not agree with the assignment of sensitivity scoring to noise related impacts as negligible or even low for marine mammals. Scoring should take their ability to tolerate, recover and adapt behaviour to maintain vital rates in response to assessed pressures into account, as well as considering their conservation value. Value is consistently considered within the sensitivity criteria across other ecological receptors. Not including value/importance within the sensitivity criteria disregards the inherent reason why cetaceans and seals are given a high level of legislative protection through the Habitats Regulations and fails to fully acknowledge the potential risks to individuals and populations.

We welcome the use of iPCoD to provide context and consider the longer-term effects on the available species population. However, when defining magnitude, we do not agree that it is the only metric to consider. Ideally, the assessment should include an indication of the proportion of the population (where known) which is likely to be impacted. For some species, it may also be possible to model the population impacts (e.g. using iPCoD) to give an indication of long-term (25 year) effects. We advise that both approaches should be presented in the EIA Report, for species with adequate data. For other species, such as those only recorded occasionally or outwith the SCANS period, a qualitative assessment is sufficient where there are no density or population estimates.

Underwater noise modelling

The approach to underwater noise assessment is set out in Section 8.7 and Appendix C: Subsea Noise Modelling Method Statement. We welcome further discussion as the approach to underwater noise is refined.

In Table 8.2 it is noted that that injury ranges will be estimated for UXO. For UXOs, we advise that disturbance is also assessed using TTS as a proxy. We are content with the use of thresholds as set out by Southall et al. (2019) as per Table C1.1, but we clarify that TTS modelling is required for UXO only. As

per Table 11.9 for marine mammals, other non-piling construction activities such as drilling, trenching, cable cutting, and rock placement should also be considered in the EIA assessment for UWN.

We agree that the dose-response approach should be used for piling, as per Table C1.3. However, we highlight that for cetaceans, Graham et al. (2017) should be used. For continuous noise sources, we are content with the proposed threshold approach of 160 dB re 1 μ Pa (rms). However, for impulsive noise sources we advise presenting thresholds as peak (rather than rms) to make it comparable with the Southall thresholds.

As listed in Tables C1.4 - C1.6, we agree with the use of Popper et al. (2014) for fish, larvae and turtles. It is proposed that the von Pein et al. (2022) scaling / line source approach is to be used, rather than point-source modelling, we are content with this approach.

Swim speeds are set out in Table C1.7 and we are content with those presented.

Cumulative impacts

Potential cumulative impacts are discussed in Section 11.9. We advise considering a year on either side of the project and looking at both temporal and spatial overlap. Where available, project specific impact predictions based on underwater noise modelling should be used, where this is not available, we are content with the use of effective deterrent ranges (EDRs). If the Cumulative Effects Framework (CEF) is published within the project timeframe then we recommend that is used to undertake the cumulative assessment; in the interim, the most up-to-date version of iPCoD can be used instead. We note that advice will be sought from consultees to seek agreement on which projects to include and we welcome further discussion to refine the approach to cumulative assessment.

Transboundary impacts

Potential transboundary impacts are discussed in Section 11.10 with further detail provided in Appendix B: Transboundary Screening. We agree that transboundary impacts can be scoped out from further consideration.

Mitigation and monitoring

We welcome the identification of embedded mitigation, as briefly described in Section 11.5 and Appendix A: Draft Schedule of Mitigation and Commitments. We are generally content with what is proposed, however note that much of the embedded mitigation includes the development of and adherence to post-consent plans/programmes.

As good practise measures, we recommend the Scottish Marine Wildlife Watching Code (SMWWC) is used to minimise disturbance to marine mammals and, if possible, use of night vision binoculars for pre-geophysical survey/piling/UXO clearance, particularly in poor visibility or at night.

We advise that any mitigation for marine mammals should also be applied to basking sharks. If Uncrewed Surface Vehicles (USVs) or Autonomous Underwater Vehicles (AUVs) are to be used, we recommend further consultation to agree on appropriate mitigation for both basking sharks and marine mammals.

Proposed monitoring has not been detailed for marine mammals within the Scoping Report. For the monitoring of potential impacts to marine mammals we encourage consideration of a strategic approach with adjacent Offshore Wind Farms, especially with the use of novel floating technology and the lack of information we currently have on operational noise. We would welcome an outline of potential monitoring plans for the EIA Report and as we believe it is important to take industry opportunities to learn more about the baseline of marine mammals in Scotland, we would promote further consultation on monitoring approaches.

NatureScot advice on EIA Scoping Report for the Bowdun Offshore Wind Farm

Appendix E - Marine Ornithology

Ornithology interests are considered in Section 12 of the EIA Scoping Report.

Study area

The Offshore Ornithology Study Areas are defined in Section 12.2. Three study areas are proposed, including the Array Area (winter), Array Area (summer) and Export Cable Corridor - as illustrated in Figure 12.1.

The Array Area Study Area (winter) is defined as the E3 Plan Option Area (POA) plus a 12km buffer, the Array Area Study Area (summer) covers this area plus an extension to shore. The Export Cable Corridor Study Area is the ECC plus a 10km buffer up to Mean High Water Springs (MHWS).

Whilst these study areas are appropriate, it is important that a wider, regional study area is also identified to enable regional populations to be calculated. This wider study area should be derived from:

- Species-specific breeding season foraging ranges from Woodward et al. (2019), as provided in our Guidance Note 3⁴, and
- for the non-breeding season, Biologically Defined Minimum Population Scales (BDMPS) regions as defined in Furness (2015)⁵.

Please note that for guillemot and herring gull in the non-breeding season we advise that the breeding season foraging range is used as these species do not disperse far offshore during the non-breeding season, remaining relatively close to breeding colonies.

Baseline characterisation

Site-specific Surveys

We note that LiDAR surveys were conducted within the Array Area to collect site-specific flight height data and it is the intention that these site-specific flight heights are used to inform Collision Risk Modelling (CRM). For CRM we advise use of the generic flight height information in Johnston et al. (2014)⁶. However, robust site-specific flight height data can be presented for comparison.

Desk-based Literature Review

Table 12.1 lists example sources of information including technical guidance, key data and information sources that will be used to inform the ornithology assessment. Little contextual information is provided, and although an extensive reference list for the Scoping Report is included (pages 540 – 580), some of the sources listed in Table 12.1 remain unclear – for example “British Trust for Ornithology (BTO) (2024)”, “The International Council for the Exploration of the Sea (ICES) (2022)” and “JNCC (2020)”. Where key

⁴ <https://www.nature.scot/doc/guidance-note-3-guidance-support-offshore-wind-applications-marine-birds-identifying-theoretical>

⁵ Furness (2015) - Non-breeding season populations of seabirds in UK waters - Population sizes for Biologically Defined Minimum Population Scales (BDMPS). Natural England Commissioned Report NECR164.

⁶ <https://doi.org/10.1111/1365-2664.12191>

data sources are identified this should be made clear. Our suite of guidance notes⁷ are referred to, please note that these include a range of relevant references and data sources.

We note that several offshore wind projects, which provide relevant information, are listed as example sources in Table 12.1. However, we would not recommend using the West of Orkney 2023 application as it is going through considerable amendments, particularly in relation to the ornithology section of the application.

Potential impacts

We are broadly content with the impacts scoped in (as per Table 12.4) and scoped out (as per Table 12.5), however, provide the following advice.

Disturbance from vessel movement

Table 12.4 states that birds may be disturbed from their preferred foraging areas by the transiting of vessels between port(s) and the wind farm, and ECC. We are pleased that disturbance from transiting vessels is considered. We advise that the extent of the assessment required will depend on the ports used. For example, if ports in the Firth of Tay or Firth of Forth were used then a detailed assessment of potential impacts on the Outer Firth of Forth and St Andrews Bay Complex SPA would be required.

Disturbance to prey species and their habitats

Unexploded Ordnance (UXO) clearance is mentioned under disturbance to prey species and their habitats in relation to underwater noise. Detonation of UXO may also risk injury or death to diving seabirds within the vicinity. Therefore, direct impacts to seabirds should also be included, alongside indirect impacts from underwater noise on prey species.

Attraction to light

Species such as European storm petrel, Leach's petrel and Manx shearwater are vulnerable to both light attraction and disorientation. Please note that as well as turbine lighting, lighting on servicing or construction vessels could be of concern, especially if construction will be a 24/7 operation.

Manx shearwater, European storm petrel and Leach's storm petrel have been recorded in the first year of DAS surveys and therefore we would expect a qualitative assessment of the impacts of lighting on these species to be carried out. The following report may be helpful: *Petrel and Shearwater Sensitivities to Offshore Wind farms – Evidence Review*⁸.

Approach to assessment

MRSea

Paragraph 12.8.5 states that MRSea modelling is intended to be undertaken for density estimates and visual mapping within the EIA Report. It is noted that where MRSea cannot be used then design based estimates of density and abundance will be used. As per our Guidance Note 2⁹, our advice is that MRSea is used for density modelling whenever feasible. However, we recognise that it may not be possible to

⁷ <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/renewable-energy/marine-renewables/advice-marine-renewables-development>

⁸ <https://www.gov.scot/publications/review-inform-assessment-risk-collision-displacement-petrels-shearwaters-offshore-wind-developments-scotland/>

⁹ <https://www.nature.scot/doc/guidance-note-2-guidance-support-offshore-wind-applications-advice-marine-ornithology-baseline>

run the spatial elements of MRSea when data are not suitable for this modelling approach. For example, if the number of data points for a species is less than 10, or the species is present in a uniform distribution. The principle of this advice is that the model fit is explored and where this is poor, we request an explanation is set out to enable further discussion and agreement on the use of design-based estimates.

Availability Bias

A report has recently been published which presents new availability bias correction factors for auks and red-throated diver – *Temporal and spatial variability in availability bias has consequences for two marine bird abundance estimates during the non-breeding season* (Dunn et al., 2024). We are currently reviewing this and will update our guidance shortly if appropriate. Depending on timescales, this may be relevant for the Bowdun project.

Collision risk modelling (CRM)

CRM is discussed in paragraphs 12.8.12 – 12.8.18. **Please use the recently published ‘Joint advice note from the Statutory Nature Conservation Bodies (SNCBs) regarding bird collision risk modelling for offshore wind developments’¹⁰ for developing the CRM approach and methodology. This advice note contains important updates to our existing guidance, please ensure that this most recent guidance is followed.**

There have been several implementations of a stochastic Band (2012) CRM, and we highlight that McGregor et al. (2018) has been replaced by the Caneco & Humphries (2022)¹¹ interface which is termed the sCRM tool and is based on stochLAB R package.

We recommend that Option 2 of the Basic Band model is always presented, using generic flight height information in Johnston et al. (2014). Where robust and appropriate site-specific flight height data relevant to the proposed development is available, Option 1 can be presented as well.

Parameters for key species are discussed in paragraph 12.8.14, as highlighted above, please refer to the recently published SNCB advice note to ensure the correct parameters are used.

Paragraph 12.8.15 notes that avoidance rates recommended in the NatureScot guidance notes (i.e. guidance note 7) will be used. We now recommend the use of avoidance rates in Ozsanlav-Harris et al. (2023)¹², these are presented in the recently published SNCB advice note.

It is noted that the key species at risk of collisions, listed in paragraph 12.8.16, may be updated following results of the second year of DAS. Fulmar are included within this list; however, we note that generally Fulmar are not considered to be at high risk of collision impacts as flight height is generally close to the sea surface and below potential collision height.

We are aware of work undertaken by Natural England on macro-avoidance for gannet¹³. We are not currently in a position to adopt the full recommendations of this work; however, we do accept the outputs for gannet during the non-breeding season. The work informing this rate is based on 10 studies, with only one of them in Scotland. We don't feel there is sufficient evidence from the breeding season,

¹⁰ <https://hub.jncc.gov.uk/assets/f7892820-0f84-4e96-9eff-168f93bd343d>

¹¹ [the sCRM tool shiny app](#) (Caneco 2022).

¹² Ozsanlav-Harris, L., Inger, R. and Sherley, R. 2023. Review of data used to calculate avoidance rates for collision risk modelling of seabirds. JNCC Report 732, JNCC, Peterborough, ISSN 0963-8091.

¹³ Consideration of avoidance behaviour of northern gannet (*Morus bassanus*) in collision risk modelling for offshore wind farm impact assessments September 2023 Natural England Commissioned Report NERC512

or from studies close to gannet breeding colonies in Scotland, for us to accept the proposed macro-avoidance rate for the breeding season.

In Paragraph 12.8.18, it is noted that the Migratory CRM will be used to predict the number of collisions of migratory birds. Regarding migratory birds and collision risk, the project '*Strategic study of collision risk for birds on migration and further development of the stochastic collision risk modelling tool*' will be useful for offshore wind farm projects and should be considered. The project consisted of three work packages:

1. Strategic review of birds on migration in UK waters - this review has been published¹⁴.
2. Develop a stochastic CRM tool for migratory species - the mCRM tool can be found on GitHub but has not yet been formally published by Marine Directorate.
3. Strategic assessment of migrant collision risk at Scottish and sectoral marine plan regional level under various scenarios. This will use the information from the work package one review within the mCRM tool. This is currently under revision and is not yet available.

Marine Directorate should be contacted for any further clarification regarding this study and the work packages noted above.

Displacement assessment

In paragraph 12.8.21, it is noted that the matrix method will be used to assess distributional effects of all species. We recommend that SeabORD is used to assess the impact of distributional effects during the chick rearing season for guillemot, razorbill, puffin and kittiwake as advised in our Guidance Note 8¹⁵. However, it is our understanding that the MATLAB version 1.3 of SeabORD is currently unavailable and in the absence of the CEF we accept that the matrix method will need to be used for all species. MD-LOT should be contacted regarding the status of SeabORD and for any updates on availability.

Paragraph 12.8.22 lists the most abundant species from the first 12 months of survey data, which are also susceptible to displacement, including guillemot, razorbill and puffin. Other species present in sufficient numbers in the initial data and vulnerable to displacement are kittiwake, fulmar and gannet. Kittiwake and gannet are susceptible to both collision and displacement and these impacts should be combined in assessments. Fulmar have not previously been assessed in projects due to their extensive foraging range. However, they have now started to be included in some assessments particularly due to proximity to breeding colonies and concerns with barrier effects; this may need to be considered for the Bowdun project.

Apportioning

Seabird populations at SPAs and non-SPAs should be derived from Seabirds Count¹⁶ and the Seabird Monitoring Programme database¹⁷, using the most up to date counts. For colonies badly affected by HPAI additional counts have been carried out in 2023 and 2024 and these should be used.

¹⁴ <https://www.gov.scot/publications/strategic-study-collision-risk-birds-migration-further-development-stochastic-collision-risk-modelling-tool-work-package-1-strategic-review-birds-migration-scottish-waters/pages/3/>

¹⁵ <https://www.nature.scot/doc/guidance-note-8-guidance-support-offshore-wind-applications-marine-ornithology-advice-assessing>

¹⁶ Seabirds Count – A Census of breeding seabirds in the UK and Ireland (2015-2021), Burnell et al.

¹⁷ <https://app.bto.org/seabirds/public/index.jsp>

For apportioning the distance from the seabird colony to the array should be measured from the geometric centre of the colony to the geometric centre of the array. Please note that this is to consider SPAs according to their relative distances, it should not be used for further screening.

Population Viability Analysis (PVA)

The approach to PVA is discussed in paragraphs 12.8.27 – 12.8.28. 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 threshold applies to both HRA and EIA.

Our most recent guidance on PVA thresholds should be followed and this is attached as an annex to this advice. It provides information on both project alone and in-combination thresholds for PVA.

JNCC are currently undertaking a project to update Horswill and Robinson (2015)¹⁸ in terms of demographic rates for use in PVA. Once published we would anticipate that this is used. The final report should be published by the end of 2024.

We support the modelling of impacts over 25 and 50 years (as referred to within paragraph 12.8.28), but also recommend the intended duration of the project being modelled, if this is different.

Highly Pathogenic Avian Influenza (HPAI)

There is no mention of HPAI in the scoping report. There is a need for ongoing engagement in relation to the impacts of HPAI and how to incorporate these impacts within assessments. Work is continuing within NatureScot to provide further information in due course. In the meantime, we expect the impact of HPAI on colonies to be considered qualitatively especially when reviewing PVA outputs.

As the DAS survey work straddles the HPAI outbreak it will be important for assessment purposes to consider the current status of seabird populations at SPA colonies. Surveys have been undertaken at a number of key seabird colonies in 2023, coordinated by RSPB, and some have been repeated in 2024. Recent data for key species at some sites can already be found on the SMP database. RSPB have published a report on HPAI effects which will provide helpful context: *UK seabird colony counts in 2023 following the 2021-22 outbreak of Highly Pathogenic Avian Influenza Research Report 76. RSPB Conservation Science 2.*

Cumulative impacts

Potential cumulative impacts are considered in Section 12.10. In paragraph 12.10.3, it is stated that consideration of each other projects' spatial and temporal overlap will be provided to ascertain whether a cumulative effect could occur. Please note that for screening in projects to assess cumulative impacts for the EIA, species-specific foraging ranges should be used.

As discussed in paragraph 12.10.4, we note that the developers of the North-East and East Ornithology Group (NEEOG), of which the Applicant is one, have commissioned a methodology to provide an interim solution to cumulative effects assessment in the absence of the CEF. It is proposed that all NEEOG projects will use the agreed cumulative effects assessment numbers, for comparable results. We are aware of this work and in principle can agree with it being used, however, we are unsighted of any details or recent updates to enable us to fully support it.

¹⁸ Horswill & Robinson (2015) Review of Seabird Demographic Rates and Density Dependence. JNCC report 552

If the Cumulative Effects Framework (CEF) is published within the project timeframe then we recommend that it is used to undertake the cumulative assessment.

Please note that our updated guidance on PVA thresholds for in-combination effects should be followed and is attached as an annex to this advice. This advice applies to EIA and HRA.

We have advised Marine Directorate that the Berwick Bank application will have adverse effects on site integrity (AEoSI) on multiple seabird species within the UK European Site Network, some of which overlap with the species and sites assessed in other applications. Consequently, as the outcome of the Berwick Bank application is unknown at present, PVA models should be run using two scenarios: Berwick Bank consented and unconsented. We will provide an update should this situation change.

Transboundary impacts

Potential transboundary impacts are mentioned in Section 12.11 and Appendix B: Transboundary Screening. We support the approach to transboundary impacts, as outlined in these sections of the Scoping Report.

Mitigation and monitoring

Embedded mitigation measures are described in Section 12.6 and summarised in Appendix A: Draft Schedule of Mitigation and Commitments. We welcome the identification of embedded mitigation measures, however, note that much of these include the development and adherence to post-consent plans/programmes. Plans do not strictly constitute mitigation; as it's the measures contained within the plan that will mitigate impacts. The EIA Report must clearly articulate those mitigation measures that are informed by the EIA and are necessary to avoid or reduce predicted significant adverse environmental effects of the proposed development. We advise that the full range of mitigation and monitoring measures, and published guidance, are considered and discussed in the EIA Report.

We consider there to be scope for additional embedded mitigation measures to be specified. For example, regarding species attracted to and/or disorientated by artificial light sources, we recommend considering the findings from the Marine Directorate commissioned review to inform the assessment of the risk of collision and displacement in petrels and shearwaters from offshore wind developments in Scotland¹⁹. In addition, we recommend that protocols are built into construction and operation phases for monitoring and handling of any birds attracted by lighting, as well as associated recording of any such incidents including context (e.g. weather).

¹⁹ Deakin, et al. (2022). A review to inform the assessment of the risk of collision and displacement in petrels and shearwaters from offshore wind developments in Scotland. Marine Directorate.

Annex 1: Population Viability Analysis – Identifying the requirement for PVA

NatureScot advice - September 2024

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 assessment for other offshore renewable 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.

Figure 1: Identifying the requirement for PVA

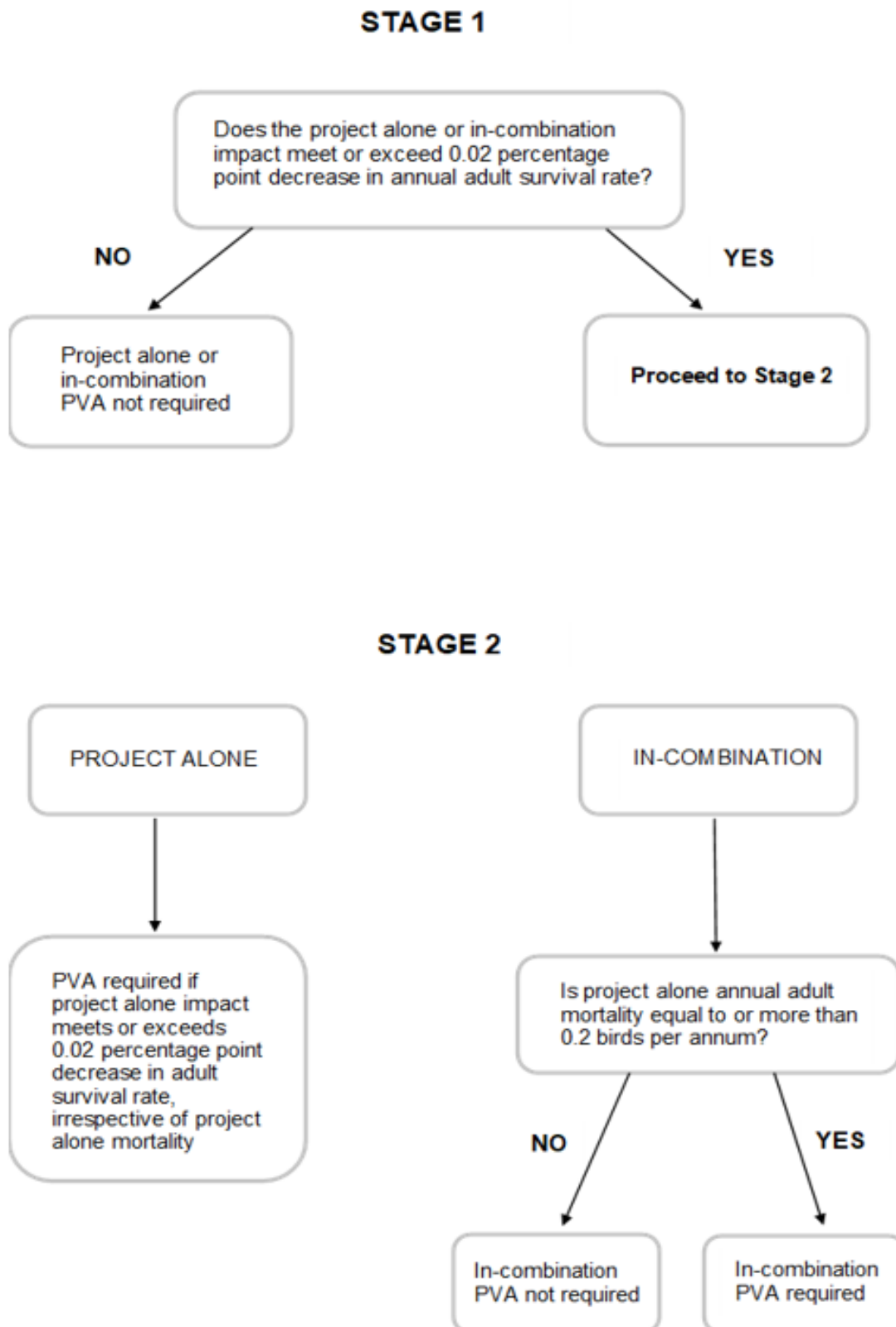


Table 1: Example scenarios for PVA thresholds

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 thought precautionary. However, it is important to look at PVA counterfactuals even where there is only a small project contribution, as we consider this along with a number of other factors. These include:

- 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.

Northern Lighthouse Board



Northern Lighthouse Board

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Your Ref: SCOP-0056 – Bowdun OWF – Scoping Report
Our Ref: AL/OPS/ML/WIND_061_24

Ms Abby Gray
Licensing Operations Team – Marine Directorate
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

20 September 2024

REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017; REGULATION 13 AND SCHEDULE 4 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2007; REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017 (collectively referred to as the “EIA Regulations”)

SCOP-0056 – Thistle Wind Partners Limited – Bowdun Offshore Wind Farm – Scotwind E3 Site – Approximately 38km off Aberdeenshire Coast

Thank you for your e-mail correspondence dated 4th July 2024 relating to the Scoping Report submitted by **Thistle Wind Partners Ltd** for the proposed development of the Bowdun Offshore Windfarm, located approximately 38km off the Aberdeenshire coast. NLB note the irregular shape of the Plan Option Area, with potential for isolated structures within the development area.

It is noted that the project will consist of a maximum of 67 Wind Turbine Generators (WTG) utilising either fixed or floating foundation types, and up to 3 fixed foundation Offshore Substation Platforms (OSP). Up to 4 export cables will connect the array to the landfall site at Benholm, Aberdeenshire.

Northern Lighthouse Board acknowledge the inclusion of Chapter 14 – Shipping and Navigation within the report, and welcome the commitment to develop Post-Consent documentation including a Lighting and Marking Plan (LMP), Development Specification and Layout Plan (DSLPL) and a Navigational Safety Plan (NSP) as embedded mitigations across all phases of the project. NLB will continue to engage with the developer with regard to these documents.

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To find out more, please see our Privacy Notice at www.nlb.org.uk/legal-notice/

NLB also welcome the inclusion of Section 14.9 (Potential Cumulative Effects) and 14.10 (Potential Transboundary Effects).

Northern Lighthouse Board also note the inclusion of Section 3.9 acknowledging the requirement to consider the impact of wet storage of wind farm infrastructure throughout the construction of the project, but that this will be considered by the relevant port, harbour or storage facility, and not within the wind farm EIA.

NLB do request that consideration is given within the EIA to the potential impact that a wreck (either that of a vessel or WTG) could have upon navigation, both within the Bowdun array areas and the immediate vicinity.

Yours sincerely

[Redacted]

Peter Douglas
Navigation Manager

Peterhead Fishery Office

From: [William Harris](#) on behalf of [FO Peterhead](#)
To: [MD Marine Renewables](#)
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024
Date: 14 October 2024 15:13:01
Attachments: [image001.png](#)
[image002.jpg](#)

Hi Abby,
Thanks for getting in touch.
It's a nil response from us.
Could you please let me know the associations that you put this to in the Peterhead area.
Thanks,
Billy

William A. Harris
Senior Operations Officer
Operations - Marine Directorate

SoS Values



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Royal Yachting Association

2 October 2024

Abby Gray, Marine Licensing and Consenting Casework Officer
Licensing Operations Team, Marine Directorate
Marine Laboratory, 375 Victoria Road,
Aberdeen, AB11 9DB
md.marinerenewables@gov.scot

Dear Abby,

SCOP-0056 - Bowdun Offshore Windfarm - ScotWind E3 Site

I have read the relevant parts of the scoping report on behalf of RYA Scotland. Clearly Shipping and Navigation should be scoped in to the EIA. RYA Scotland and the Cruising Association would both like to contribute to the Navigational Risk Assessment.

As pointed out in the report, rather few recreational craft are likely to pass through the wind farm area but some certainly will and this may be in adverse weather. I expect that about a quarter of recreational vessels in this location are likely to transmit an AIS signal.

An additional risk is the failure of Aids to Navigation, particularly on metocean buoys and other hazards. There have been more than a few cases where lights or AIS transmissions have failed on metocean buoys or where they have lost station and it has taken several days to replace them due to adverse weather. Mitigation might include the use of virtual AtoNs.

Considerable experience has now been developed in floating wind farm NRAs and mitigations are now well established. We do not consider that floating wind farms are qualitatively different from fixed foundation ones.

Yours sincerely,

[Redacted]

Dr G. Russell FCIEEM(retd) FRMetS
Planning and Environment Officer, RYA Scotland

Scottish Environment Protection Agency

From: Farquhar, Alan
Sent: 11 September 2024 13:00
To: MD Marine Renewables
Cc: Planning.North
Subject: RE: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024

Categories:
Objective:

OFFICIAL

Dear Abby,

I can confirm that we have no comments.

Regards,


Alan

Alan Farquhar
Planning & Contaminated Land Manager
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba

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I work Monday - Friday

Scottish Fishermen's Federation



Our Ref: FH-Bowdun-WFDA/24-0001

Your Ref: Scoping - Bowdun Offshore Wind Farm - SCOP-0056

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25 October 2024

Dear Abby Gray/Judith Horrill,

SFF Response to Bowdun Offshore Wind Farm EIA Scoping & HRA Screening Reports Consultation

This response to the scoping request (SR) is presented by the Scottish Fishermen's Federation 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. The chair of NECRIFG has also been consulted and agrees.

As the Development Array Area (DAA) covers an area of 187km² and the DAA and Export Cable Corridor (ECC) overlap with prime fishing and sensitive spawning and nursery grounds of commercially important fish species. In addition, Chapter 13 (Commercial Fisheries) of the SR states that the annual fishing value (2018 – 2022) from the Bowdun OWF project study area is c. £6 million with landings values peaking in 2018 at £7.3 million and 94% landed by Scottish vessels. Since the Development would use floating foundation WTGs (which is a no take zone for most fishing methods), **SFF strongly objects to this project.**

General comments

SFF notes from section 3.2 of the Bowdun Offshore Wind Farm (Proposed Development) Scoping report (SR) that Project Design Envelop (PDE) approach (also known as the 'Rochdale Envelope') will be adopted for this SR and the Environmental Impact Assessment (EIA) Report. The PDE approach is based on assessing the maximum potential impact for each element of the Proposed Development's design through the specification of a range of design parameters. Therefore, the following comments are based on existing details provided in this Scoping Report and further

Members:

Anglo Scottish Fishermen's Association Fife Fishermen's Association Fishing Vessel Agents & Owners Association (Scotland) Ltd
Mallaig & North-West Fishermen's Association Ltd Orkney Fisheries Association Scottish Pelagic Fishermen's Association Ltd
The Scottish White Fish Producers' Association Ltd Shetland Fishermen's Association

VAT Reg No: 605 096 748

comments will be shared in due course once the Project's design is finalised. In addition, as the type of foundations to be used has not been selected yet and there are possibilities for the use of floating or fixed foundations wind turbine generators (WTG). We propose that this SR to be undertaken considering worst case scenarios (use of floating foundation WTGs for the Proposed Development).

Specific comments

Wind Turbine Generator (WTGs) foundation/spatial footprint

SFF notes from sub-section 3.5 'Wind Turbine Foundations and Supporting Structures' (p32) of the SR that the PDE presently incorporates options for both fixed (monopile; piled or drilled jacket; and suction bucket jacket) or floating Wind Turbine foundations, with final design and foundation options to be refined throughout the EIA process.

Of primary concern is the spatial footprint of floating WTGs and the potential snagging hazard that their moorings system creates to fishing vessels, SFF would propose to the Applicant to use the fixed foundation design (with lesser spatial footprint) for as much WTGs as possible. Considering the water depth across the Proposed Development Array Area is between 55 – 75m, we are of the view that the use of fixed foundation is feasible as a fixed foundation wind farm in a water depth of greater than 70 metres is planned for another offshore wind development in Scottish waters.

Where the use of fixed foundation WTGs is not feasible due to technical issues, in such situations, SFF's first preferred WTG floating foundation option is TLP, since they have a lesser spatial footprint on the seabed.

Inter-Array Cable (IAC)

SFF notes from para 3.5.35 (p44) that the Proposed Development design envelope currently considers the use of both static and dynamic (Lazy 'S' configuration) IACs. Considering the footprint of the dynamic IACs sections, SFF's preferred configuration is free hanging vs 'lazy S' shape.

Cable Burial and Protection

SFF notes from sections 3.5. and 3.6 that static sections of IAC cable may be surface laid or buried. In addition, as with the IACs, where possible the Offshore Export Cables and Interconnector Cables will be buried to an appropriate target burial depth (1 – 3m). In cases where such burial is not feasible (e.g. the foundation entry points, or where the cable is expected to cross areas of bedrock, pipelines, or other existing cables), alternative protection methods (e.g. concrete mattresses, rock placement, cast iron shells or grout/rock bags) will be considered.

The primary concern of the SFF is fishermen's safety, the SFF would appreciate it if the Applicant could make all efforts to reach the required depth of cable burial. The avoidance of using cable protection measures as much as reasonably practical would also be appreciated as the volume of cable protection mass will disrupt the marine habitat and would create a snagging hazard for fishing vessels within array area.

In terms of using cable protections, SFF is opposed to using concrete mattresses, grout/rock bags and sandbags in open water since they create severe snagging hazards for bottom trawl fishing vessels and static gears. SFF's preferred cable protection measure is rock placement/protection considering industry standard rock size (1" - 5") with a 1:3 profile followed by an over-trawl sweep alongside a long-term monitoring programme.

In terms of crossing points, as they create obstacles and a snagging hazard to the fishing industry, SFF would suggest that the cable crossing should be avoided as much as possible. Where avoidance of crossings is practical, the design of cables and pipelines crossing points should be consulted with fishing industry to ensure their impacts are mitigated.

Our preferred method of cable burial (for export and interconnector cables) is simultaneously trench and burial as pre-lay cables on the seabed pose a snagging hazard to fishing vessels.

Subsea Collectors (SCs)

SFF notes from para 3.5.42 (p47) that an alternative solution for connecting dynamic IACs using Subsea Collectors (SCs) is also being considered. The maximum footprint area of the SC is 25 m X 25 m. Depending on the seabed conditions, the SC may be installed on the seabed through gravity or by using pin piles or anchoring systems. The height of a SC is estimated at 6 m from the seabed. For the Proposed Development there would be between 16 to 20 SCs.

Considering additional spatial footprint and its potential to pose snagging hazard to fishing gears, SFF objects to use of SCs and instead propose the conventional method of IACs connection to be adopted for the Proposed Development (if the project opts for fixed foundation or TLP).

Offshore Substation Platforms

SFF notes from para 3.6.1 (p47) that the Proposed Development may require up to three OSPs which will be located within the Array Area of the Scoping Boundary. Considering the spatial footprint of the OSPs (8,200 m² each), we propose that the design and siting of the OSPs must be consulted with the fishing industry to ensure that they do not overlay prime fishing grounds.

Pre-construction Works - Boulder Clearance

SFF notes from section 3.7 (p51) that the Proposed Development pre-construction activities include boulder and UXO clearance.

Since the relocation of boulders from their natural positions and re-positioning them creates a snagging hazard for fishing vessels, SFF would suggest avoiding the relocation of boulders as much as possible. However, where boulders relocation is unavoidable, we recommend the new locations/coordinates of the relocated boulders should be recorded and shared with fishermen. Fishermen require geographical readings to decimal of a minute format (3 decimal places sufficient) rather than going down to actual seconds and the datum should be WGS84 rather than ED50.

Where potential UXO are identified, SFF would propose that they may either be avoided (e.g. through re-routing or micro-siting) or cleared on land as UXO detonation at sea will have an adverse impact on fish and shellfish and other marine fauna in the area.

Scour Protection

SFF notes from section 3.8 (p51) that Scour protection methods may be utilised to mitigate the likelihood of scour developing, which is likely to include graded rock, although other options including mattresses, and rock bags are included in the PDE. As indicated earlier, SFF objects to the use of concrete mattresses and rock bags in open waters and we propose industry standard graded rocks to be utilised for scour protection.

Wet Storage

The SFF notes from section 3.9 (p52) that there is potential that wet storage may be needed to facilitate construction of the Proposed Development, by the Applicant or ports and/or technology providers. Considering the spatial footprint of wet storage and the potential disruption that they may cause to fishing operations and fishing vessels transiting the area, we propose that the siting of wet storage must be consulted with the fishing industry to ensure its impact on fishers is avoided at the outset.

Decommissioning

SFF notes from section 3.12 (p55), of the SR that the developer is required under Section 105 of the Energy Act 2004 to prepare a Decommissioning Programme for approval by Scottish Ministers. Specific details on the decommissioning activities are not known at this stage of consent but further details will be provided in the Proposed Development EIA Report.

To reiterate our safety concern of fishing vessels, SFF would like to see all development related infrastructures are recovered/removed to shore followed by over-trawl sweeps (seabed sweeps using fishing gears). In addition, the seabed should be restored to its pre-development condition post-decommissioning, and the developer/operator should ensure it is safe for fishing operations to fully resume in the area.

EIA Methodology

SFF is of the view that there are no approved guidelines to set realistic criterion to define the magnitude of impact and sensitivity of receptors for commercial fisheries and referring it to 'expert judgement' would be unrealistic and misleading. Therefore, guidelines need to be adopted in consultation with the fishing industry representatives to address this issue.

In addition, SFF would like to see that the impact of the Development is assessed on individual fishing vessels affected by the Development versus the whole fleet/fishery.

Ch. 9 Benthic Ecology

The following are the SFF's comments on Benthic Ecology chapter:

SFF notes that the 'Impacts to benthic ecology due to heat from subsea electrical cables' has been scoped out. The Applicant has provided references to limited studies on this topic that some show that electrical cables emit heat. As there is no robust scientific evidence to reject the impacts of heat on benthic ecology; therefore, SFF would like to see the 'Impacts to benthic invertebrates due to thermal emissions from subsea electrical cables' to be scoped in. Any temperature change in the invertebrate's habitat would have adverse effects on their behaviour and increase their mortality rate.

We also propose that the 'Removal of hard substrates' during construction should be scoped in as 'seabed preparation' for cabling (IACs, interconnector and export cables) require seabed disturbance of at least (25m width) along each cable. Foundation works also require seabed preparation, based on the size of the foundations, resulting in hard substrate removal.

Ch. 10. Fish and Shellfish Ecology

The following are the SFF's comments on Fish and Shellfish Ecology:

Scoping

The 'impacts to fish and shellfish species due to entanglement' during construction and decommissioning should also be scoped in as construction and decommissioning also take a considerable amount of time (c.5 years for this Proposed Development for construction only).

Cable footprint and Seabed Spawning Grounds Disturbance

SFF furthermore note from sub-section 10.4.14 (p169) that the Scoping Boundary including both the DAA and ECC totally overlaps with the spawning and nursery grounds of some commercially important demersal and pelagic fish species (including, cod, haddock, whiting, herring and sandeel). Therefore, we propose any survey activities and other seabed disturbances should be undertaken outwith spawning and nursery periods of the above-mentioned fish species to avoid juvenile fish mortality.

SFF note from sub-sections 9.4.3 (p128, Benthic Ecology) that the Local Benthic Ecology Study Area seabed is suitable for herring spawning. Therefore, the SFF are concerned about the Development impacts on all commercial value species in the area, especially on the herring which are also particularly sensitive to noise impacts on hearing through the swim bladder. .

We are of the view that any activities on herring spawning habitat are prohibited based on the 'ICES Advice on fishing opportunities, catch, and effort Greater North Sea ecoregion' published 31 May 2024. Therefore, SFF propose the above-mentioned ICES advice to be taken into account and acted upon at determination stage. The link to ICES advice on Greater North Sea herring is provided as follows: [North Sea herring ICES Advice](#) .

Ch. 10. Commercial Fisheries

Following are the SFF's comments on Commercial Fisheries:

Scoping

SFF notes from Table 13.2 (p319) that 'Physical presence of infrastructure and potential exposure of that infrastructure leading to gear snagging' has been scoped in. We agree with this being scoped in; however, since snagging in some limited cases can result in human casualties, we propose that the possibility of a loss of life should also be highlighted as a risk of snagging hazards not just to fishing gear.

Worst Case Scenario

The EIA should take a precautionary approach/worst case scenario by assuming that fishing cannot occur within the floating wind farm.

Data Set/source

SFF appreciates the Applicants commitment to use longer term data in the EIA. We reiterate the importance of pre-Brexit data to be utilised for the EIA Report to present a realistic baseline of fishing activities within the study area, as some types of fisheries such as small haddock have been curtailed post Brexit.

Fishing plotter data from fishermen, SFF and associations should be used as AIS and VMS data do not represent all fishing activities within the study area. In general collection of fishing plotter data (screen shots) from the fisheries organisations, and any specific data from smaller vessels that are not required to use AIS or VMS is recommended.

Proposed embedded mitigation:

- We would appreciate the inclusion of 'the Fisheries Management and Mitigation Strategy (FMMS)' to be developed and adopted pre-consent in consultation with fishing industry to ensure all fishing industry's concerns are considered and addressed accordingly.
- As part of the proposed commitments, there is no measure for disruption payments for fishing vessels. SFF suggest that a cooperation agreement should be considered for both the static and mobile gears where they are required to be relocated, or the impact is deemed to be significant.
- No mention has been made to mitigation once operational and loss of fishing opportunities to the fishing industry within the floating section of the proposed array.
- In relation to 'Development of and adherence to a VMP and NSP), that will include Notice to Mariners (NtM)'. We suggest that NtM are issued in sufficient time to avoid any disruptions to fishing activities in the intended area.
- Utilise the services of an O.F.L.O with sufficient knowledge of fisheries and fishers that utilise the development area.

Ch. 11. Shipping and Navigation

No specific comment.

HRA Screening Report

SFF notes from HRA Screening Report, 'Chapter 7. Summary of LSE' (p193) that some likely significant effects (LSE) as a result of the Proposed Development alone and/or in-combination with other plans or projects have been identified. A total of ten SACs and 105 SPA and Ramsar sites (80 SPAs and Ramsar sites with marine ornithological features, 19 SPA and Ramsar sites with onshore ornithological features and six SPAs and Ramsar sites with both marine and onshore ornithological features) are being taken forward for consideration in the RIAA.

Although, if needed, nature compensation measures would be proposed in RIAA, we would like to reiterate that we oppose any nature compensation measures to offset the environmental damage from offshore wind developments (that impose any type of restriction) on commercial fisheries. 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

Fahim Mohammad Hashimi
Offshore Energy Policy Manager
Scottish Fishermen's Federation

Scottish Water

Friday, 13 September 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



Dear Customer,

Bowdun Offshore Wind Farm
Planning Ref: SCOP-0056
Our Ref: DSCAS-0117587-FK5
Proposal: Scoping Report

Please quote our reference in all future correspondence

Scottish Water has no objection to this proposal. 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.

Next Steps:

All developments that propose a connection to the public water or waste water infrastructure are required to submit a Pre-Development Enquiry (PDE) Form via our Customer Portal prior to any formal technical application being submitted, allowing us to fully appraise the proposals

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,

Angela Allison

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 a 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

Abby Gray
Energy Consents Unit
The Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Your ref:
SCOP-0056

Our ref:
GB01T19K05

Date:
09/10/2024

econsents_admin@gov.scot

Dear Sirs,

**REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT)
(SCOTLAND) REGULATIONS 2017**

**REGULATION 13 AND SCHEDULE 4 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT
ASSESSMENT) (SCOTLAND) REGULATIONS 2007**

**REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT
ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**THISTLE WIND PARTNERS LIMITED (TWP) - BOWDUN OFFSHORE WINDFARM -
SCOTWIND E3 SITE, 38KM OFF ABERDEENSHIRE COAST**

With reference to your recent correspondence on the above development, we acknowledge receipt of the Scoping Report (SR) prepared by RPS in support of the above development.

This information has been passed to SYSTRA Limited for review in their capacity as Term Consultants to Transport Scotland – Roads Directorate. Based on the review undertaken, Transport Scotland would provide the following comments.

Proposed Development

The proposed Bowdun Offshore Wind Farm (OWF) comprises up to 67 turbines, a network of up to 156km of Inter-Array Cables (IACs), up to 35km of Interconnector Cables, Subsea Collectors and scour and cable protection. The site is located approximately 38km at its closest point from the Aberdeenshire coast, and it is proposed that it will make landfall at Benholm, approximately 18km south of Stonehaven. The nearest trunk road to the site is the A90(T).

Assessment of Environmental Impacts

The SR states that the applicant will submit separate applications for the consents, licences, and permissions required for the Offshore and Onshore Infrastructure of the project. Consequently, the SR relates only to the Offshore elements, with a separate report being prepared for the Onshore infrastructure elements.

We can confirm, therefore, that Transport Scotland has no comment to make on the Offshore SR, but we would expect to be consulted on the Onshore application when this is submitted. A formal scoping response in relation to the Onshore elements and their potential impact on the trunk road network will be provided at that time.

I trust that the above is satisfactory but should you wish to discuss any issues raised in greater detail, please do not hesitate to contact me or alternatively, Alan DeVenny at SYSTRA's Glasgow Office can assist on 0141 343 9636.

Yours faithfully

[Redacted]

Iain Clement

**Transport Scotland
Roads Directorate**

cc Alan DeVenny – SYSTRA Ltd.

UK Chamber of Shipping

From: [Eleanor Norris](#)
To: [MD Marine Renewables](#)
Cc: [Abby Gray](#)
Subject: Fw: Thistle Wind Partners Limited - Bowdun Offshore Wind Farm - ScotWind E3 Site, 38km off Aberdeenshire Coast - Scoping Consultation - Response due by 11 October 2024
Date: 15 October 2024 11:42:47
Attachments: [image001.png](#)

Dear Abby,

I hope this message finds you well. Please accept my apologies for the delay in submitting the UK Chamber of Shipping's response to the scoping consultation for the Bowdun Offshore Wind Farm (ScotWind E3 Site). The oversight was unintended, and I hope that our comments can still be considered as part of the scoping opinion.

We have reviewed the scoping report and would like to provide the following feedback on what should be included in the EIA for the proposed project:

UK Chamber of Shipping Response to Bowdun Offshore Wind Farm – ScotWind E3 Site Scoping Consultation

1. Navigational Risk Assessment

The Chamber acknowledges the inclusion of shipping and navigation considerations within the scoping report. We advise that the Environmental Impact Assessment further develop these aspects with a detailed Navigational Risk Assessment. Key considerations should include:

- **Traffic Density and Seasonal Variation:** The NRA should provide a detailed analysis of shipping traffic, accounting for seasonal variations in commercial and recreational vessel activity within the project area. This ensures a comprehensive understanding of year-round navigational patterns and potential interactions with the wind farm infrastructure.
- **Navigational Safety during Construction and Operation:** The EIA should assess the potential risks posed to vessels during both the construction and operational phases, particularly those using nearby shipping lanes. Special attention should be given to risks associated with vessel traffic management during installation and maintenance activities.

2. Emergency Response and Mitigation Measures

Given the offshore location and the scale of the development, the Chamber advises that the EIA fully consider emergency response preparedness:

- **Emergency Anchorage and Refuge Areas:** The EIA should evaluate how emergency anchoring or vessel refuge procedures will be managed within the vicinity of the wind farm, particularly during severe weather conditions. It is essential that there are clear mitigation strategies in place to prevent interference between vessels seeking safe anchorage and the offshore structures.
- **Coordination with Maritime Authorities:** The Chamber recommends close coordination with the Maritime and Coastguard Agency and other relevant bodies to ensure that the emergency response protocols are robust and that navigational safety is not compromised during the project's lifecycle.

3. Environmental Considerations

The Chamber notes the various environmental factors discussed in the scoping report and offers the following comments on issues particularly relevant to shipping:

- **Subsea Noise and Marine Life:** We welcome the scoping of subsea noise impacts on marine mammals and other marine life. The Chamber advises that the EIA examine the potential for noise disturbance during both construction and operational phases, ensuring that appropriate noise mitigation measures are implemented where necessary.
- **Marine Protected Areas (MPAs):** The project's proximity to designated Marine Protected Areas warrants careful consideration. The EIA should include a thorough assessment of the potential impacts on these areas, ensuring that offshore activities do not adversely affect marine biodiversity or ecosystem functions.

4. Cumulative Impact Assessment

The Chamber supports the inclusion of a cumulative impact assessment within the EIA. This assessment should consider the potential interactions between the Bowdun Offshore Wind Farm and other existing or planned offshore projects in the region. Specifically, the EIA should evaluate cumulative impacts on shipping and navigation, ensuring that vessel routes remain unobstructed and navigational risks are minimised.

The UK Chamber of Shipping welcomes the opportunity to contribute to the scoping process for the Bowdun Offshore Wind Farm. We emphasise the importance of comprehensive risk assessments and mitigation measures to safeguard navigational safety and minimise environmental impacts. The Chamber remains available for further discussion or clarification on any of the points raised in this response.

Kind Regards,

Ellie Norris

Policy Manager (Safety)

UK Chamber of Shipping

30 Park Street, London, SE1 9EQ

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[Redacted]

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**Habitats Regulations
Appraisal Screening
Consultation Responses**

Natural England

Date: 23 October 2024
Our ref: 489725
Your ref: SCOP-0056



Marine Directorate – Marine Planning and Policy
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

Natural England
Lancaster House
Hampshire Court
Newcastle-upon-Tyne
NE4 7YH
0300 – 0603900

BY EMAIL ONLY

Dear Judith

Consultation details – THISTLE WIND PARTNERS LIMITED (TWP) - BOWDUN OFFSHORE WIND FARM - SCOTWIND E3 SITE

Location – ScotWind E3 Site, 38km off Aberdeenshire Coast

Thank you for seeking our advice on the Habitats Regulations Assessment (HRA) screening in your consultation which we received on 04 October 2024. The following constitutes Natural England's formal statutory response.

Habitats Regulations Appraisal Screening consultation

- The Conservation (Natural Habitats, &C,) Regulations 1994
- The Conservation Of Offshore Marine Habitats And Species Regulations 2017
- The Conservation Of Habitats And Species Regulations 2017

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). As the application is located in Scottish waters then the advice from NatureScot, the statutory nature conservation body in Scotland should be sought.

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.

The following document has been reviewed for this response

- HRA Screening Report - Bowdun Offshore Wind Farm Habitat Regulation Appraisal Stage 1 Likely Significant Effects Screening Report

Due to our remit, we have restricted our advice to species from English Marine Protected Areas and designated species in English waters.

General advice

We would like to direct the applicant to our advice on the environmental considerations and use of data and evidence to support offshore wind and cable projects in English waters. We recognise this will not all be applicable for all aspects of the project but will provide a guide for assessments concerning England and any modelling / methodology for English sites. Our advice is available here: [Environmental considerations for offshore wind and cable projects - Home \(sharepoint.com\)](#)

Ornithology advice

Auks

Natural England advises the use of the Woodward et al (2019) foraging ranges plus 1 standard deviation for guillemot and razorbill for all colonies when assessing SPA connectivity: 153.7km for guillemot and 164.6km for razorbill.

Natural England advise Biologically Defined Minimum Population Scales (BDMPS) apportioning for non-breeding guillemot and razorbill.

Sabbatical rates

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 and how sabbaticals are best incorporated in a Population Viability Analysis (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.

Stable age apportioning

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 recognizes that these methodologies may differ from those advised by NatureScot.

For any queries relating to the content of this letter please contact me using the details provided below. For any new consultations, or further consultations on this development, please send your correspondence to consultations@naturalengland.org.uk.

Yours sincerely

Bethan Rogers

Role: Marine Lead Adviser

E-mail:

NatureScot

Judith Horrill
Marine Licensing Casework Officer
Marine Directorate Licensing Operations Team
Scottish Government – Marine Laboratory
Aberdeen
AB11 9BD

01 November 2024

Our ref: CNS / REN / OSWF / E3 –
Bowdun – Pre-application

By email only: MD.MarineRenewables@gov.scot

Dear Judith,

BOWDUN OFFSHORE WIND FARM – SCOTWIND E3

NATURESCOT ADVICE ON THE HABITATS REGULATIONS APPRAISAL (HRA) SCREENING REPORT

Thank you for consulting NatureScot on the HRA Screening Report for the proposed Bowdun Offshore Wind Farm array area and Export Cable Corridor (ECC).

We have reviewed the HRA Screening Report (document reference: TWP-BOW-RPS-OFC-RPT-00014 / FINAL) and provide advice, as outlined below, on those European Sites and their qualifying features for which we consider it reasonable to expect a Likely Significant Effect (LSE) either alone or in-combination with other plans or projects. Please note that our advice is specific to the Bowdun proposal.

NatureScot advice

Overall, we are disappointed with the quality of the HRA Screening Report submission. There are substantial issues where our previous advice / guidance has not been followed, as well as a lack of clarity on the approach undertaken. **We advise that the ornithology aspects are revisited and revised once the full 24 months of Digital Aerial Surveys (DAS) are available, including further consultation prior to the submission of the RIAA.**

Annex I Habitats

Section 4.2 sets out the approach used to establish connectivity to European sites for Annex I habitats. As detailed in Paragraph 4.2.5 – 4.2.7, one tidal excursion has been used to estimate the spatial extent of indirect effects associated with the proposal, such as increased suspended sediment concentrations.

Paragraph 4.2.6 states that “*As presented in Section 7: Physical Processes of the Offshore Scoping Report, the tidal excursion ranged from 2.07 km to 3.00 km*”. We have reviewed the EIA Scoping Report

(document reference: TWP-BOW-RPS-OFS-RPT-00004 / FINAL) separately and note that this statement is not consistent with Section 7 of the Scoping Report which refers to a spring Tidal Ellipse buffer modelled as ranging from 6.22 to 9.42 km around the Scoping Boundary. This inconsistency needs to be clarified by the Applicant; however, we note that at this point it does not affect our overall conclusions. We consider the proposed 20 km buffer for indirect effects to be appropriate and suitably precautionary.

Similarly, we note that within the EIA Scoping Report, Appendix D: Marine Protected Area Screening, the Zone of Influence for benthic habitats is again based on a Tidal Ellipse ranging from 6.22 to 9.42 km around the Scoping Boundary. For the MPA Screening this buffer is further extended to 15 km, which differs from the 20 km HRA screening buffer. We highlight this point for consistency, however, note that in this case the same conclusion would be reached using either buffer distance.

Paragraph 4.2.7 of the HRA Screening Report states that no European sites with Annex I habitats fall within the 20 km buffer, and thus concludes that no sites have been screened in for further consideration. We are content with this conclusion.

Diadromous Fish

Consultation to date – Scoping Workshop

An overview of consultation advice regarding Stage 1 LSE Screening is provided in Section 1.6. Table 1.1 includes a summary of previous consultation with NatureScot regarding diadromous fish, covering both the Scoping Workshop (held 25 April 2024) and written advice provided following this workshop (advice issued 04 July 2024 and 11 July 2024). We do not consider Table 1.1 to accurately summarise the advice and comments provided by NatureScot on this topic during either the Scoping Workshop or in our follow-up advice.

Table 1.1 states that *“The results of the Stage 1 LSE Screening Report for European sites with Annex II diadromous fish qualifying features was presented, with NatureScot broadly agreeing with the results presented”*. We do not consider this statement to be correct and refer to the detailed meeting minutes of the Scoping Workshop (final version circulated 22 July 2024) in which it is noted that regarding diadromous fish NatureScot would respond in writing. The finalised meeting minutes capture our written advice (as issued on 04 July 2024); however, the main points of this advice are not summarised within Table 1.1. As such, we repeat our advice issued following the Scoping Workshop and expand upon this to provide background regarding our position on diadromous fish below – see below. Further discussion will be required to confirm any assessment / mitigation requirements with respect to the River South Esk depending on Export Cable and Landfall construction methods.

“With regards to diadromous fish, we advise that there is currently limited knowledge of the distribution and behaviour of diadromous fish species in the marine environment, including connectivity to individual SACs and as such impacts should be assessed through EIA only and not through HRA. However, an exception to this would be where there is clear connectivity and potential route to impact between a development and an individual SAC due to, for example, close proximity to infrastructure such as the Export Cable Corridor or landfall. Therefore, there may be a requirement to further consider particularly the River South Esk SAC in respect of the Bowdun export cable and landfall. We would welcome further discussion on this topic as more detail becomes available regarding landfall and the methods/techniques to be used”.

Background

There is limited knowledge of distribution and behaviour of diadromous fish species in the marine environment. For example, the precise migration routes of adult or juvenile Atlantic salmon or direction

taken by migrating adult European eels is not fully known. Published information indicates that European smelt and River lamprey are primarily, though probably not exclusively, associated with estuarine environments. Shad might also prefer estuarine environments.

Furthermore, for some species, like seals, we have a reasonable understanding of connectivity to individual SACs. We also have population estimates for nearly all seal SAC populations in the standard data forms which forms part of the citation package. For diadromous fish species we do not have population data for any salmon or lamprey SAC on the data forms.

This inability to understand connectivity to and within individual rivers to the development area, currently prohibits an informed assessment of the impact on individual site integrity. This is a necessary step within HRA assessment process.

The updated ScotMER evidence map¹ process for diadromous fish confirms these evidence gaps, particularly with respect to spatial and temporal distribution as well as uncertainty around migration routes, potential impact pathways and connectivity to protected sites. The ScotMER process is an important vehicle for helping to address these evidence gaps and uncertainties. We specifically welcome the ScotMER project *Diadromous Fish in the Context of Offshore Wind – Review of Current Knowledge & Future Research*, due to be published soon.

This research may change conclusions on how diadromous fish are treated in both EIA and HRA going forward. However, we advise, based on evidence currently available to us, it is not possible for us to carry out an assessment of diadromous fish to the level required under HRA. We therefore advise that diadromous fish species should be assessed through EIA only and not through HRA.

Marine Mammals

The approach used to identify European sites with relevant marine mammal features, as outlined in Section 4.4, is not clearly explained. For marine mammals we would expect a buffer approach to be taken, rather than solely relying on sightings from Digital Aerial Surveys (DAS). This is because of the snapshot nature and the ornithological focus in the design of DAS which could potentially result in some marine mammal species being missed, particularly for the export cable corridor. Despite this, all sites that we would have expected are included in Table 4.2 regardless.

Seals

For grey seals, we advise screening in SACs for assessment if the project site/impact radius is within 20 km of the SAC. Although grey seals can and do forage considerable distances, the Conservation Objectives for grey seal SACs are related to the protection of the breeding colony. During this sensitive time, grey seals (especially females) do not travel further than about 20 km. Outside the breeding season the number of grey seals present can dramatically decrease at the site. There is evidence to show that grey seals may not forage close to the SAC outside the breeding season and instead can travel to different management units (Carter et al, 2022).

For harbour seals, we advise screening in SACs for assessment if the project site/impact radius is within 50 km of the SAC. Ranges further than this should also be considered if there is other information (e.g. tagging data, photo-ID data) to suggest that SAC animals travel to the project area.

We are content that the Firth of Tay and Eden Estuary SAC is included for harbour seal, given the site lies approximately 42.3 km from the proposed Export Cable Corridor (ECC). However, we advise that

¹ <https://www.gov.scot/publications/diadromous-fish-specialist-receptor-group/> – published 26 January 2023

the Isle of May SAC and Berwickshire and North Northumberland Coast SAC (BNNC) can be screened out of further assessment. Although we note the cross-border nature of the BNNC SAC and acknowledge that advice from Natural England may be required regarding the English portion of the BNNC SAC.

Cetaceans

For cetaceans, we generally expect a 100 km connectivity buffer to be applied initially, subject to species and impact specific considerations.

We agree that the Moray Firth SAC should be screened in for bottlenose dolphin. While there is no direct overlap between the proposed ECC and the Moray Firth SAC, designated for its bottlenose dolphin qualifying feature, we know from photo ID studies that bottlenose dolphins from this SAC are regularly sighted along the East coast of Scotland, and can be found some 200 km south in the Tay Estuary and St Andrews Bay area, as well as the Firth of Forth (Hague et al. 2020) and beyond. These sightings are restricted to coastal areas, mainly within the 20m depth contour. There is therefore potential for connectivity with the ECC and as such we agree that the Moray Firth SAC should be screened into the RIAA.

We advise that all other sites, as per Table 4.2, including those designated for harbour porpoise, can be screened out from further assessment; noting that advice should be sought from Natural England for sites in English waters.

Impact pathways

Table 5.3 details the potential impacts on marine mammal features.

For injury and disturbance from subsea noise generated during site investigation surveys, we disagree that there is no potential for LSE on marine mammal features. We understand site-investigation surveys will include noise-emitting activities in both the ECC and array area. The Firth of Tay and Eden Estuary SAC is approximately 42.3 km from the ECC, falling within the 50 km connectivity range for harbour seal. As discussed above, the bottlenose dolphin feature of the Moray Firth SAC is known to be wide-ranging and are regularly sighted near to shore along the East coast of Scotland. We consider any noisy activities associated with the ECC to also have the potential to cause injury and/or disturbance to the bottlenose dolphin feature. Without further survey detail (i.e. location, duration, equipment type, frequency, sound pressure information, proposed mitigation, etc) at this stage, we highlight that the noise-emitting equipment used in site investigation surveys have the potential to cause injury and/or disturbance. As such, this impact pathway should be screened in for both the Firth of Tay and Eden Estuary SAC and the Moray Firth SAC.

In addition, for injury and disturbance from subsea noise generated during vessel use and other activities (e.g. dredging, trenching, rock placement, etc), we disagree that there is no potential for LSE on bottlenose dolphin for the Moray Firth SAC. We consider that most of these activities will occur along the ECC, and therefore refer to our advice above regarding the bottlenose dolphin feature of the Moray Firth SAC.

Injury due to entanglement is screened out for construction and decommissioning phases. **For Bowdun, we advise that entanglement can be screened out during all phases.** This is because moorings and dynamic cabling are located within the array area which is beyond the connectivity distances outlined above for seals, please also note our advice above regarding harbour porpoise SAC's.

We welcome the inclusion of changes in prey availability as an impact pathway, noting that potential for LSE is concluded for the construction phase only. **However, we consider that there is also potential for**

LSE during the decommissioning phase, as impacts will be similar to construction, and the operation and maintenance phase, due to indirect impacts from EMF on prey species.

Please note that our advice above regarding Table 5.3 also has relevance to Table 5.4 (LSE Matrix for UK SACs with Seal Qualifying Features) and Table 5.5 (LSE Matrix for UK and Transboundary SACs with Cetacean Qualifying Features).

Transboundary impacts

Paragraph 4.4.17 considers transboundary sites and we are content that they will not be assessed further due to the distances from the proposed development and lack of evidence for any connectivity (see also Table 5.5).

Onshore Annex II species

We are content with the conclusions regarding onshore Annex II species, as discussed in Section 4.5. This is in-line with advice that we issued regarding bats and otters following the Bowdun Scoping workshop (advice sent 04 July 2024). We note that an Onshore Stage 1 LSE Screening will be submitted to Aberdeenshire Council separately to this Offshore Stage 1 LSE Screening Report.

Ornithology

Sites designated for marine ornithological features are discussed in Section 4.6. The HRA Screening for ornithology is based on only 12 months of DAS. The Screening report acknowledges that once the full 24-month dataset is available, it will be analysed and included in the RIAA; with the potential for additional key species and sites to be identified, which are not included in the HRA Screening Report. Whilst we are generally content with this approach, **we advise that the ornithology aspects are revisited and revised once the full 24 months of Digital Aerial Surveys (DAS) are available, including further consultation prior to the submission of the RIAA.**

In order to ensure that a full picture of how birds are interacting with the array footprint is understood, we do not support screening out of any sites/features before the data from the full two years of survey work is available.

Screening of breeding colonies in the breeding and non-breeding season

The qualifying features of an SPA are protected both within and outwith the SPA throughout the year, irrespective of the season for which they qualified as a feature. As such, any HRA will require assessment of SPA populations both during the breeding and non-breeding season.

Please note that any named component species of a seabird assemblage are protected in their own right, with the main component species characterising the particular assemblages that have been designated. In Scotland, the current practice is that the existence of the assemblage is acknowledged as a qualifying feature on the citation but the SPA conservation objectives are set for individual component (named) species rather than the assemblage. Therefore, the features should be assessed and any impacts concluded at the individual species level.

Paragraph 4.6.14 correctly states that guillemot are more likely to stay within the vicinity of their breeding colonies and therefore the non-breeding population is defined as the breeding population within the mean maximum foraging range. This also applies to herring gull (Furness, 2015). There are other species, such as shag and cormorant, whose movements in the non-breeding season are quite limited, which may affect their connectivity for some SPAs.

Table 4.6 (European Sites Designated for Marine Ornithological Features Taken Forward for the Assessment of LSE – Breeding Seabird Colony SPAs and Ramsar Sites) details the breeding seabird colonies assessed during both the breeding season and non-breeding season. Non-breeding season connectivity should be based on BDMPS (Furness, 2015); the percentage contribution of different SPA populations to the BDMPS; species ecology; and the species recorded in the full 24 months of DAS. At this stage the full survey data is not available, so it is important not to exclude species prematurely on that basis.

For relevant species there is the potential for non-breeding season connectivity for any of the SPA populations for which breeding season connectivity is established. The potential for connectivity with SPA populations during the non-breeding season should be considered based on the contribution of these SPA populations to the relevant BDMPS population and, in some cases, species ecology.

For some species, connectivity between specific SPA populations during the non-breeding season can be excluded on the basis of the negligible contribution of these populations to the overall BDMPS population. Information is provided on this in Tables 4.4 and 4.5, but this does not appear to have been applied in the screening process. For example, Ailsa Craig SPA is included in Table 4.6 for herring gull, kittiwake and lesser black-backed gull. This site is located off the south-west coast of Scotland and for all the species listed there is negligible contribution to the UK North Sea BDMPS, as the relevant BDMPS region for this proposed development.

It is also possible to consider some sites/species in terms of species behaviour. For example, herring gull at St Abbs Head to Fast Castle SPA - herring gulls in Britain do not migrate and show only limited dispersal with most adults remaining close to their breeding sites throughout the year. As a result, connectivity with this SPA is highly unlikely. The same also applies for shag which does not move far from breeding colonies in winter and tends to remain close to the coast.

We have found Table 4.6 confusing to follow in terms of the information it presents, most notably:

- Column 8 'Additional qualifying marine ornithological features (not screened in under Criterion 2)' lists species associated with each SPA that are screened out, however, it is not clear whether these have been screened out based on no connectivity in the breeding season, or no connectivity in the non-breeding season as well. Not all the remaining features are listed here.
- Column 8 excludes features that may need to be screened in during the non-breeding season., as there is potential for connectivity with a greater range of qualifying features from breeding seabird colony SPAs during the non-breeding season (see further advice on this point below).

In addition to the comments above around presentation, we also raise the following points around specific sites in Table 4.6:

- Forth Islands SPA and St Abb's Head to Fast Castle SPA – we assume guillemot has been screened in via connectivity to the ECC (proposed development), based on the foraging range of 95.2 km.
- At St Abb's Head to Fast Castle SPA (117.2 km from the array area) - razorbill is not assessed in the breeding season, despite being within foraging range (122.2 km).
- Although in English waters, we note that for the Flamborough and Filey Coast SPA kittiwake are only assessed in the non-breeding season despite being in foraging range in the breeding season.
- There seems to be some inconsistency between both Table 4.6 and Table 4.7 (European Sites Designated for Marine Ornithological Features Taken Forward for the Assessment of LSE – Migratory Seabird SPAs) regarding the screening of specific species. For example, the rationale for including shag across both tables is unclear.

There are also sites/species omitted from the various tables, for example:

- Arctic Skua – the proposed development is outwith the foraging range for arctic skua at all SPAs in the breeding season. However, arctic skua may need to be assessed in the non-breeding season for several SPAs, as birds could pass through the array area on spring and autumn migration, as noted in Table 4.4. These include West Westray, Hoy, Rousay, Foula, Fair Isle, Fetlar and Papa Westray SPAs. Only Papa Westray is included in Table 5.7 and Table 7.2. We note that only one arctic skua was recorded in the first year of survey, depending on the results from the second year, this species may not need to be included at these sites once all the survey data has been analysed, but at this stage it cannot be excluded.
- Terns – for a range of SPAs, terns have been screened out in the non-breeding season and not included as migratory species either, though there is clearly potential for them to have connectivity with the development during migration.

Tables 4.6 and 4.7 will need to be revisited and revised in light of our advice above. We would expect a better explanation of the non-breeding season screening than is provided, including reasoning for screening in/out specific qualifying species/SPAs.

Migratory seabirds

Both Table 4.7 (European Sites Designated for Marine Ornithological Features Taken Forward for the Assessment of LSE – Migratory Seabird SPAs) and Table 4.8 (European Sites Designated for Onshore Ornithological Features Taken Forward for the Assessment of LSE) consider migratory birds and it is unhelpful that some SPAs appear in both Tables for different species, e.g. Inner Moray Firth SPA, Firth of Tay and Eden Estuary SPA and Firth of Forth SPA. This should be presented more clearly in the RIAA.

Migratory waterbirds

Within Paragraph 4.6.19, it is outlined that as part of the EIA a migratory collision risk model will be undertaken. Paragraph 4.6.19 goes on to state that *“It’s considered proportionate to apportion the predicted impacts from this model to the closest colonies. Therefore, to limit the scope of this Stage 1 LSE Screening report, only the sites within the vicinity of the proposed development are included, this is limited to SPAs on the east coast of Scotland and the north-east coast of England”*.

We note that a number of migratory waterbird sites are not included in Table 4.8 and no clear justification has provided for this omission. In Paragraph 4.7.9 it is stated that the list of SPAs may be subject to change between the submission of the Stage 1 LSE Screening Report and the submission of the RIAA. We advise that this list is re-visited.

In undertaking the assessment for migratory waterbirds, we advise that the recently published Offshore wind – birds on migration in Scottish Waters: strategic review² will be useful for offshore wind farm projects and should be considered. The project consisted of three work packages:

1. Strategic review of birds on migration in UK waters - this review has been published.
2. Develop a stochastic CRM tool for migratory species - the mCRM tool can be found on GitHub but has not yet been formally published by Marine Directorate.
3. Strategic assessment of migrant collision risk at Scottish and sectoral marine plan regional level under various scenarios. This will use the information from the work package one review within the mCRM tool. This is currently under revision and is not yet available.

² <https://www.gov.scot/publications/strategic-study-collision-risk-birds-migration-further-development-stochastic-collision-risk-modelling-tool-work-package-1-strategic-review-birds-migration-scottish-waters/pages/3/>

Marine Directorate should be contacted for any further clarification regarding this strategic review and the work packages noted above. If the outstanding work packages are not available within the Bowdun project timescales then we advise that further discussion will be required.

Marine SPAs and non-breeding seabirds

Within Paragraph 4.6.22, the Applicant outlines that a 15 km buffer is applied around the proposed development to identify marine SPAs which have connectivity, citing NatureScot Guidance Note 4. We highlight that as outlined in Guidance Note 4, there is an exception to the 15 km buffer whereby we recommend that for wintering gulls (excluding Little Gull) breeding foraging ranges in Woodward et al., (2019) should be used.

Any potential construction and operational vessel routes and their proximity to any marine SPAs needs to be considered before No LSE can be concluded.

For marine SPA's, screening should consider the following:

- Will the proposed development have a direct impact on relevant SPA populations, e.g. by vessels passing through the SPA between ports and the array.
- Will qualifying species fly through the array area on their migration routes to winter at the SPAs.

If vessels are likely to transit through marine SPA's, such as the Outer Firth of Forth and St Andrews Bay Complex (OFFSAB) SPA or the Moray Firth SPA, we advise that vessel disturbance between the development site and the port is included as a potential impact pathway. The assessment process for vessel disturbance at these sites should include the following:

- information on likely vessel routes, lie up/sheltering areas, numbers of vessel trips, types of vessels;
- information on existing vessel traffic and the increase in traffic resulting from the proposed development;
- sensitivity of qualifying features to vessel disturbance;
- bird densities and distribution of sensitive species throughout the SPA and consideration of how potential vessel traffic may impact on areas of higher bird densities;
- extent of the SPA and degree of SPA populations likely to be affected by the vessel traffic;
- reference to a Vessel Management Plan and any embedded mitigation measures in the plan that are relevant to birds;
- any additional ornithology mitigation measures specific to this impact.

Impact pathways

Table 5.6 details the potential impacts on marine ornithological features. **Disturbance to birds from the presence of vessels during all phases, particularly from construction/decommissioning works, is not included in this table.** This should include vessels transiting between the proposed development site and ports.

Should floating design be pursued, we advise that entanglement risk for diving seabirds should be screened in.

Table 5.7 presents an LSE Matrix for SPAs with marine ornithological features, in addition to our advice above we have the following comments:

- **Fulmar** – fulmar have not previously been assessed in projects due to being at lower risk for both collision and displacement. However, they have now started to be included in some assessments particularly due to proximity to breeding colonies and concerns with barrier effects. We

recommend revisiting the assessment of distributional responses for fulmar and considering whether this information is relevant for the proposed development. As fulmar generally have not previously been assessed in other applications it may not be possible to undertake a cumulative assessment for this species, but we welcome the addition to the screening process. We note that potential LSE has been concluded for collision, direct habitat loss during construction and decommissioning stages, and disturbance to prey species and their habitats for a number of sites.

- **Storm petrel, Leach’s storm petrel, Manx shearwater** – attraction to light may occur during the construction and decommissioning phases as well as the operational phase, as lighting is not restricted to the operational phase. As well as impacts from turbine lighting, there could be impacts from lighting on servicing or construction vessels, especially if construction will be a 24/7 operation. We note inconsistencies as to how this is applied (e.g. Auskerry SPA and storm petrel feature).
- **Great skua** – this species should be assessed for collision risk.
- **Arctic skua** – this species can only be assessed as a migratory species vulnerable to collision (see above).
- **Red-throated diver** – there is inconsistency in the way red-throated diver impacts are considered at different sites. For most sites (apart from possibly marine SPAs), connectivity can only be in the non-breeding season whilst birds are on migration and therefore collision would be the key impact pathway.
- As stated above, **herring gull** post-breeding dispersal generally occurs within relatively small home-ranges (O’Hanlon et al., 2022) and in a southerly direction (Furness, 2015). Therefore, individuals from sites such as Alde-Ore Estuary SPA in England (558.0 km straight-line distance, 625.1 km by-sea distance from the project site) are unlikely to overlap with the OAA in the non-breeding season. Although not a Scottish site, it raises questions around biological realism considered within the Screening Report.

Summary of LSE

Section 7 of the Screening Report provides a summary of the European sites and qualifying features that are proposed to be taken forward for consideration in the RIAA. Our ornithology advice provided above will have implications for the summary provided in Table 7.2. In addition, we highlight the following comments regarding Table 7.2:

- Table 7.2 states the distance to the proposed development. We understand the proposed development to include both the ECC and array area (as described in the glossary), however this is somewhat unclear in Table 7.2, particularly as Table 7.1 (for Annex II Diadromous Fish and Shellfish and Annex II Marine Mammals) defines the distances to both the ECC and array area separately.
- The use of colour coding and merged cells in Table 7.2 has not been explained and appears to be inconsistent. Some impact cells were repeated within a merged block.
- Some sites are significantly far away from the proposed development and yet have been screened in for species far outwith biological realism (e.g. Skomer, Skokholm and the Seas off Pembrokeshire SPA which is located in a different BDMPS region).
- Fulmar should have potential for LSE for displacement and barrier effects, as stated above.

In-combination assessment

An overview of the in-combination assessment process is provided in Section 6, which seems appropriate. However, we cannot comment further due to the lack of detail provided. This will require further discussion.

Further information and advice

We hope this advice is of assistance, noting that there are aspects where some further engagement is required to assist in preparing the RIAA.

Please contact me in the first instance for any further advice, using the contact details below, copying to our marine energy mailbox – marineenergy@nature.scot.

Yours sincerely,

Clare McCarty

Marine Sustainability Adviser – Sustainable Coasts and Seas

Royal Society for the Protection of Birds



Judith Horrill
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15th November 2024

Dear Judith,

**THISTLE WIND PARTNERS LIMITED (TWP) - BOWDUN OFFSHORE WIND FARM -
SCOTWIND E3 SITE**

**HABITATS REGULATIONS APPRAISAL SCREENING REPORT UNDER THE
CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 1994, AND THE
CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017**

Thank you for consulting RSPB Scotland on the above HRA Screening Report. Apologies that this response reaches you some time after the consultation closing date, but RSPB Scotland has been unable to respond to all such consultations within the specified timeframes due to capacity constraints.

We understand that the HRA Screening Report covers offshore elements of the proposed development and that the proposed development will comprise up to 67 fixed bottom or floating turbines, with a nominal capacity of to be confirmed depending upon exact turbine numbers and size, along with associated infrastructure. including transmission cabling, and with the final type, number and layout of the turbines to be confirmed at detailed design stage, post consent. We could not see the consent period being sought for the windfarm but understand from a recent meeting with the project team that the modelling period for bird related effects is based upon a time span of up to 50 years.

Faced with the threats of climate change to the natural world, RSPB considers that a low-carbon energy transition to reach net zero is essential to safeguard biodiversity. Inappropriately designed and/or sited developments can however cause serious and

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irreparable harm to biodiversity and must be avoided. We understand that consideration is being given to incorporating Marine Biodiversity Enhancement requirements into National Marine Plan 2 and, depending on application submission timeframes, this potential requirement should also be considered.

We have reviewed the screening report in this context and provide the following comments.

General Comments

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. 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).

RSPB Scotland encourage the adoption of a precautionary approach to the identification of relevant protected sites for seabirds with clear methodology on the exclusion of sites and species. We generally agree with the collection and analysis methods advised by NatureScot, with some exceptions as set out below. We recommend use of the guidance notes available on their website to inform assessment. If an Applicant chooses to undertake supplementary modelling using alternative parameters to that recommended, we suggest this is clearly labelled.

As set out in Searle et al (2023)¹, 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 dynamic marine environment.

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.

The precautionary principle requires the Applicant to demonstrate with scientific certainty that something would not be harmful. The concept of something being overly

¹ Searle, K. R., S. H. O'Brien, E. L. Jones, A. S. C. P. Cook, M. N. Trinder, R. M. McGregor, C. Donovan, A. McCluskie, F. Daunt, and A. Butler. "A framework for improving treatment of uncertainty in offshore wind assessments for protected marine birds." *ICES Journal of Marine Science* (2023): fsad025.

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precautionary dismisses the inherent uncertainty in modelling and overlooks the simplistic version of reality that the modelling captures.

Detailed Comments

Given the apparent intention to confirm the final type, number, and layout of the turbines to be installed at detailed design stage, post consent, RSPB Scotland assumes that any assessments submitted in support of the application will reference the 'worst case scenario' when it comes to identifying LSE.

We welcome the apparent screening in of all appropriate seabird species at this stage.

We note paragraph 4.6.2, and that the screening is not informed by 24 months of survey work.

Due to capacity constraints, we have not been able to interrogate every detail in the numerous tables included in the Screening Report.

The last sentence in paragraph 4.6.19 is confusing, in that it appears to be at odds with / to contradict the inclusion of SPAs in Lincolnshire / Norfolk in Table 4.8 for example, which are not areas RSPB Scotland would consider to be on the north-east coast of England. However, we note that paragraph 4.7.9 refers to 'east coast SPAs', so assume that paragraph 4.6.19 was perhaps just loose with wording. In any case, paragraph 4.6.19 should be clarified.

Noting, and welcoming the screening in of Fulmar, and noting Table 5.7, RSPB Scotland would welcome the inclusion of distributional responses as an impact for Fulmar, in particular in the consideration of in-combination impacts. We acknowledge that this is not something that has usually been considered for this species, mainly due to their large foraging range. However, the scale of proposed development in the ScotWind leasing round may mean that this becomes an emerging issue, and RSPB Scotland would welcome its consideration.

Noting, and welcoming the screening in of European and Leach's Storm Petrel, and Manx Shearwater, and noting Table 5.7, RSPB Scotland notes the potential for low numbers to be recorded during surveys. As highlighted in Deakin et al. 2022, Digital Aerial Surveys (DAS) are likely to have inherent biases in the counts of these species. The first of these biases is related to the small size and consequent detectability of these species, particularly when on the water surface. Furthermore, both species are active throughout the diel cycle, with different levels of activity depending on location and behaviour. As DAS flights are typically restricted to the middle of the day the results are potentially biased against birds active on the site during the nighttime or crepuscular hours. All these species can be subject to attraction to light (such as those

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on turbine nacelles) and subsequent disorientation, (Deakin et al. 2022²) Such attraction, and subsequent disorientation, could have both direct and indirect impacts on these species. Direct impacts would be collision of birds that have altered their flight trajectory to enter the rotor swept zone, and it is most likely best considered by amended collision risk models. Indirect impacts could be through the energetic consequences of additional flight, which could result in subsequent mortality or reduced breeding performance. RSPB Scotland would welcome discussion with the Applicant as to a suitable methodology for this assessment.

RSPB Scotland would also welcome inclusion in Table 5.7 or elsewhere of consideration of the potential wider ecosystem impacts that may arise through the construction and operation of the wind farm³. These could occur, for example, through changes in water column stratification arising from the presence of the wind farm ultimately altering the availability of prey to seabirds.

RSPB Scotland welcomes the numerous references in the Screening Report to NatureScot guidance, (for example the reference in paragraph 4.6.17), and advises that the applicant continues to adhere to such guidance in assessing the likely significant effects of the proposed development.

Should you require any further information or clarification, please do not hesitate to get in contact.

Yours sincerely,

Andrew Tait
Senior Conservation Planner, RSPB Scotland

² Deakin, Z., Cook, A., Daunt, F., McCluskie, A., Morley, N., Witcutt, E., Wright, L. and Bolton, M., 2022. A review to inform the assessment of the risk of collision and displacement in petrels and shearwaters from offshore wind developments in Scotland.

³ Isaksson, N., Scott, B.E., Hunt, G.L., Benninghaus, E., Declerck, M., Gormley, K., Harris, C., Sjöstrand, S., Trifonova, N.I., Waggitt, J.J. and Wihsgott, J.U., 2023. A paradigm for understanding whole ecosystem effects of offshore wind farms in shelf seas. *ICES Journal of Marine Science*, p.fsad194.

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