Aberdeen City
Council

| | |
|---|---|
| **From:** | Richard Brough |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); Morrison S (Stephanie) |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 03 June 2023 |
| **Date:** | 21 April 2023 10:32:02 |
| **Attachments:** | image001.png |

Dear Lauren

Thank you for the opportunity to review the proposal.

Having reviewed the documents and consulted with colleagues in Development Management, the Climate and Environment Policy team and the Local Development Plan team, the Council is of the opinion there are no significant impacts of concern for Aberdeen City Council to consider.

Kind 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 522435 Mobile: [Redacted] | Switchboard: 01224 523 470
www.aberdeencity.gov.uk | Twitter: @AberdeenCC | Facebook.com/AberdeenCC

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

Direct Dial: 01224 522435 Mobile: [Redacted] | Switchboard: 01224 523 470
www.aberdeencity.gov.uk | Twitter: @AberdeenCC | Facebook.com/AberdeenCC

**From:** MS.MarineRenewables@gov.scot <MS.MarineRenewables@gov.scot>

**Sent:** Friday, February 3, 2023 1:49 PM
**To:** MS.MarineRenewables@gov.scot
**Cc:** Lauren.Cowan@gov.scot; Stephanie.Morrison@gov.scot
**Subject:** Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 03 June 2023

Dear Sir/Madam,

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

**MARINE (SCOTLAND) ACT 2010**
*The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017*

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

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST.**

On 20 January 2023, Green Volt Offshore Wind Ltd ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate Green Volt Offshore Windfarm and associated transmission infrastructure located east of the Aberdeenshire coast. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application.

Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from:

Green Volt Offshore Windfarm | Marine Scotland Information

There are four application pages, as follows:

- Section 36 Consent – Green Volt Offshore Windfarm – East of Aberdeenshire Coast
- Marine Licence – Green Volt Offshore Windfarm – Generating Station – East of Aberdeenshire Coast – 00010230
- Marine Licence – Green Volt Offshore Windfarm – Offshore Transmission Infrastructure (1 of 2) – East of Aberdeenshire Coast – 00010231
- Marine Licence – Green Volt Offshore Windfarm – Offshore Transmission

Infrastructure (2 of 2) – East of Aberdeenshire Coast – 00010232

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MS.MarineRenewables@gov.scot, no later than **03 June 2023**. If you are unable to meet this deadline please contact the Marine Scotland Licensing Operations Team ("MS-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MS-LOT will assume a 'nil return'.

Kind regards,

Lauren

Lauren Cowan
Casework Officer - Consenting
(she/her)

**Marine Scotland** - Marine Planning & Policy
Scottish Government | Marine Scotland | 5 Atlantic Quay | 150 Broomielaw | Glasgow | G2 8LU

Email: lauren.cowan@gov.scot
Mobile: [Redacted]
Website: http://www.gov.scot/Topics/marine/Licensing/marine

My normal working pattern is 8-16, Monday to Friday.

Email addresses for Marine Scotland - Licensing Operations Team( MS-LOT) are MS.MarineRenewables@gov.scot for marine renewables correspondence or MS.MarineLicensing@gov.scot for all licensing queries.

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# Aberdeen International Airport

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|---|---|
| **From:** | #ABZ Safeguarding |
| **To:** | MS Marine Renewables |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023 |
| **Date:** | 24 February 2023 09:05:46 |
| **Attachments:** | image276927.png<br>image672021.png<br>image572037.png<br>image226256.png<br>image266850.png<br>image015143.png<br>image922377.png<br>image422821.png |

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This proposal is located outwith our consultation zone. As such we have no comment to make and need not be consulted further.

Kind regards

Kirsteen

**Aberdeen International Airport**

**#ABZ Safeguarding**
abzsafeguard@aiairport.com
www.aberdeenairport.com

Aberdeen International Airport Limited, Dyce, Aberdeen, AB21 7DU

CURRENT HOLDER OF FOLLOWING AWARDS

• **Scottish Airport of the Year 2022.**

Angus Council

| | |
|---|---|
| **From:** | Stephanie G Porter |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); Morrison S (Stephanie) |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 03 June 2023 OUR REF: 23/00078/S36 |
| **Date:** | 22 February 2023 10:35:17 |

Dear Sir/Madam,

**ELECTRICITY ACT 1989**
**MARINE (SCOTLAND) ACT 2010**
**MARINE AND COASTAL ACCESS ACT 2009**

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST.**

I refer to the above consultation(s) and having reviewed the submitted information in so far as potential impacts on Angus, as the development lies some distance from Angus, the potential for direct impacts within the Local Authority area is limited. Therefore Angus Council has no objection to the proposed development.

Yours sincerely,

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

BT

| | |
|---|---|
| **From:** | radionetworkprotection@bt.com |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); Morrison S (Stephanie) |
| **Subject:** | Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023 WID12091 |
| **Date:** | 15 February 2023 09:49:51 |
| **Attachments:** | image001.png<br>image002.png<br>image003.png |

OUR REF:- WID12091

Good morning Lauren

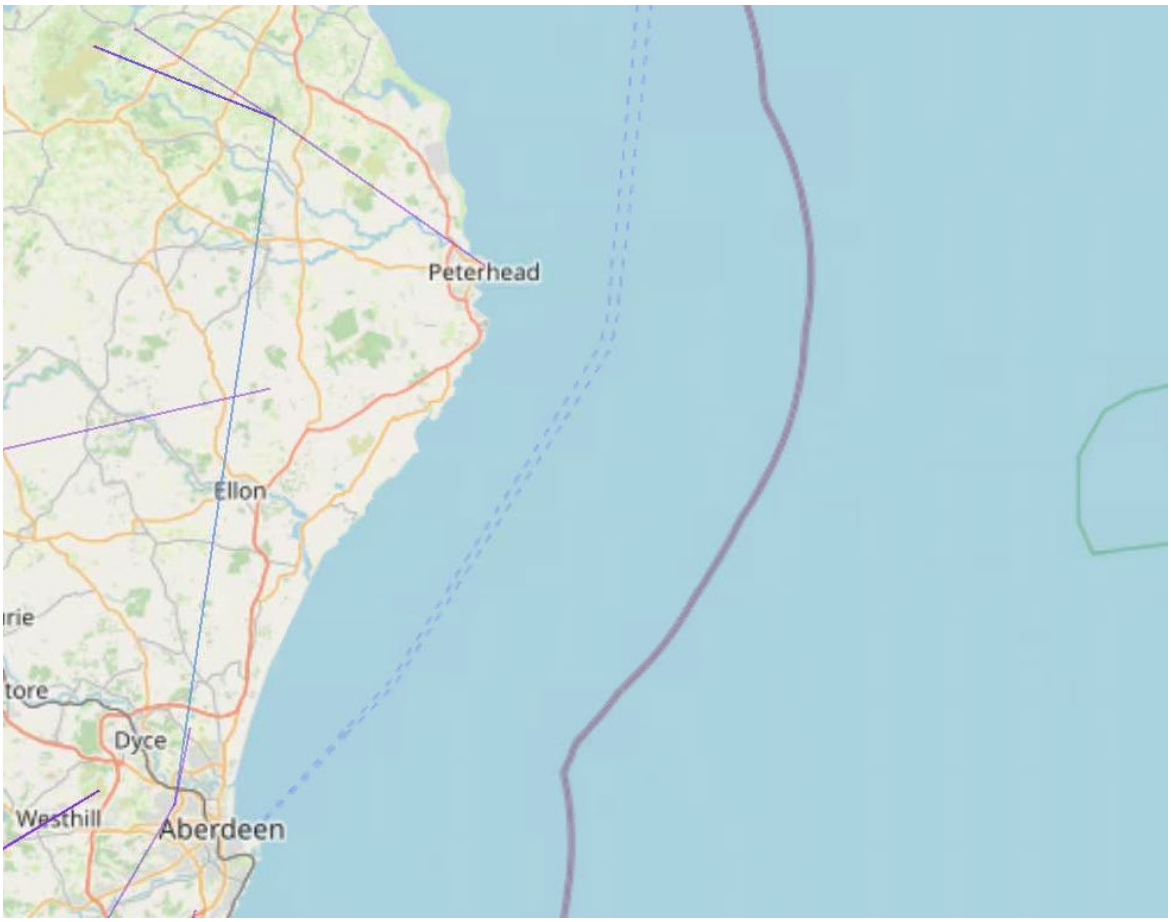
Thank you for your email dated 03/02/2023.

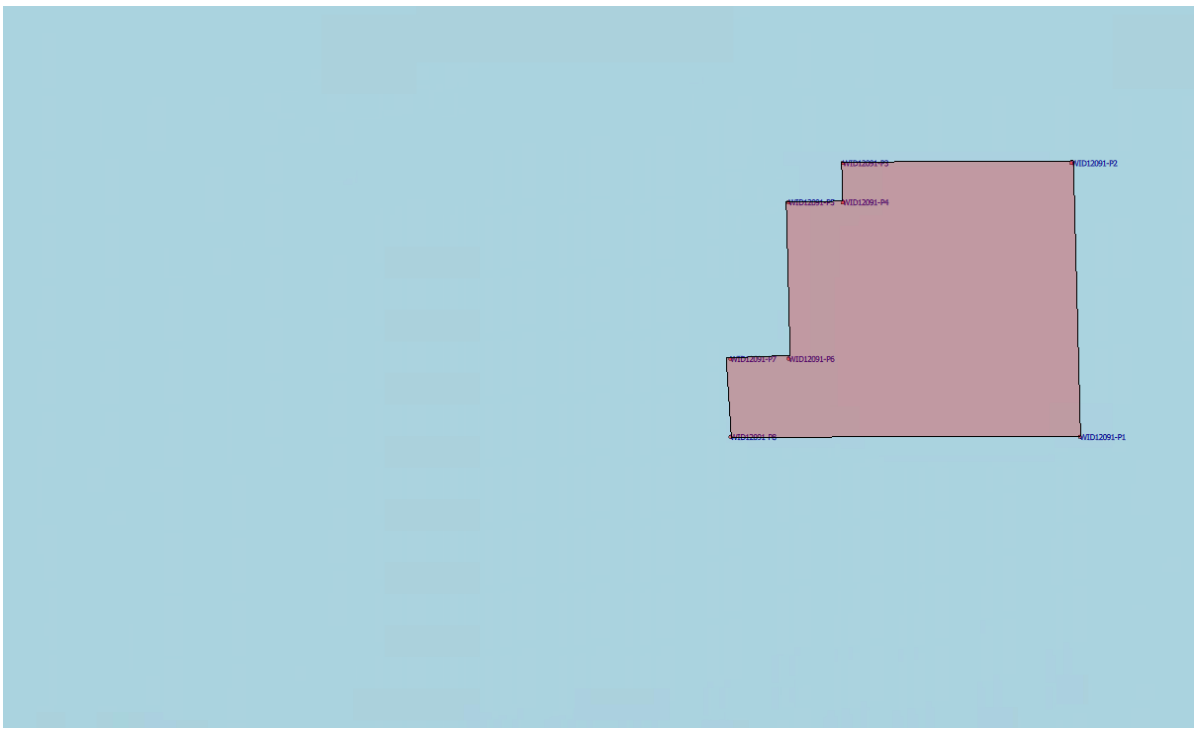
We have studied the proposed windfarm development, with respect to EMC and related problems to BT point-to-point microwave radio links.
The conclusion is that, the Project indicated should not cause interference to BT's current and presently planned radio network.

Kind Regards
Chris

Grid-ref's used

1 488508 883509
2 487934 894478
3 478785 894288
4 478816 892719
5 476652 892677
6 476772 886405
7 474439 886362
8 474497 883226


Peterhead
Ellon
Dyce
Westhill
Aberdeen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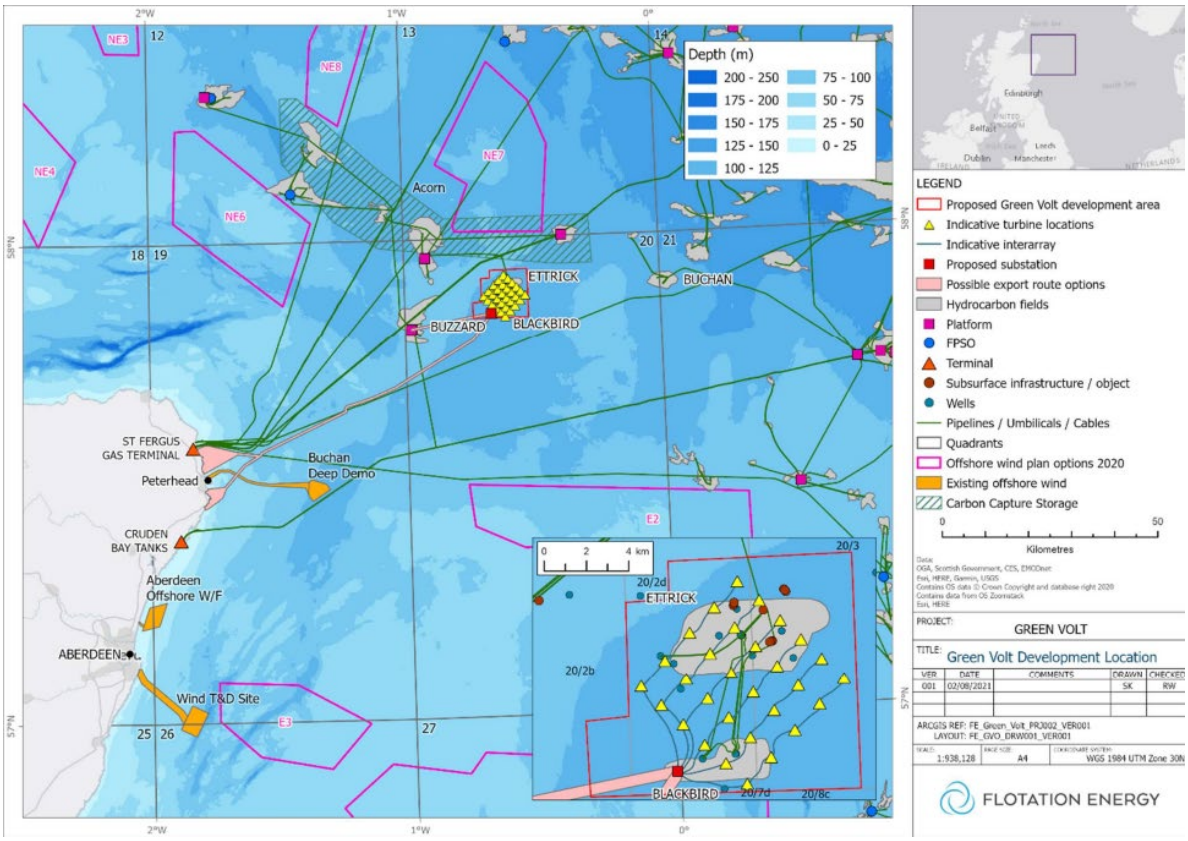
WID12091-P1


2°W
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NE3
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Depth (m)
200 - 250
175 - 200
150 - 175
125 - 150
100 - 125
75 - 100
50 - 75
25 - 50
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Acorn
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BUZZARD
BLACKBIRD
BUCHAN
ST FERGUS
GAS TERMINAL
Peterhead
Buchan
Deep Demo
CRUDEN
BAY TANKS
Aberdeen
Offshore W/F
ABERDEEN
Wind T&D Site
0
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20/3
20/2d
20/2b
20/7d
20/8c
Edinburgh
Belfast
Dublin
Manchester
IRELAND
NETHERLANDS
LEGEND
Proposed Green Volt development area
Indicative turbine locations
Indicative interarray
Proposed substation
Possible export route options
Hydrocarbon fields
Platform
FPSO
Terminal
Subsurface infrastructure / object
Wells
Pipelines / Umbilicals / Cables
Quadrants
Offshore wind plan options 2020
Existing offshore wind
Carbon Capture Storage
0
50
Kilometres
PROJECT:
GREEN VOLT
TITLE:
Green Volt Development Location
VER
DATE
COMMENTS
DRAWN
CHECKED
001
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SK
RW
ARCGIS REF: FE_Green_Volt_PR2002_VER001
LAYOUT: FE_GVO_DRW001_VER001
1:938,128
A4
WGS 1984 UTM Zone 30N
FLOTATION ENERGY

Dee DSFB

# Dee District Salmon Fishery Board

Marine Licensing & Consenting Casework Manager
The Scottish Government,
Marine Scotland Marine Planning and Policy,
Marine Laboratory,
375 Victoria Road,
Aberdeen, AB11 9DB

By email to MS.MarineRenewables@gov.scot & Stephanie.Morrison@gov.scot
10th March 2023

Dear Stephanie Morrison,

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST.**

On behalf of the Dee District Salmon Fishery Board (Dee DSFB) we welcome the opportunity to respond to the Green Volt Offshore Wind Limited - Consultation on Request for EIA report.

***Designations & Conservation Status***

As a statutory body charged with the protection of Atlantic salmon and sea trout stocks within its district, the Dee DSFB has a duty to ensure that there are no significant adverse impacts upon the populations of these species.

The Dee has been designated as a Special Area of Conservation under the EC Habitats Directive 92/43 EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna for Atlantic salmon (the principal species for which it receives this designation). The Dee District also supports populations of trout, eels and brook, river and sea lampreys.

Sea trout, common to all the rivers within the Dee District, are a priority species under the United Kingdom's Biodiversity Action Plan (UKBAP).

All lamprey species are protected under the EC Habitats Directive whilst river and sea lampreys are additionally protected under the UKBAP priority list.

Eels are a UKBAP priority species, critically endangered under the IUCN red list and protected under CITES.

***Wild Salmon Strategy and Conservation regulations***

In January 2022, the Scottish Government released its Wild Salmon Strategy which gave a clear message that there is sadly now unequivocal evidence that populations of Atlantic salmon are at crisis point. The Strategy calls on government agencies, as well as the private sector, to prioritise the protection and recovery of Scotland's wild Atlantic salmon populations.

Furthermore, one of the key pressures identified in the strategy is marine development, with marine renewables highlighted as having the potential to impact salmon through noise, water quality and effects on electromagnetic fields (EMFs) used by salmon for migration.

The Conservation of Salmon (Scotland) Regulations 2016 has led to the production of stock assessments for all Scottish salmon rivers, based on catch data. The assessments estimate whether the number of adults returning to the river in each of the previous five years will produce enough eggs to keep the population size above a critical threshold.

For the Dee, like other north-east rivers, the assessments have shown a declining trend in catches since 2011. Nonetheless, the Dee has been categorised as a Grade 1 river, meaning that the stocks have most likely been above the critical threshold - the Conservation Limit - over the last five years.

Assessment of the juvenile salmon stocks in the Dee through the National Electrofishing Programme for Scotland (NEPS) has evaluated juvenile stocks in the Dee as Grade 2, suggesting that there are significant issues with recruitment and survival within the catchment (Malcolm *et al* 2020). With greater pressures on marine survival such that only approximately 3% of smolts return to the river as adults, we need to address any pressures within the freshwater and marine environments to protect Dee salmon stocks.

***Comments***

The Dee DSFB welcomes the opportunity to respond to the consultation on EIA Report. The following comments are provided in respect of the EIA report for the Green Volt Offshore Windfarm.

1. We have welcomed the opportunity to consult with the developer to date as identified in Table 10.1 in section 10.3 and continue to welcome further consultation such as that for the eDNA survey strategy should they receive consent for the development.

2. We agree with the information available on salmon migration pathways that there is potential for the proposed development site to be used by adult salmon and salmon post smolts from the River Dee SAC as identified in section 10.6.6.1. Referring to coordinated by the River Dee Trust and MSS as part of an Environmental Research and Monitoring Programme for the European Offshore Wind Deployment Centre called the North East

Scotland Salmon and Sea Trout Tracking Array, funded by Vattenfall. This programme investigated migration routes of salmon and sea trout from the Rivers Dee and Don over three years 2018, 2019, and 2021, with final report due for publication in 2023. Whilst this array provides some understanding on the immediate direction of travel up to 20km, there is uncertainty surrounding migration pathways beyond this range. We understand that the Norwegian Sea is an important staging area for smolts and therefore conclude that there is the potential for smolt migration pathways to be impacted by this development as they migrate from the River Dee SAC to the Norwegian Sea.

3. We think that there is an error in Table 10.17 in section 10.6.6.1. whereby the table presents the migration periods for the key diadromous species. The table suggests that it presents the 'Time and migration to and from natal rivers' yet only seems to present the outward migration of smolts, during March to June and does not take into account the inward migration of adult salmon, which could occur during any point in the year as referenced in paragraph 126 of section 10.6.6.1. Webb 2007.

4. There is an error in paragraph 348, referring to table 10.44 as 'a summary of EMF effects' when the table number is actually 10.49.

5. We still have concerns over the potential impact of EMFs from suspended cables below the WTG. However due to the floating nature of the proposed development, the cables arising from the turbines will be unshielded between the turbines and the seabed. On that basis, we do not consider that EMF impacts should be considered 'negligible significance' paragraph 332 and 348. Table 10.49.

6. Paragraph 332 refers to the worst-case scenario as being temporary behavioural reactions and is not anticipated to impact upon navigation of salmon. We believe that salmon migration should not be impacted at all by the development and that the mitigation referred to is only relevant to the buried cables and not those suspended below the WTGs. We would request that the developer either provides further information on this point or develops mitigation to ensure that *no impact* to migration is possible from the development due of EMFs.

7. Equally in section 10.7.5.5. disturbance of migratory fish from EMF. The assumption that salmon will use olfactory cues during the latter stages of their migration is understood, but given the site is located 75km offshore it's unlikely that olfactory cues alone will be the primary navigational aid as suggested in paragraph 330.

8. Table 10.1 in section 10.3. refers to the ScotMER Diadromous Fish Specialist Receptor Group. We would request that the developer contributes to monitoring which could address evidence gaps identified the ScotMER Fish Specialist Receptor Group evidence map. With reference to DF.01-2022: Spatial and Temporal Distribution, DF.02-2022: Survival and progression rates in relation to passing through marine renewable areas, DF.03-2022 Influence on migratory patterns due to cable deployment (EMF), DF.04-2022: Effects on

diadromous fish behaviour including fish aggregations around devices (ecological traps) and DF.05-2022: Impacts of noise, including particle motion. Including direct impact high intensity sound from pile driving and detonation of unexploded ordnance. Potentially causing both direct physical impact and displacement e.g. less foraging more predation

9. We would echo comments made previously by FMS, that if MS-LOT are content for issues identified in the Diadromous fish evidence map to be scoped out of the current process, we consider that it is vital that a specific condition is included to ensure that the proposed development contributes to this wider work.

We look forward to commenting further on the development.

Yours sincerely
[Redacted]

Jamie Urquhart

Fisheries Protection Manager, Dee District Salmon Fishery Board

HES

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

**By email to:**
**MS.MarineRenewables@gov.scot**

Marine Scotland (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: 300055446
Your ref: 00010230; 00010231; 00010232
30 March 2023

Dear Marine Scotland

Green Volt Offshore Wind Ltd - Section 36 Consent and Marine Licences - Green Volt Offshore Windfarm, East of Aberdeenshire Coast

Thank you for your consultation which we received on 03 February 2023. 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 (HMPAs). The Applicant is also seeking consent for the Onshore works from Aberdeenshire Council through Regulation 17 of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017).

You should also seek advice from your archaeology and conservation service for matters including unscheduled archaeology and category B and C-listed buildings.

**Proposed Development**
We understand that the development would comprise the offshore elements of a wind farm on the current location of the Ettrick and Blackbird oil field, 80km from the Aberdeenshire coast. It will consist of up to x35 12-16MW turbines of a standard market type up to 264m in height. There will be two export cables; one to the Buzzard oil field 15km to the west of the proposed wind farm and a second cable to connect to the National Grid via a landfall site at Peterhead.

**Background**
We were consulted at Scoping for the proposed development in February 2022. In our response we noted that we were content with the baseline identified for the assessment of impacts and proposed methodologies. We noted that the proposals would require the preparation of a project specific Written Scheme of Investigation (WSI) with a Protocol for Archaeological Discoveries (PAD).

We later clarified that we were content for indirect impacts on marine heritage by marine physical processes be scoped out of the EIA assessment.

**Our Advice**
We **do not object** to the proposed development. We are content that there will not be significant impacts on our historic environment interests.

We welcome that the EIA report (EIAR) and Archaeological Assessment includes a thorough consideration of the potential for maritime archaeology. We welcome that the Report makes clear reference to relevant policy and guidance.

We are content that a sufficient level of detail has been provided in both the EIA report and the Archaeological Assessment. We are content that the proposed mitigation measures to be implemented around high potential anomaly GV22_0008, the potential wreck of the *Ernst Friesecke*, are appropriate (paragraph 294). We are also content that the mitigation measures outlined for unknown heritage assets (paragraph 296) are proportionate and appropriate.

Planning authorities are expected to treat our comments as a material consideration, and this advice should be considered in your decision making. Our view is that the proposals do not raise historic environment issues of national significance and therefore we do not object. Our decision not to object should not be taken as our support for the proposals. This application should be determined in accordance with national and local policy on development affecting the historic environment, together with related policy guidance.

**Further Information**

This response applies to the application currently proposed. An amended scheme may require another consultation with us.

Guidance about national policy can be found in our 'Managing Change in the Historic Environment' series available online at www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment-guidance-notes/. Technical advice is available through our Technical Conservation website at www.engineshed.org.

Please contact us if you have any questions about this response. The officer managing this case is Sam Fox who can be contacted by phone on 0131 668 6890 or by email on samuel.fox@hes.scot.

Yours faithfully

**Historic Environment Scotland**

# Hywind

# Hywind (Scotland) Limited

**Marine Scotland - Marine Planning & Policy**
Scottish Government
Marine Scotland
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Email: MS.MarineRenewables@gov.scot

3rd March 2023

**Reference: Green Volt Offshore Wind Ltd Section 36 Consent and Marine Licences Application Consultation – Hywind Scotland Representation**

This representation is made by Hywind (Scotland) Ltd in response to Marine Scotland's email dated 3 February 2023 in relation to the Green Volt Offshore Wind Ltd (the "Applicant") Section 36 Consent and Marine Licences application. Hywind Scotland has been identified as a potential interested party due to its proximity to the proposed Green Volt offshore wind farm and due to Green Volt's offshore export transmission assets proposed crossing of the Hywind Scotland operating export transmission cable.

Hywind Scotland Ltd is an Equinor operated offshore wind farm comprising 5 x 6MW floating wind turbines 25 km offshore close to the Buchan Deep, with an offshore export transmission cable making landfall in Peterhead, Aberdeenshire. Hywind Scotland has been operation since 2017 and was the world's first commercial scale floating offshore wind farm. Hywind Scotland Ltd is owned by Equinor New Energy Limited 75% and Masdar Offshore Wind Scotland Limited 25%.

One of the proposed Green Volt offshore export cable route alternatives (southern option) overlaps with the existing operational offshore export cable of Hywind Scotland. Hywind Scotland has subsequently reviewed the Offshore Scoping Report/Offshore Environmental Impact Assessment. This letter forms the initial representation to the proposal.

The main point of concern is the potential crossing and close proximity of the Applicant's southern alternative offshore export cable route, which proposes to cross Hywind Scotland's operational offshore export cable near Peterhead. Hywind Scotland may make further representations once further information is obtained.

Hywind Scotland is the holder of a Bilateral Embedded Generation Agreement (BEGA) under the Electricity Act 1989. Hywind Scotland note that there are generic protective provisions for Electricity Act 1989 statutory undertakers.

**Issues to be resolved:**
Hywind Scotland considers that the two schemes can co-exist and therefore does not have an in-principle objection to the Application. However, as Hywind Scotland is currently in operation, it is crucial that the Application does not prohibit the operation.

Hywind Scotland has identified a number of issues that need to be resolved to ensure that no serious detriment is caused to Hywind Scotland. Hywind Scotland will provide a full account of the issues and measures that require the Applicant to resolve once the proposed plans have been reviewed.

In the meantime, Hywind Scotland shall engage with the Applicant to agree provisions to address the following:

i. Provisions relating to the timing and coordination of construction works including:
   a. construction program (estimated timeline of completion of cable crossing operation)
   b. construction mitigation measures including discharge of any requirements;
   c. subsea and ecological measures including discharge of any requirements;
   d. subsea investigations;
   e. liaison between contractors (including monitoring, communication, and emergency protocols); and
   f. community liaison and complaints procedure.
ii. Provisions relating to the timing of consent.
iii. Greater specificity in respect of when thermal interaction alone will not be a reasonable objection, i.e. by reference to parameters above which thermal interaction would nevertheless be a reasonable objection;
iv. Provisions relating to the payment of any additional costs;
v. An indemnity for any loss or damage; and
vi. Provisions relating to dispute resolution prior to arbitration (e.g. internal escalation) and reference to another party and not the Secretary of State in the event that an arbitrator cannot be agreed.

The Offshore Scoping Report/Offshore Environmental Impact Assessment submitted by the Applicant refers to the Applicant's desire to enter into a crossing agreement. Hywind Scotland will require a crossing agreement be put in place with the Applicant to Hywind Scotland's reasonable satisfaction.
Additional Information requested:

- Hywind Scotland wishes to engage to improve its understanding of the construction activities that the Applicant is proposing to undertake and any permanent operational apparatus to be installed within the overlapping area so it can be understood whether such activities will have an impact on the operation, maintenance and decommissioning of Hywind Scotland's cable route.
- Hywind Scotland would also like to understand whether there is likely to be any temporal overlaps relating to any survey or construction activities.

Hywind Scotland will work with the Applicant to facilitate agreement between the parties to ensure both projects can co-exist. Hywind Scotland looks forward to further engagement with the Applicant on these and any other matters that may arise.

Yours sincerely,

[Redacted]

William Munn
Plant Manager Hywind Scotland Wind Farm

**Hywind (Scotland) Ltd** | Company no.08709450
One Kingdom Street, London W2 6BD, England, UK
Phone: +44 (0) 203 204 3200, Fax: +44 (0) 203 204 3600
Email: gm_hywindsccomsec@equinor.com

JNCC

| | |
|---|---|
| **From:** | JNCC Offshore Industries Advice |
| **To:** | MS Marine Renewables |
| **Cc:** | JNCC Offshore Industries Advice |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023 |
| **Date:** | 08 February 2023 16:21:13 |

Good afternoon Lauren,

Thank you for consulting JNCC on the Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licence:, which we received on 03/02/2023.

NatureScot is now authorised to exercise the JNCC's functions as a statutory consultee in respect of certain applications for offshore and offshore waters (0-200nm) adjacent to Scotland. Therefore, NatureScot should provide a full response. However we will check with NatureScot if they require any input from JNCC on this consultation and provide feedback directly to NatureScot where required.

Kind regards,

**Jon Connon**
*Offshore Industries Advice Officer*
*Marine Management Team*
JNCC, Inverdee House, Baxter Street, Aberdeen, AB11 9QA
Tel: 01224 083522
Mobile: [Redacted]
Email: jon.connon@jncc.gov.uk

jncc.gov.uk

**JNCC have been monitoring the outbreak of COVID-19 closely and developed a response plan. As a result, the vast majority of our staff are working from home and adhering to the government's advice on social distancing and travel restrictions. Whilst we are taking these actions we are available for business as usual. We will respond to enquiries as promptly as possible. However, there may be some delays due to the current constraints and we ask for your understanding and patience.**

MAU

marinescotland

# Green Volt OWF

**Marine Analytical Unit Response**

The Green Volt Environmental Impact Assessment includes descriptions of a range of potential impacts. This response focuses only on the assessment of social and economic impacts.

**SEIA Methodology**

The methods section for the socio-economic chapter is not very detailed, and there is no technical chapter for this receptor.

It is, therefore, not very clear how the developers arrived at the conclusions in this report. Can the developers include their technical annex with detailed methodology please?

**Study area**

The developers have chosen a fairly specific study area, focusing on Aberdeen City, Aberdeenshire and Buchan. This is based on proximity to the offshore part of the development, and the landfall location. The ports that will be used during the construction phase, and the operation and maintenance phase, have not been chosen yet and the developers mention that ports in the Moray Firth may be used.

The assessment does not include the Moray Firth area, despite the potential for ports in that area to be used.

Although the developers have identified local areas of impact associated with the landfall location– Buchanhaven and Boddam, this has not resulted in any primary data collection in those areas, despite this being possible for the landfall locations. The developers also say that there is very little data available for these areas, and so most of the assessment focuses on the Aberdeenshire and Aberdeen City local authority areas.

Furthermore, the way the impact is presented implies a level of certainty that is not reflected in the description of the development. As mentioned previously, the ports have not been chosen and contracts with suppliers are still being negotiated. Despite this, impacts on employment and GVA are not presented as scenarios, or with an indication of margin of error.

**Assigning significance**

In the methods section (19.5) there is a description of how significance is assigned to socio-economic impacts. Their method uses a matrix combining magnitude of impact and sensitivity of receptor.

In this matrix, sensitivity is defined in terms of geographical area impacted. High sensitivity requires impact on an international scale, whereas impact on a local scale is considered minor or negligible.

There are two levels of local: low local and moderate/high local. It is not at all clear how low/moderate/high local are defined.

In this matrix, local impacts are mostly classed as negligible or minor, and can only be considered 'moderate' if the impact magnitude is high. Only moderate or major impacts are considered significant in this assessment.

This method for assigning significance will automatically downgrade social impacts. It is unlikely that social impacts at a national or international scale will be of high magnitude and while impacts may be of a greater magnitude at a local level they will, by definition, almost always be of 'minor' or 'negligible' sensitivity.

Furthermore, as mentioned previously, no primary data was collected in this assessment and the developers have stated that data sets are only available at local authority level. This means that 'local' impacts are not being assessed, and so there is no way of determining whether they are significant or not.

Baseline

A good baseline has been presented and a study of the local and regional supply chain is also present.

Stakeholders responses to the consultation has been included in the analysis. "Table 19.1 details the key issues raised in relation to socioeconomics and tourism in the Scoping Opinion (received April 2022) (MS-LOT, 2022) (Appendix 1.1) and summarises other issues / concerns that have been raised during additional consultation activities undertaken as part of the EIA process and how these have been addressed in the preparation of this Offshore EIA Report"

The baseline section refers to: "Stakeholders have been engaged through the scoping process and the PreApplication Consultation (PAC) Event held on 20/09/2022. Where responses from stakeholders relevant to the socioeconomics, tourism and recreation chapter have been received, they are presented and addressed within this table". The list of consultees in included in the table and their responses to the impacts presented is presented and included in the analysis.

**Assessment of Impacts**

The report states that "This chapter considers offshore socioeconomic, tourism and recreation impacts only. For onshore impacts, please refer to the separate Onshore EIA Report, where they are appropriately addressed. It is recognised that the onshore EIA assessment will be undertaken later than the submission of the Offshore EIA Report. To enable consideration of the on and offshore elements of the Project as a whole, an additional document has been prepared. This additional document is called the Summary of Offshore and Onshore Environmental Impact Assessments and provides a summary of the Offshore EIA Report and the predicted summary of the onshore EIA. It will be submitted to

the Scottish Ministers along with the offshore application documents and will be available on the Green Volt website. If required, it will be updated upon completion of the Onshore EIA Report".

However, this report presents estimated impacts which appear to also include onshore impacts. For example, the direct employment section of the construction phase 19.9.1.1 states "The construction of the Project is expected to create a small number of short-term employment opportunities in the area. There will be demand for skilled onshore and offshore construction workers, vessel operators and engineers during the construction phase" and then presents the estimates of the employment generated by the construction phase. Can we have clarification as to whether some of the onshore impacts have also been estimated?

The report states (19.5.3) that some infrastructure and labour are likely to be outsourced from beyond the UK. Although the exact proportions are not known it would be helpful, and we believe within reason, to provide multiple scenarios outlining the differing impacts on the UK under different futures relating to procurement.

*Direct Employment Impacts*

Employment and GVA estimate have been provided for the local, regional and UK level but there is no separate section for GVA impacts. The methodology is not included and we would like to see the technical annex. More detail below:

The "Direct employment" impacts sections for each phase of the project (19.9.1.1, 19.9.2.1, 19.9.3.1) include estimates of the expected employment generated during the relevant phase. The methodology and key assumptions for estimating the employment impacts is not detailed. For example, the report does not detail how direct employment has been converted to indirect and induced. This means that it is very difficult to judge the credibility of these estimates.

There is very little information on the types of jobs that are expected to be created (e.g. part-time, full-time, skilled) beyond FTE and how these compare to the existing jobs in the study area.

The "direct employment" sections also contain an "estimated GVA of the project" (e.g. line 100, p. 37). It is unclear whether this relates to direct, direct and indirect, or direct, indirect and induced GVA. There is also very limited detail on the methodology and key assumptions used to estimate this. It is therefore, again, very difficult to judge the credibility of these estimates.

Furthermore, we feel that it is confusing to include GVA estimates in the direct employment section. We feel that this should have been included in a separate section, with a full breakdown of GVA impacts (direct, indirect and induced) for each phase of the project, at each geographical level. A detailed description of the methodology and key assumptions used to estimate any GVA impacts should have also been included here.

*Supply Chain Impacts*

The "Supply chain impacts" sections for each phase of the project (19.9.1.2, 19.9.2.2, 19.9.3.2) provides very limited information and mainly refers back to the estimates in the "direct employment" section.

Table 19.23 summarises the socioeconomic, tourism and recreation impacts of the Project, both before and after mitigation. For "supply chain impacts", the receptor is identified as "indirect/induced GVA". However, within the "supply chain impacts" sections for each phase of the project (19.9.1.2, 19.9.2.2, 19.9.3.2), there is very little information provided on the expected indirect or induced GVA impact. For example, there is no quantitative analysis of indirect or induced GVA, which is typically included in these types of assessments.

The supply chain impacts during the construction phases are described as:

*"It is assumed that indirect and induced employment generation resulting from the construction of the Project would be focused within a number of sectors relating to development, surveying, consenting, project management, the manufacture and installation of component parts, engineering and design activities associated with maintenance requirements and land and marine transport of components. Levels of indirect and induced employment from construction are displayed in Table 19.17. The expected timings of these activities is displayed in Figure 19.9. These supply chain impacts will likely manifest at a minimum of a regional scale to a maximum of an international scale. Assuming beneficial effects occur at a national level, this impact is designated a medium magnitude and a value of up to national, so the resulting effect is assessed as up to moderate beneficial. No additional mitigation is required."*

The section appears to mainly reference indirect and induced employment generation as opposed to indirect and induced GVA. The information provided is vague and it is difficult to see how the conclusion of 'moderate beneficial' has been reached with the lack of detail on the expected indirect or induced GVA impact.

If the developer is not sure the exact location of expenditure, a range of realistic potential procurement scenarios could have been included. The assessment does mention a number of potential sites, suggesting that this could have been a feasible approach (e.g. Aberdeen, Peterhead, Montrose etc.).

*Social*

The MAU holds that potential social impacts have been defined very narrowly within the report (mostly focused on economic impacts), and knock on effects of impacts or changes have not been explored, despite this being requested in the scoping opinion.

The MAU included a list of potential impacts to include in the assessment, in the annex of the scoping opinion. These have not been explored in the SEIA. The developers have stated that impacts relevant to offshore wind have been taken forward and these include Direct

employment; supply chain impacts; demand of local private services and goods; interference with planned infrastructure improvements; impacts on marine tourism; disturbance of recreational activities; and impacts on steaming times of fishing vessels to fishing grounds. Socio-cultural impacts, distributional effects, impacts on other services have not been explored. MAU does not agree that these are not relevant to offshore wind developments.

Knock on effects, or a detailed exploration of impacts has not been included. For example, the developers explore the potential impact of the development on accommodation. In section 19.9.2.3 and 19.9.2.5 the report states that workers engaged in operation and maintenance activities will effectively live on a vessel offshore, near to the development. They will likely remain there for 2 weeks at a time. There is no information about whether they will be able to leave the vessel (for example at weekends) or how transiting through the port area will be managed. An influx of workers at any time could generate impacts, depending on how it is managed.

The report states that: “The majority of the construction activities for a floating offshore wind farm, particularly the substructures and turbines, takes place in port. The construction work is likely to be undertaken at a port or harbour in a region of Scotland that has the appropriate facilities, capacity and staff resources. The port(s) on the east coast of Scotland will likely be selected to minimise the distance to the wind farm site, whilst balancing with facilities already in place locally to the port. Consequently, the use of existing facilities for the in-port construction works means that there will be no impact to local accommodation availability directly from the Project” this contradicts the results of impacts resulting from the economic activity at the ports and the local and regional area. For example, there will either be additional employment and additional workers in the area using the local accommodation or there will be displacements from other local activity which is not taken into account in the analysis.

On a number of occasions potential social impacts are described, but the report states that the detail is contained in another chapter.

For example, the SEIA mentions that the Peterhead Lido beach is “set within the outer walls of Peterhead harbour (approximately 4km north of the NorthConnect Parallel Landfall and 3 km south of the St Fergus South Landfall) and has won a seaside award every year since 2012 in recognition of its access, facilities, safety, environmental quality and heritage.” The report then states that further information can be found in the chapter on Marine Sediment. It is not clear whether any impacts on Peterhead Lido beach are anticipated, and reading the chapter on marine sediment does not make this clearer. If this area is impacted, it could have knock on effects for beach users.

The MAU suggests that for transparency the impact assessment includes reference to the fact that an adequate social impact study has not taken place due to the uncertainty at this stage in the development, and that this does not mean that the development will have no positive or negative social impacts but that it has not been possible to assess them at this stage.

**Stakeholder engagement**

One Pre-Application Consultation event was held and there is no more information about stakeholder engagement in the report. The applicant contacted a wide range of stakeholder groups, but only a portion of them responded or attended the event.

The MAU noted absence of community-based organisations in description of community engagement. No Community Liaison Officer(s) for each affected community has been assigned for the development. Overall, community engagement appeared to be quite high level and designed to inform communities about the development, rather than genuinely engage and facilitate community discussions and gather views on how potential (positive and negative) impacts could be managed.

MCA

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3rd March 2023

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Dear Sir/Madam

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 (AS AMENDED) AND MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 TO CONSTRUCT AND OPERATE GREEN VOLT FLOATING OFFSHORE WINDFARM, OFF THE COAST OF PETERHEAD, ABERDEENSHIRE.**

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

**Navigation Risk Assessment**
Anatec Limited has undertaken a detailed Navigation Risk Assessment (NRA) in accordance with MCA guidance (MGN 654) and NRA risk assessment methodology. We are satisfied that appropriate traffic data has been collected in accordance with MGN654, which includes two 14-day marine vessel traffic surveys in summer 2021 and winter 2022. MCA is content the hazard log is a reasonable and proportional assessment of the risks. A completed MGN 654 Checklist has been provided as part of the NRA, and MCA is content that all recommendations have been addressed.

It is noted that there are multiple references in sections 1 to 4 and section 21 to 'Chapter 16: Shipping and Navigation' of the offshore Environmental Impact Assessment (EIA) report. Just to note, Chapter 14 is the shipping and navigation chapter of the offshore EIA report.

There are references to obsolete MCA guidance, specifically MGN 371 and MGN 543, that has been superseded by MGN 654. For example, within Table 12.1 it states that X-band radar

interference is intolerable at 0.25nm whereas in the current guidance it is 0.5nm. Furthermore, reference is also made to MGN 372 Offshore Renewable Energy Installations (OREIs): Guidance to Mariners Operating in the Vicinity of UK OREIs (2008). This publication was recently superseded by MGN 372 Amendment 1 Safety of Navigation: Guidance to Mariners Operating in the Vicinity of UK Offshore Renewable Energy Installations (OREIs) which was published in November 2022. The applicant is advised to refer to the most current guidance.

Some of the older studies carried out regarding Navigation, Communication, and Position Fixing Equipment, are referred to in 12.6.1. There may be additional benefit in referring to more recent helicopter trials and documents written by the MCA in 2019, titled: “MCA report following aviation trials and exercises in relation to offshore windfarms” and “MCA report following aviation trials at Hornsea Project 1 windfarm”. Some issues identified in the 2005 paper are relevant today, but there are different systems and aircraft now and windfarms are obviously much larger and further offshore.

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

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

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

9.1 – it is appreciated that data may not be readily available, however, it should be noted that the main SAR aircraft which would respond to incidents within this area is the oil and gas SAR helicopter in Aberdeen, Rescue Bond 1. From MCA figures (not validated), since early 2016, there appears to be 74 incidents which Bond 1 has responded to, within the study area (for this purpose, those are within 57.66 and 58.10 North and 1.05 and 0.21 West). The vast majority of these are all medical related and of those, most are oil and gas. There were 129 incidents in total (including the 74 from Bond 1) which were identified within the area – not all of which required a SAR response.

9.4 – HMCG consider the project to be outside of VHF range – it sits 38nm from nearest point of land.

9.6.1 – the use of incidents per turbine year does not appear to be effective as it doesn’t take into account location, number of turbines per windfarm or traffic in the area.

9.6.1 – notwithstanding the restrictions in gathering data of past incidents, there was a pleasure vessel which broke down and drifted into a turbine at Gunfleet Sands (June 2022) – lifeboats sent to assist. This should be available via RNLI stats.

9.6.3 – the resource provided by industry to support third party incidents is noted as being a positive, however, this should also be considered against the number of incidents created by those resources and/or the industry e.g. vessel breakdowns, fires, medical.

It is noted that aviation is covered in Chapter 16, however, there is certainly consideration for emergency response on the potential for helicopters to interact with the windfarm. It is not a high likelihood circumstance but very much high impact. For example, while the helicopter crash on 1st April 2009 20 or so miles from the site, it was coming from Miller so on a course which would likely have taken it over the site.

12.1 - It would be reasonable to note within the NRA that the MCA has repeatedly raised concerns about the impact of larger turbines on radio reception, with anecdotal evidence of poor reception. This is why the MCA is asking for radio surveys to be conducted before and after construction. Note also the MarCom WG Report (PIANC) no 161 of 2018 which recognises the likely impact on VHF and recommending studies carried out by new windfarms on the implications for radio-communications systems (and AIS). There is also mention of the requirement for extra VHF station offshore, which the MCA also support.

17.7 and 18.10 looks at the reduction of emergency response capability. However, the qualification mostly discusses the potential increase in number of incidents, not necessarily the complexity of responding to incidents within a windfarm. The presence of on-site vessels is noted and when they are offshore, this is valuable, but they will not always be there. Furthermore, these sections touch on a potential increase in incidents caused by the windfarm, but there is no comparison to historical windfarm incidents within the NRA (outside of allision/collision) so not really a baseline to understand what incidents may occur at windfarms. It's not disputed that numbers are likely to be lower than on the oil and gas platforms, but they are not negligible.

**Cumulative Impacts**
The cumulative impact considered in section 13 and 14 provides an overview of the main identified commercial routes. Five pre scoping offshore windfarm projects are also considered: Marram, Salamander, Buchan, Mara Mhor and Broadshore. Marram wind, approximately 5nm to the north, will affect the routes running northeast and southwest. The gap between the red line boundaries is approximately 5nm and a course alteration to east or west between the projects will be required. The potential course changes due to Marram wind effects routes 2,3 and 9. Route 8 running northwest / southeast may also have to divert north to avoid the proposed marram wind proposal. Table 14.2 summarises the 10 commercial routes identified and how each are affected by the 5 potential developments. It is noted that the pre scoping status of the sites has led to a low confidence in the boundaries hence only a summary case has been presented. We are content with this assessment at this stage.

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

**Marking and Lighting**
MCA will seek to ensure the turbine numbering system follows a 'spreadsheet' principle and is consistent with other windfarms in the UK. All lighting and marking arrangements will need to be agreed with MCA and the NLB. The MCA requires all aviation lighting to be visible 360° and compatible with night vision imaging systems, as detailed in CAP 764 and MGN 654 Annex 5.

**Construction scenarios**
We would expect to see some form of linear progression of the construction programme avoiding disparate construction sites across the development area, and the consent needs to include the requirement for an agreed construction plan to be in place ahead of any works commencing.

**Mooring Arrangements**
Third Party Verification of the mooring arrangements for all floating devices will be required prior to construction to provide assurance against loss of station. Ideally this will be a condition of the marine licence. Guidance on regulatory expectations on mooring arrangements can be found on our website: https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping. The applicant has stated in 18.9.1 that they will put in place a system that continually monitors each individual WTG. The proposal is to have an alarm system to alert the MCC if a structure leaves a pre-determined safe area. The use of GPS in this system would be expected but inclusion of AIS on all turbines and the overall particulars of this system will need further discussion with the MCA and NLB.

**Hydrographic Surveys**
MGN 654 requires that hydrographic surveys should fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final data supplied as a digital full density data set, and survey report to the MCA Hydrography Manager and the UKHO. 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.

**Cable Routes**
Export cable routes, cable burial protection index and cable protection are issues that are yet to be fully developed, including the landfall locations with two possibilities currently being considered. However due cognisance needs to address cable burial and protection, particularly close to shore where impacts on navigable water depth may become significant. Any consented cable protection works must ensure existing and future safe navigation is not compromised. The MCA would accept a maximum of 5% reduction in surrounding depth referenced to Chart Datum.

Should High Voltage Direct Current (HVDC) transmission infrastructure be used there is a potential impact on ships compasses from the electro-magnetic field generated. A pre-construction compass deviation study will be required on the expected electro-magnetic field, and we would be willing to accept a three-degree deviation for 95% of the cable route. For the remaining 5% of the cable route no more than five-degree deviation will be attained. If this requirement cannot be met, further mitigation measures may be required including a post installation deviation survey of the cable route. This data must then be provided to the MCA and UKHO, as a precautionary notation may be required on the appropriate Admiralty Charts regarding possible magnetic anomalies along the cable route.

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

**Liaison with local MCA Marine Office**
The applicant should be reminded that their contractors and subcontractors must have the required certification for all vessel operations, and early engagement with the local Marine Office should be undertaken where necessary to ensure there are no issues with regards to survey and inspections, towage, and safety requirements. A loadline exemption for the turbine platforms will be required

prior to any towage to site and the applicant must ensure any ballast water requirements are addressed.

**Embedded Mitigation**
We have the following comments on the proposed risk controls in section 21, Table 21.1.

1. Cable Burial Risk Assessment
    - In case of damage to, or destruction or decay of, the authorised project seaward of MHWS or any part thereof, excluding the exposure of cables, notification must be issued to MCA, NLB, the Kingfisher Information Service of Seafish and the UKHO within 24 hours of becoming aware.
    - In case of exposure of cables on or above the seabed, the undertaker must within three days following identification of a potential cable exposure, notify mariners and inform Kingfisher Information Service of the location and extent of exposure. Copies of all notices must be provided to the MCA, NLB, and the UKHO within 5 days.
    - The plan must include proposals for monitoring offshore cables including cable protection during the operational lifetime of the authorised scheme which includes a risk-based approach to the management of unburied or shallow buried cables.
    - Attention should be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed and subject to the traffic volumes, an anchor penetration study may be necessary.

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

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

Yours faithfully,

[Redacted]

Vaughan Jackson
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[Redacted]

Peter Lowson
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# MOD-DIO

Defence Infrastructure Organisation

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03 March 2023

Dear Lauren,

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

**MARINE (SCOTLAND) ACT 2010**
**The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017**

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

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST.**

Thank you for consulting the Ministry of Defence (MOD) in relation to the Section 36 application and Marine Licences through your communication dated 03 February 2023.

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

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

This scheme will comprise of up to 35 wind turbines (floating structures), with a maximum height to blade tip of up to 264 metres above Lowest Astronomical Tide (LAT) that will be located approximately

80km off the Aberdeenshire coast, in the Outer Moray Firth. In addition to the turbine structures there will be one Offshore Substation Platform (OSP). This will be connected via interconnector cables. Up to four offshore export cables will then connect the OSP to the landfall on the coastline near Peterhead in the north-east of Scotland. The onshore components are subject to a separate application for planning permission from Aberdeenshire Council.

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

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

**Air Defence (AD) radar**

The proposed turbines would be located approximately 76.6 from, detectable by, and will cause unacceptable interference to the AD radar at RRH Buchan.

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

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

The need to mitigate the impact of the proposed development upon the effective operation of RRH Buchan has been recognised by the applicant and this is set out in Table 16.1 included within Chapter 16 of the Offshore Environmental Impact Assessment Report (18 January 2023). Whilst the applicant has indicated the need to mitigate these impacts, to date no mitigation scheme has been submitted for assessment.

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

**Physical Obstruction**

In this case the development falls within Low Flying Areas 14 (LFA 14). Within these areas fixed wing aircraft may operate as low as 250 feet or 76.2 metres above ground level to conduct low level flight training. The addition of turbines in this location would introduce a physical obstruction to low flying aircraft operating in the area.

In the event that the applicant is able to overcome the objection listed above, MOD would require that conditions are added to any consent issued requiring the submission, approval and implementation of an aviation lighting scheme, and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction. The applicant has acknowledged the requirement for aviation obstacle lighting in Chapter 16 (16.7.1.3) of the Offshore Environmental Impact Assessment Report (18 January 2023).

As this development includes structures that exceed a height of 60m above Highest Astronomical Tide (HAT) it would be subject to the lighting requirements set out in the Air Navigation Order 2016. In

addition to any Civil Aviation Authority (CAA) requirements, the MOD will require the submission, approval, and implementation of an aviation safety lighting specification that details the installation of MOD accredited aviation safety lighting.

With regard to the remainder of the proposed development, the export cable corridors between the wind farm array area and the Buzzard platform and onshore landfall locations will occupy oil and gas blocks that contain highly surveyed routes. These routes are retained by the MOD to support national defence requirements. The export cable corridors will cross highly surveyed routes at certain points. Whilst this is not an issue the MOD wishes to be consulted on the final export cable routes and requires the applicant to notify the MOD once all works on the cable routes are completed so records can be updated.

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

- air defence radar systems sited at RRH Buchan

I trust this adequately explains our position on this matter.

Yours faithfully,

[Redacted]

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Safeguarding Manager

MSS

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**02 March 2023**

**GREEN VOLT OFFSHORE WINDFARM – EIA SUBMISSION**

Marine Scotland Science (MSS) have reviewed the request from MS-LOT and provide the following advice.

**Commercial fisheries**

MSS is content with the list of impact pathways scoped into the EIA.

MSS note that tension leg platforms are being considered in this application. This would be the preferred option where technically feasible, as it minimises the spatial footprint of the moorings and would reduce potential conflict with commercial fisheries.

MSS note that the proposed wind farm boundary has been adjusted to remove the southeast corner of the windfarm site from the proposed windfarm area. This was in response to concerns raised by the fishing industry over spatial conflict with an important fishing ground for *Nephrops*. MSS welcomes this adjustment as it goes some way to mitigate the impacts on the fishery, with the current proposed boundary now overlapping with only 0.1% of available *Nephrops* grounds.

MSS are content that the developer will consider overtrawl surveys along the export cable route where appropriate. MSS note there will be 9 cable crossings with rock protection, which may be suitable areas for overtrawl surveys.

Yours sincerely,

**Renewable Energy Environmental Advice group**
Marine Scotland Science

# NATS

| | |
|---|---|
| **From:** | NATS Safeguarding |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); Morrison S (Stephanie) |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023 [SG32512] |
| **Date:** | 06 February 2023 16:24:53 |
| **Attachments:** | image001.png<br>image002.png<br>image003.png<br>image004.png<br>image005.png<br>image006.png<br>RE SCOP-0009 Green Volt Offshore Wind Ltd - Green Volt 75km East of the Aberdeenshire Coast Consultation on Request for a Scoping Opinion Response Required by 3 January 2022 SG32512.msg |

Our Ref: SG32512

Dear Sir/Madam

NATS position remains as detailed in our email of 20/12/21 attached.

Yours faithfully

**NATS Safeguarding**

E: natssafeguarding@nats.co.uk

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

| | |
|---|---|
| **From:** | NATS Safeguarding |
| **To:** | MS Marine Renewables |
| **Subject:** | RE: SCOP-0009 – Green Volt Offshore Wind Ltd - Green Volt – 75km East of the Aberdeenshire Coast – Consultation on Request for a Scoping Opinion – Response Required by 3 January 2022 [SG32512] |
| **Attachments:** | image001.png<br>image002.png<br>image003.png<br>image004.png<br>image005.png<br>image006.png<br>SG32512 Green Volt Offshore Wind Farm - TOPA - Issue 1.pdf |

Our Ref: SG32512

Dear Sir/Madam

We refer to the application above. The proposed development has been examined by our technical safeguarding teams and conflicts with our safeguarding criteria.

Accordingly, NATS (En Route) plc **objects to the proposal**. The reasons for NATS's objection are outlined in the attached report TOPA SG32512.

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. 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 obliged to follow the relevant directions within Planning Circular 2 2003 - Scottish Planning Series: Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) (Scotland) Direction 2003 or Annex 1 - The Town And Country Planning (Safeguarded Aerodromes, Technical Sites And Military Explosives Storage Areas) Direction 2002.

These directions require that the planning authority notify both NATS and the Civil Aviation Authority ("CAA") of their intention. As this further notification is intended to allow the CAA to consider whether further scrutiny is required, the notification should be provided prior to any granting of permission.

It should also be noted that the failure to consult NATS, or to take into account NATS's comments when determining a planning application, could cause serious safety risks for air traffic.

Should you have any queries, please contact us using the details below.

Yours faithfully

**NATS Safeguarding**
E: natssafeguarding@nats.co.uk
4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk

NATS Public

**From:** MS.MarineRenewables@gov.scot <MS.MarineRenewables@gov.scot>
**Sent:** 03 December 2021 09:11
**To:** MS.MarineRenewables@gov.scot
**Subject:** SCOP-0009 – Green Volt Offshore Wind Ltd - Green Volt – 75km East of the Aberdeenshire Coast – Consultation on Request for a Scoping Opinion – Response Required by 3 January 2022

Dear Sir/Madam,

REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 AND MARINE LICENCE APPLICATIONS FOR THE GREEN VOLT OFFSHORE WINDFARM LOCATED 75 KILOMETRES EAST OF THE ABERDEENSHIRE COAST

**REGULATION 14 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**
**REGULATION 12 OF THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**
**REGULATION 13 AND SCHEDULE 4 OF THE MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2007**

*SCOP-0009 – Green Volt Offshore Wind Ltd - Green Volt – 75km East of the Aberdeenshire Coast*

In respect of the proposed marine licence applications for the above works (under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009) and the section 36 consent application (under the Electricity Act 1989), Green Volt Offshore Wind Ltd has requested the Scottish Ministers adopt a scoping opinion in relation to the above proposed works under the above Environmental Impact Assessment ("EIA") Regulations.

The scoping report submitted by the applicant can be found at: Green Volt Floating Offshore Wind Farm | Marine Scotland Information

To assist the Scottish Ministers in adopting a comprehensive scoping opinion, which will outline the scope and level of detail of information to be provided in the EIA Report to be submitted by the applicant with its proposed section 36 consent and marine licence applications, **please review the scoping report and advise on what you consider should be included within or excluded from the scope of the EIA for the proposed works**. In doing so you may wish to consider any comments you may have regarding data sources, proposed methodologies or the requirement for specific studies.

Please submit your response electronically to ms.marinerenewables@gov.scot by **3 January 2022**. If you are unable to meet this deadline, please contact us as soon as possible to discuss the possibility of an extension to the consultation period. If you have no comments to make please submit a "nil return" response.

Please be advised that the scoping report and this consultation request relate to the proposed section 36 consent and marine licence applications and not the onshore elements of the works.

Yours faithfully,

Stef

**Marine Scotland** - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB
Website: http://www.gov.scot/Topics/marine/Licensing/marine

***COVID-19: Marine Scotland - Licensing Operations Team( MS-LOT) is working from home and as a result determination of applications may take longer than our stated timelines. In addition MS-LOT is unable to respond to phone enquiries, please communicate with MS- LOT via email. Email addresses are MS.MarineRenewables@gov.scot for marine renewables correspondence or MS.MarineLicensing@gov.scot for all licensing queries.***

Prepared by:
NATS Safeguarding Office

# Technical and Operational Assessment (TOPA)

For

Green Volt Offshore

Wind Farm Development

## NATS ref: SG32512

Issue 1

Contents

## Notice

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## Publication History

| Issue | Month/Year | Change Requests and summary |
|---|---|---|
| 1 | December 2021 | Scoping Request |

## Document Use

External use: Yes

## Referenced Documents

# 1. Background

## 1.1. En-route Consultation

NATS en-route plc is responsible for the safe and expeditious movement in the en-route phase of flight for aircraft operating in controlled airspace in the UK. To undertake this responsibility it has a comprehensive infrastructure of RADAR's, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of a wind farm.

In this respect NATS is responsible for safeguarding this infrastructure to ensure its integrity to provide the required services to Air Traffic Control (ATC).

In order to discharge this responsibility NATS is a statutory consultee for all wind farm applications, and as such assesses the potential impact of every proposed development in the UK.

The technical assessment sections of this document define the assessments carried out against the development proposed in section 3.

# 2. Scope

This report provides NATS En-Route plc's view on the proposed application in respect of the impact upon its own operations and in respect of the application details contained within this report.

Where an impact is also anticipated on users of a shared asset (e.g. a NATS RADAR used by airports or other customers), additional relevant information may be included for information only. While an endeavour is made to give an insight in respect of any impact on other aviation stakeholders, it should be noted that this is outside of NATS' statutory obligations and that any engagement in respect of planning objections or mitigation should be had with the relevant stakeholder, although NATS as the asset owner may assist where possible.

# 3. Application Details

Scottish Government submitted a request for a NATS technical and operational assessment (TOPA) for the development at Green Volt Offshore Wind Farm. It will comprise turbines with tip heights up to 270m within the boundary points as detailed in Table 1 as shown in the diagrams contained in Appendix B.

| Points | Lat | Long | East | North |
|---|---|---|---|---|
| 1 | 57.8324 | -0.5112 | 488508 | 883509 |
| 2 | 57.9310 | -0.5169 | 487934 | 894478 |
| 3 | 57.9310 | -0.6714 | 478785 | 894288 |
| 4 | 57.9169 | -0.6714 | 478816 | 892719 |
| 5 | 57.9169 | -0.7079 | 476652 | 892677 |
| 6 | 57.8606 | -0.7079 | 476772 | 886405 |
| 7 | 57.8606 | -0.7472 | 474439 | 886362 |
| 8 | 57.8324 | -0.7472 | 474497 | 883226 |

Table 1 – Turbine Details

# 4. Assessments Required

The proposed development falls within the assessment area of the following systems:

| RADAR | Lat | Long | nm | km | Az (deg) | Type |
|---|---|---|---|---|---|---|
| Alanshill Radar | 57.6431 | -2.1655 | 47.0 | 87.1 | 72.6 | CMB |
| Perwinnes Radar | 57.2123 | -2.1309 | 58.3 | 107.9 | 49.0 | CMB |
| **En-route Nav** | **Lat** | **Long** | **nm** | **km** | **Az (deg)** | **Type** |
| None | | | | | | |
| **En-route AGA** | **Lat** | **Long** | **nm** | **km** | **Az (deg)** | **Type** |
| None | | | | | | |

Table 2 – Impacted Infrastructure

## 4.1. En-route RADAR Technical Assessment

### 4.1.1. Predicted Impact on Alanshill RADAR

Using the theory as described in Appendix A and development specific propagation profile it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.

### 4.1.2. Predicted Impact on Perwinnes RADAR

Using the theory as described in Appendix A and development specific propagation profile it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.

#### 4.1.3. En-route operational assessment of RADAR impact

Where an assessment reveals a technical impact on a specific NATS' RADAR, the users of that RADAR are consulted to ascertain whether the anticipated impact is acceptable to their operations or not.

| Unit or role | Comment |
|---|---|
| Prestwick ATC | *Unacceptable* |
| Aberdeen ATC | *Unacceptable* |

*Note: The technical impact, as detailed above, has also been passed to non-NATS users of the affected RADAR, this may have included other planning consultees such as the MOD or other airports. Should these users consider the impact to be unacceptable it is expected that they will contact the planning authority directly to raise their concerns.*

## 4.2. En-route Navigational Aid Assessment

#### 4.2.1. Predicted Impact on Navigation Aids

No impact is anticipated on NATS' navigation aids.

## 4.3. En-route Radio Communication Assessment

#### 4.3.1. Predicted Impact on the Radio Communications Infrastructure

No impact is anticipated on NATS' radio communications infrastructure.

# 5. Conclusions

## 5.1. En-route Consultation

The proposed development has been examined by technical and operational safeguarding teams. A technical impact is anticipated, this has been deemed to be unacceptable.

# Appendix A – Background RADAR Theory

## Primary RADAR False Plots

When RADAR transmits a pulse of energy with a power of $P_t$ the power density, P, at a range of r is given by the equation:

$$P = \frac{G_t P_t}{4\pi r^2}$$

*Where $G_t$ is the gain of the RADAR's antenna in the direction in question.*

If an object at this point in space has a RADAR cross section of σ, this can be treated as if the object re-radiates the pulse with a gain of σ and therefore the power density of the reflected signal at the RADAR is given by the equation:

$$P_a = \frac{\sigma P}{4\pi r^2} = \frac{\sigma G_t P_t}{(4\pi)^2 r^4}$$

The RADAR's ability to collect this power and feed it to its receiver is a function of its antenna's effective area, $A_e$, and is given by the equation:

$$P_r = P_a A_e = \frac{P_a G_r \lambda^2}{4\pi} = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r^4}$$

*Where $G_t$ is the RADAR antenna's receive gain in the direction of the object and $\lambda$ is the RADAR's wavelength.*

In a real world environment this equation must be augmented to include losses due to a variety of factors both internal to the RADAR system as well as external losses due to terrain and atmospheric absorption.

*For simplicity these losses are generally combined in a single variable L*

$$P_r = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r^4 L}$$

## Secondary RADAR Reflections

When modelling the impact on SSR the probability that an indirect signal reflected from a wind turbine has the signal strength to be confused for a real interrogation or reply can determined from a similar equation:

$$P_r = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r_t^2 r_r^2 L}$$

Where $r_t$ and $r_r$ are the range from RADAR-to-turbine and turbine-to-aircraft respectively. This equation can be rearranged to give the radius from the turbine within which an aircraft must be for reflections to become a problem.

$$r_r = \sqrt{\frac{\lambda^2}{(4\pi)^3}} \sqrt{\frac{\sigma G_t G_r P_t}{r_t^2 P_r L}}$$

## Shadowing

When turbines lie directly between a RADAR and an aircraft not only do they have the potential to absorb or deflect, enough power such that the signal is of insufficient level to be detected on arrival.

It is also possible that azimuth determination, whether this done via sliding window or monopulse, can be distorted giving rise to inaccurate position reporting.

## Terrain and Propagation Modelling

All terrain and propagation modelling is carried out by a software tool called ICS Telecom (version 11.1.7). All calculations of propagation losses are carried out with ICS Telecom configured to use the ITU-R 526 propagation model.

Appendix B – Diagrams

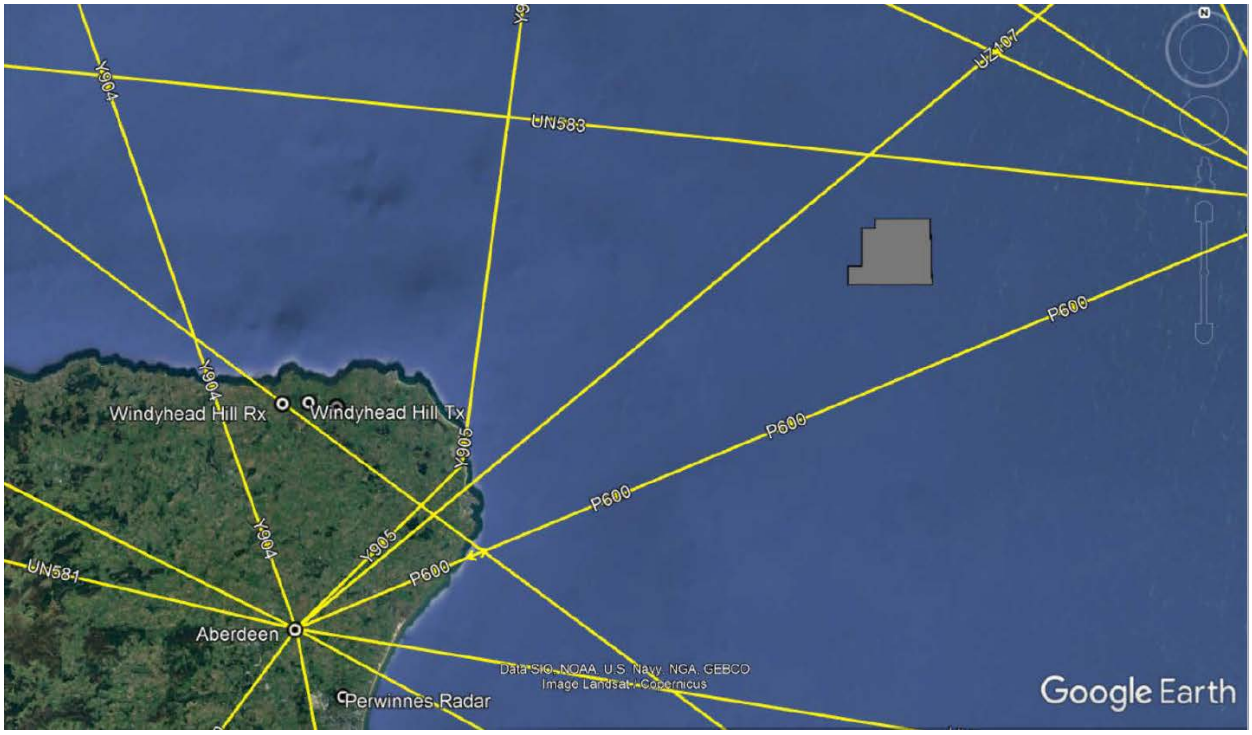


Figure 1: Proposed development location shown on an airways chart

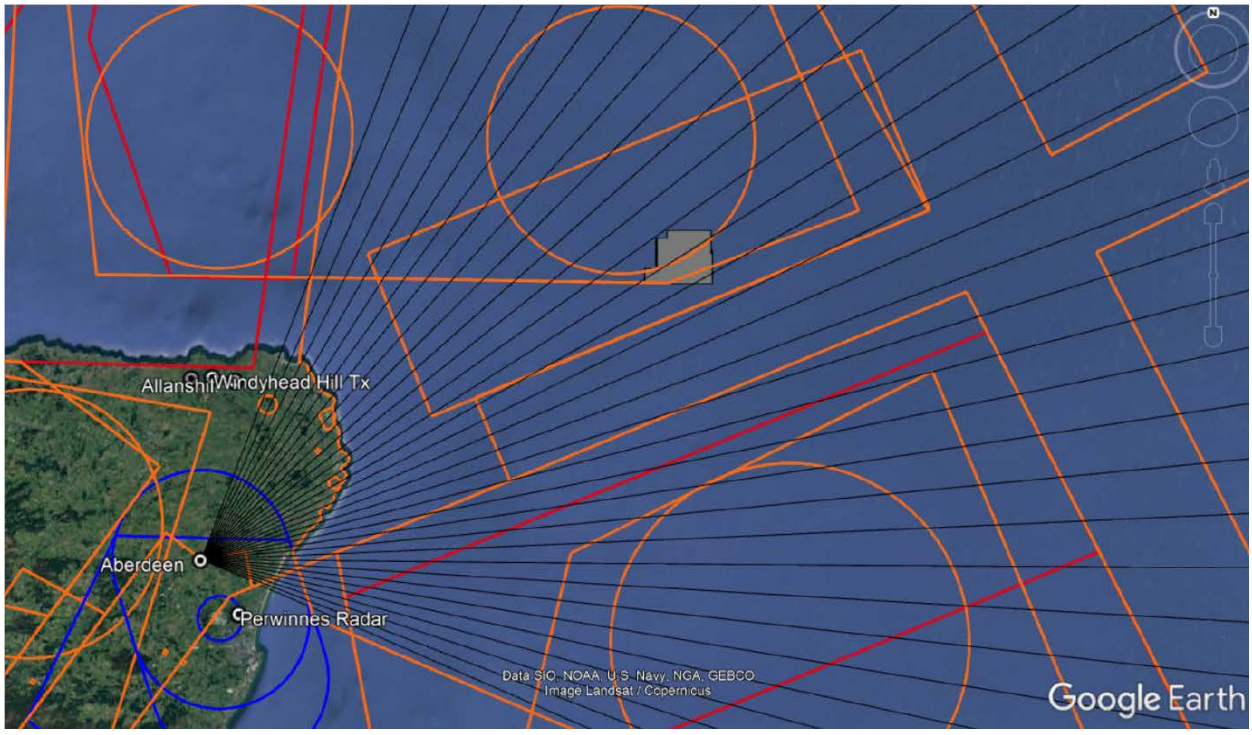


Figure 2: Proposed development shown alongside other recently assessed applications

consented/built | impact –accepted | impact –objection | mitigated
mitigation –proposed | no impact | refused/withdrawn

Natural England

Date: 03 April 2023
Our ref: 420443

Scottish Government
Marine Scotland
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Natural England
Lancaster House
Hampshire Court
Newcastle Upon
Tyne NE4 7YH
T 0300 060 3900

**BY EMAIL ONLY**

Dear Lauren,

**Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast**

Thank you for your consultation which we received on the 3rd February 2023 consulting Natural England on the Green Volt Floating windfarm. We also thank you sincerely for the extensions you granted us for this response.

The following constitutes Natural England's formal statutory response. This is without prejudice to any comments we may wish to make considering further submissions or on the presentation of additional information.

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). We have delegated responsibility from JNCC to also advise on offshore wind farms in all English waters out to 200 nautical miles or the median line.

As the application is located outside English waters, advice from NatureScot and JNCC, the statutory nature conservation bodies for Scottish waters, should be sought.

Due to our remit, we have restricted our comments to impacts to species from English Marine Protected Areas and to species in English waters: marine mammals, fish and birds.

In summary, Natural England broadly agree with the conclusions of the Habitat Regulation Assessment with respect to English waters.

We note that Natural England's advice on ornithological modelling differs from NatureScot's advice. Although for the Green Volt project we advise no adverse effect on site integrity (for English protected sites and species), we are mindful of these differences and want to highlight them here. The increasing number of offshore wind projects, could lead to adverse effect on English and Scottish birds in combination with other plans or projects in the future. Although Natural England do not agree with the methods in the impact assessment, we do not expect the applicant to undertake a separate impact assessment based on Natural England's advice.

In Annex 1 we provide Natural England's comments on this project, and a list of the documents that have been reviewed for this response is in Annex 2.

For any queries relating to the content of this letter please contact me using the details provided below. Any further consultations on this or other projects, should be forwarded to consultations@naturalengland.org.uk

Lucy Stainthorpe
Marine Lead Adviser
Northumbria Area Team
Natural England
Lucy.stainthorpe@naturalengland.org.uk

**Annex 1. Natural England's general comments on English protected areas and species.**

Marine Mammals

Providing the works are carried out in accordance with the application, and that mitigation measures are followed within the JNCC guidelines 'Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise (2010)', it can be excluded that the application will have a significant effect on marine mammals of English Special Areas of Conservation.

Fish

Providing the works are carried out in accordance with the application, it can be excluded that the application will have a significant effect on fish of English Special Areas of Conservation. For migratory fish species, please refer to any Environment Agency comments.

Ornithology

As the proposed development is in Scottish waters, the predicted impacts are mainly to Scottish Special Protection Areas (SPAs). Natural England have restricted comments to potential impacts at English SPAs. However, Natural England note that impacts at English SPAs need to be considered in the context of the wider network. We also note the need for a precautionary assessment of impacts given the recent and ongoing outbreaks of highly pathogenic avian influenza (HPAI) in seabirds.

| Document reference | Comments |
|---|---|
| Report to inform Appropriate Assessment PC2483-RHD-ZZ-XX-RP-Z-0024<br><br>HRA Apportionment Annex. | Use of sabbatical rates<br><br>Natural England note that the applicant has excluded 'sabbatical birds' from the impact assessment, based on assumptions about the percentage of non-breeding adults in each population. Natural England note that we do not agree with the use of sabbatical rates to exclude sabbatical birds from impact assessment, nor do we consider the inclusion of sabbatical rates to be appropriate within the apportioning process.<br><br>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:<br>• the proportion of breeding adults in the population likely to be taking a sabbatical in any given year<br>• whether the SPA population estimates include or exclude sabbatical birds, and<br>• whether or not sabbatical birds are likely to use the area of sea around the SPA colony.<br><br>This evidence can be used to inform whether or how sabbaticals are best incorporated in a Population Viability Analysis. 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.<br><br>Natural England note that the applicant has excluded 10% of kittiwakes, 10% of gannets, 7% of guillemots, 7% of razorbills and 7% of puffins from the impact assessment as 'sabbatical birds', without providing evidence in support of this approach as outlined above.<br><br>Natural England therefore advises that all adult birds are assumed to be breeding birds within the impact assessment and note that the inclusion of these excluded sabbatical birds in the impact assessment would likely increase the predicted impacts for kittiwake, guillemot, razorbill, gannet, and puffin. |
| Report to inform Appropriate Assessment PC2483-RHD-ZZ-XX-RP-Z-0024<br><br>HRA Apportionment Annex. | <u>Use of stable age apportioning</u><br><br>Natural England notes that the applicant has apportioned birds to age classes according to stable age structure calculated from population models for many species and seasons. Natural England does not support the use of the stable age structure approach for age apportioning, due to:<br>• uncertainty regarding survival rates – in particular, for immature age classes<br>• lack of info about non-breeding adult components of populations<br>• the underlying assumption that populations are stable (which is not the case for many populations)<br><br>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. |
| General comments Highly Pathogenic Avian Influenzas-Population Viability Analysis | Natural England note that there is uncertainty regarding population trends of kittiwake, guillemot, razorbill, gannet and puffin given recent and possibly ongoing impacts of highly pathogenic avian influenza (HPAI).<br><br>Since the project's surveys, the species of protected sites have been significantly impacted by HPAI and we have limited understanding of how current and future breeding seasons will be further impacted by HPAI. Natural England note there is therefore a need for a precautionary approach when interpreting Population Viability Analysis outputs in the context of predicted population trends. |

Annex 2 – documents reviewed:

EIA report

- Chapter 6 EIA methodology Offshore EIA Report: volume 1
- Chapter 10 Fish and Shellfish Ecology Offshore EIA report: volume 1
- Chapter 11 Marine Mammal Ecology Offshore EIA report: volume 1
- Chapter 12 Offshore and intertidal Ornithology Offshore EIA report: volume 1

Habitats regulations documents

- Green Volt Offshore windfarm- Offshore Environmental Impact Assessment offshore Scoping Report PC2483-RHD-ZZ-XX-RP-Z-0001
- Green Volt Offshore Windfarm- Habitat Regulation Appraisal offshore HRA screening report PC2483-RHD-ZZ-XX-RP-Z-0002
- Green Volt Offshore Windfarm Report to Inform Appropriate Assessment PC2483-RHD-ZZ-XX-RP-Z-0024
- Green volt offshore windfarm Habitat Regulation Appraisal PC2483-RHD-ZZ-XX-RP-Z-0002
- Green volt Offshore Windfarm offshore environmental impact assessment report Summary of offshore and onshore environmental impact assessment

Technical appendices

- Technical Appendix 1.2 Offshore Scoping Report Offshore EIA report Volume 2. PC2483-RHD-ZZ-XX-RP-Z-0001
- Technical Appendix 3.1 Offshore HRA screening Report C2483-RHD-ZZ-XX-RP-Z-0002
- Technical Appendix 9.1 underwater noise Technical Report Offshore EIA report: volume 2. Technical Appendix 11.1 Marine Mammal Cumulative Impact Assessment Screening PC2483-RHD-ZZ-XX-RP-Z-0039
- Technical Appendix 12.1 Offshore and intertidal Ornithology Baseline Technical Report P00008351
- Technical Appendix 12.2 offshore ornithology displacement analysis Offshore EIA report: Volume 2. P00008351
- Technical appendix 12.3 Offshore Ornithology: collision Risk Modelling Offshore EIA report: Volume 2. P00008351

NatureScot

NatureScot
NàdarAlba
Scotland's Nature Agency
Buidheann Nàdair na h-Alba

Lauren Cowan
Marine Scotland – Marine Planning & Policy
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

30 March 2023

Our ref: CNS REN OSWF Green Volt - INTOG

By email only

Dear Lauren,

**GREEN VOLT OFFSHORE WIND FARM**

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009**

Thank you for consulting NatureScot on the Section 36 and Marine Licence applications submitted by Green Volt Offshore Wind Limited.

Our advice on the natural heritage interests assessed within the Environmental Impact Assessment Report (EIA Report) and Habitats Regulations Appraisal (HRA) for this project is outlined below. This response does not incorporate our advice on the ornithological impacts across the Environmental Impact Assessment (EIA) and Report to Inform Appropriate Assessment (RIAA). Thank you for granting a further extension to enable us to consider these aspects fully.

Our advice detailed in this letter is in relation to the offshore infrastructure (seaward of MHWS) only, as the onshore components are subject to a separate application.

**Policy context**

As a statutory consultee, NatureScot works in support of the Scottish Government's vision for a Blue Economy[1], with its six outcomes acting as focal points to ensure the marine environment supports ecosystem health, improved livelihoods, economic prosperity, social inclusion and wellbeing. We provide

[1] Scottish Government (2022) *A Blue Economy Vision for Scotland*. Available at: https://www.gov.scot/publications/blue-economy-vision-scotland/ (Accessed 27 March 2023)

advice in the spirit of Scottish Government's ambition and its aims to balance the promotion of the sustainable development of offshore wind, whilst protecting our biodiversity.

Working within the context of a climate emergency and a biodiversity crisis, we wish to provide advice that is enabling and secures the right development in the right place with most benefit for climate change reduction, which takes account of and lessens impacts in respect of the biodiversity crisis.

**Background**

The Green Volt project proposes to develop a floating offshore wind farm to facilitate a first of its kind decarbonisation project within the oil and gas industry. This will be achieved through the complete electrification of the Buzzard oil and gas field (operated by CPEL) with the support of a fully connected grid connection back to the New Deer substation in Aberdeenshire. The project will also offer a nearby connection point for other oil and gas installations looking to decarbonise their on-board power generator(s). The project is being developed by Flotation Energy Limited and Vårgrønn AS. Flotation Energy and Vårgrønn have formed the dedicated company, Green Volt Offshore Wind Limited, to progress the development of the Project.

Marine Scotland is undertaking a spatial planning exercise for Innovation and Targeted Oil and Gas (INTOG) projects, and an Initial Plan Framework was published in August 2021. Crown Estate Scotland (CES) announced the INTOG Leasing Round in August 2021, with results announced on 23rd March 2023. The INTOG Leasing Round has been designed to allow developers to apply for the rights to build offshore wind farms specifically for providing renewable electricity to power oil and gas facilities to reduce carbon dioxide emissions during production. The applicant has been awarded an Exclusivity Agreement in accordance with the INTOG process. The project area is located entirely within the proposed Eb area of search identified in the Initial Plan Framework.

**Proposal**

The Green Volt offshore wind farm array area is to be located approximately 80 km east of the Aberdeenshire coast, within the decommissioned Ettrick and Blackbird oil and gas fields. The location is 20 km away from the Buzzard platform complex. The wind farm array will cover an area of 116 $km^2$ and landfall will be at either NorthConnect Parallel or St. Fergus South (in the vicinity of Peterhead).

The proposal, which is following a project design envelope approach, comprises:

- Up to 35 wind turbine generators, with a tip height of up to 264m. Each turbine will have a capacity of up to 16 MW.
- Floating semi-submersible platform or tension leg platform substructures.
- Mooring lines consisting of either catenary or tension leg platform tendons, with up to 6 anchors per turbine.
- Up to 35 inter-array cables (plus 7 strings), 134 km in total length, either laid on the seabed or buried.
- One offshore substation platform, supported on a 4-legged jacket structure and either pin piled or suction piled to the sea floor.
- Four offshore export cables, with 2 cables connecting the offshore substation to the Buzzard platform (60 km in total length) and 2 cables connecting the offshore substation to the landfall location (240 km in total length). The cables will be installed at landfall using horizontal directional drilling and installed offshore using trenching, jetting, ploughing or mechanical cutting.

- An installed capacity of up to 560 MW, with a proposed 35 year operational lifetime.

**Assessment approach**

The applicants have largely followed standard EIA processes and discussed deviations from standard methods pre-application. We comment further on these specifics within our advice.

The assessment of the Southern Trench nature conservation Marine Protected Area (ncMPA) is carried out using the EIA assessment methodology (e.g. re significance of impact). It does not take into consideration the conservation objectives of the site, as detailed in the Conservation and Management Advice[2]. The Southern Trench ncMPA is designated to protect minke whales, burrowed mud, fronts and shelf deeps. We provide our advice on impacts to the Southern trench ncMPA in our detailed receptor advice.

**Natural heritage interests**

We provide detailed advice on each receptor as described below.

- Advice on physical environment (specifically coastal processes) is provided in **Appendix A**.
- Advice on benthic interests is provided in **Appendix B**.
- Advice on fish and shellfish interests is provided in **Appendix C**.
- Advice on marine mammal interests is provided in **Appendix D**.
- Advice on the accompanying Report to Inform Appropriate Assessment is provided in **Appendix E**.

Our advice on ornithology will be provided separately and no later than 17th April 2023.

**Conclusion**

For all NatureScot interests considered in this letter, we conclude that the proposed development (on its own and cumulatively) could be progressed without significant adverse effects. Where appropriate, we provide advice on mitigation considerations relevant to consent conditions as well as any monitoring requirements.

**Further information and advice**

We hope this advice is helpful. Please contact myself or Erica Knott in the first instance for any further advice.

Yours sincerely,

Jenna Lane

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[2] NatureScot (2020) *Conservation and Management Advice. Southern Trench MPA. December 2020*. Available at: https://sitelink.nature.scot/site/10477 (Accessed 27 March 2023)

## NatureScot ADVICE FOR GREEN VOLT OFFSHORE WIND FARM

## APPENDIX A – PHYSICAL PROCESSES

Physical processes are considered in Chapter 7 of the Green Volt EIAR. Our advice on the geodiversity features of the Southern Trench nature conservation Marine Protected Area (ncMPA) is included in this Appendix.

The EIA assessment for physical processes concludes no significant impacts, both alone and cumulatively. We agree with this conclusion. However, we have the following comments.

### Designated sites

*Southern Trench ncMPA – geodiversity features*

The Southern Trench (ncMPA) is designated for the following geodiversity features: quaternary of Scotland (subglacial tunnel valleys and moraines) and submarine mass movement. The EIAR does not explicitly assess potential impacts on these features.

We advise that there is no potential impact on the submarine mass movement feature or the subglacial tunnel valley element of the quaternary feature, mainly due to the significant distance from the proposed infrastructure.

Moraines are also an element of the quaternary feature. We note this feature is not mapped in Figure 7.4, which illustrates the protected features of the Southern Trench ncMPA. Although section 7.7.4.1 says that the cable corridor avoids any Southern Trench ncMPA features, Figure 7.3 suggests that it crosses one of the moraines mapped in Figure 2(i) in the Southern Trench ncMPA Data Confidence Assessment[3]. The moraines are relict landforms, meaning they cannot re-form if damaged. In terms of the Chapter 7 methodology, moraines have high value and high sensitivity, whereas section 7.7.5.1 assigns the seabed Negligible sensitivity. Potential direct physical impacts of installing the cables on the seabed are therefore capable of affecting the quaternary feature other than insignificantly.

The cable installation would disturb the seabed in a corridor up to 10 metres wide, including trenches 1.5 metres deep, according to Table 7.11. In parts of the cable corridors, cables would be armoured with protection, which could obscure moraine surfaces.

We have assessed the potential impacts of the cable installation against the relevant Southern Trench ncMPA conservation objectives for the moraines feature. The moraines are broad-scale features, typically several kilometres wide, with detailed topography likely to be at least 0.5-1 $km^2$ in spatial scale. The cable trench excavations would be three orders of magnitude smaller. Most or all of the excavation would be through post-glacial sediment that drapes the moraine surfaces and the surface of the drape would be partly or wholly re-formed by cable burial. Therefore, the *extent, component elements and integrity* of the moraines would be maintained and the *structure* of the moraines would be unimpaired. Note that the term '*functioning*' is not relevant as the moraine landforms are relict. In addition, where cables are proposed to be surface-laid with protection, moraine *surfaces would remain sufficiently unobscured for the purposes of determining whether* the *extent, component elements and integrity* of the moraines would be *maintained*

[3] NatureScot (2020) *Scottish MPA Programme Data Confidence Assessment Southern Trench MPA*. Available at: https://sitelink.nature.scot/site/10477 (Accessed 17 March 2023)

and the *structure* of the moraines would be *unimpaired*. Therefore, the proposal would not hinder the achievement of the conservation objectives.

**Potential impacts assessed**

*Effect of cable protection in the nearshore on hydro-sedimentary dynamics*

The assessment of 'Impact O2', the effect of rock deposits or concrete mattresses on the wave, tidal and sediment regimes (section 7.7.4.2), is not clearly written. For the northern cable route, St. Fergus South, there could be cable armouring close to the HDD exit in water as shallow as 5 m at low tide (see section 7.5.3). Storm waves can significantly mobilise a sandy seabed at this depth. Any effects, such as the armour interrupting storm-driven sediment transport, seem unlikely to extend more than tens to hundreds of metres. The magnitude of impact could perhaps be Negligible, as stated in section 7.7.4.2, but this has not been demonstrated in the assessment.

However, the cable route is at least a 7 km distance from the nearest designated feature sensitive to such effects – the Coastal Geomorphology feature of Loch of Strathbeg SSSI. Therefore, we agree that the sensitivity to Impact O2 is Negligible and thus the overall significance of the effect is Negligible.

*Potential re-exposure of cable by coastal retreat at landfall*

Table 7.1 in section 7.3 states that NatureScot's concerns at the Scoping stage regarding the issue of potential cable re-exposure at landfall due to coastal retreat have been addressed by scoping in "changes along export cable (inside 12 nm)" for the topic of bathymetry (see Table 7.9). However, this wording does not appear in the potential impacts assessed in section 7.7.3. The only relevant consideration we can identify is an assumption in section 7.5.3 that the HDD would be deep enough to avoid re-exposure by coastal retreat. Further consideration is deferred to the Cable Burial Risk Assessment.

We raised this issue at Scoping when landfall by trenching was an option. However, the landfall will now be by HDD only. If there were re-exposure at or near the HDD exit, then any resulting installation of new armour would not have significant impacts, based on our reasoning above regarding the effects of cable protection in the nearshore on hydro-sedimentary dynamics.

*Pre-sweeping of bedforms within cable corridor*

As detailed in section 7.5.3, flattening of sandy bedforms is proposed up to a 50 m width and up to a 1 km length of the cable corridor. Section 7.6.1 suggests that if bedforms are found, where there are currently gaps in bathymetry surveyed, this activity could be more extensive.

We agree with the assessment of 'Impact C1', damage to seabed structure and form during construction (section 7.7.3.1), that sensitivity is Negligible, as the bedforms are not a feature of the Southern Trench ncMPA. However, it is worth noting that the assessment conclusion, that magnitude is also Negligible, rests on an apparent unproven assumption that the bedforms are mobile and will re-form within an adequate timescale (see paragraphs 54 and 63). In theory, the bedforms could be immobile/relict in the timescale of the development. If any other topic receptor (e.g. benthic species) depends on these bedforms, then we would conclude a potentially significant magnitude of effect of the pre-sweeping.

## NatureScot ADVICE FOR GREEN VOLT OFFSHORE WIND FARM

## APPENDIX B – BENTHIC INTERESTS

Benthic interests are considered in Chapter 9 of the Green Volt EIAR. Our advice in relation to Annex I habitats assessed in the accompanying Report to Inform Appropriate Assessment (RIAA) is presented in Appendix E. Our advice on the Southern Trench nature conservation Marine Protected Area (ncMPA) features burrowed mud, fronts and shelf deep features is included in this Appendix.

### Baseline

Appendix 8.1 describes a habitat assessment carried out by Gardline Ltd in September 2021. This included the collection of benthic samples within the proposed wind farm site and the export cable corridors (outside of 12 nm). There is inconsistency in the description of this survey in Chapter 9 of the EIAR. Both the Appendix 8.1 survey report and paragraph 42 of section 9.6.1.2 of the EIAR state that 56 sediment grab samples were taken across 14 stations. However, in section 9.6.1.2 of the EIAR, paragraph 39 states that 18 grab samples were conducted. The survey report states that 15 stations and 4 transects were investigated with a digital stills camera system, however paragraph 39 of section 9.6.1.2 of the EIAR states that 18 video transects were conducted and paragraph 43 states that photographs and footage were collected across 19 stations and 4 transects.

Appendix 7.2 describes a benthic sampling survey carried out by Green Marine and analysed by APEM in May 2022. The survey report states that 8 grab samples were taken within the export cable corridor, within 12 nm. Section 9.6.1.3 of the EIAR states that during this survey 6 video transects were conducted, with still photographs taken along 5 of these transects. However, Appendix 7.2 makes no mention of video transects or still photographs.

Appendix 7.1 describes a Multi-Beam Echo Sounding (MBES) and sediment survey carried out by Hydrofix and Green Marine on 2nd April 2022. The survey report states that 12 sediment grab samples and five camera drops were conducted along the proposed export cable corridor, within 12 nm. However, no MBES data acquisition was conducted west of latitude 1.40 $^{0}$ W due to fishing activity, which also reduced the number of sediment grabs conducted in the area.

Figure 9.2 of the EIAR is described as showing all the sampling points. However, it doesn't appear to include the sampling points from the Hydrofix and Green Marine sediment survey carried out in April 2022. We query why these samples were not included in Figure 9.2 and whether these samples were analysed and included in the assessment.

Figure 9.2 shows a clear gap in sampling in the inshore portion of the cable route by approximately 10 km from the coast. The inshore area is where the most heterogeneous habitats are likely to be, and potentially will include PMFs such as kelp beds, and Annex 1 habitats such as rocky reefs. The omission not to have sample points in the inshore area has implications such as our inability to assess the impacts of cable laying activities in this area.

As stated above, the April 2022 survey by Hydrofix and Green Marine was restricted in the inshore area due to fishing activity. We query why these gaps could not be filled by agreeing survey activity at a time with less impact on fishers or from considering previously collected data (if available) from previous developments

Despite the inconsistencies in the descriptions of benthic sampling outlined above, the survey results give a good indication of the seabed in the area (except for the close inshore areas as mentioned above). A comparison with previous surveys for oil and gas purposes indicates this is a relatively stable environment.

Some habitats of conservation importance are reported, including widespread seapen and burrowing megafauna communities (PMF) and individual *Sabellaria spinulosa* (not as the reef form). A large *Sabellaria spinulosa* reef was reported in the NorthConnect survey and that cable was routed around the reef. It is not clear whether that reef is also likely to be in Green Volt's cable corridor or whether they will also route around it. No ocean quahog (PMF) are reported in the Benthic Ecology chapter as would be expected. However, they are included in the Fish and Shellfish chapter and impacts assessed as Minor.

**Assessment approach**

We agree with the impacts scoped in and scoped out of the assessment, as outlined in Table 9.14. We note that the potential impact of EMF is not listed in Table 9.14, however this appears to be an oversight as EMF is included in Table 9.15, which summarises the potential impacts assessed, and it has been assessed in section 9.7.4.3.

Each impact assessment in section 9.7 concludes that significance is Minor, for all impacts and at all stages of the development. We agree that this is likely to be correct.

*Electro-magnetic Fields (EMF)*

The Appendix 9.2 EMF Assessment Report relies heavily on the DECC National Policy Statement EN-3, which states that cable armouring, burial and cable bundling are sufficient to reduce magnetic fields. However, this statement was published in 2011. Since then evidence[4] has suggested that moving cables further from receptor species will not eliminate effects on EMF and may in fact make the fields more biologically meaningful. In the assessment of the impact of EMF in section 9.7.4.3, a score of low sensitivity is based on there being 'little evidence to suggest that benthic species would be adversely impacted by EMF'. This is based on lack of knowledge rather than lack of sensitivity. Given this, and the lack of knowledge of effects on most benthic species, we advise that the sensitivity of benthic features should be updated to medium. Combined with a magnitude score of low, this would still result in a Minor significance, but would better reflect the current lack of knowledge.

The assessment of the impact of EMF does not consider the impacts of dynamic cables in the water column. Although, this is more relevant to fish than benthic receptors.

*Decommissioning impacts*

In section 9.7.5, which covers decommissioning impacts, it states that scour protection may be left in place and that piled foundations of the OSP will be cut below the seabed. As laid out in recent Scottish Government guidance[5], there is a presumption of full removal of all infrastructure at the end of their

[4] Hervé, L. (2021*) An evaluation of current practice and recommendations for environmental impact assessment of electromagnetic fields from offshore renewables on marine invertebrates and fish.* Unpublished Master's thesis. University of Strathclyde.
[5] Scottish Government (2022) *Decommissioning of Offshore Renewable Energy Installations in Scottish waters or in the Scottish part of the Renewable Energy Zone under The Energy Act 2004 Guidance notes for industry (in Scotland)*. Available at: https://www.gov.scot/publications/offshore-renewable-energy-decommissioning-guidance-scottish-waters/ (Accessed 16 March 2023)

operational life. Therefore, this should be considered as the most likely approach for decommissioning. We advise that the decommissioning activities should follow the current Scottish Government guidance. Further discussion and assessment will be required when the full decommissioning plan is devised.

**Cumulative impacts**

An assessment of the cumulative impacts is presented in section 9.8.

A 30 km Zone of Influence has been used, but with no explanation as to why this distance was chosen. However, we are content that this distance is reasonable, given the expected extent of impacts on benthic receptors.

Oil and gas decommissioning plans are not screened in to the cumulative assessment, but there is no explanation why. It is not clear if this is because there is no decommissioning expected in the vicinity, or because there is not expected to be any relevant impacts. Given the project lifespan applied for, we consider that this requires further consideration.

Table 9.17 shows the impacts that are scoped in and out of the cumulative assessment. Most impacts are seen as not having the potential for cumulative impacts due to the impacts occurring at discrete locations and being temporary. However, if these discrete locations are multiplied over a number of activities, then the risk of cumulative impacts becomes possible. In particular, there are a large number of cables planned for the Peterhead area, including rock/mattress protection that will result in permanent habitat loss, as well as various activities that will cause disturbance to the seabed. A cumulative assessment of all possible impacts should be carried out. For example, we would expect to see an assessment of the total area of disturbance and habitat loss over the coming years from all developments. This should include the predicted area of scour protection and rock placement, as well as the predicted area permanently lost to turbines and Offshore Substation Platform (OSP) foundations.

Transboundary impacts are considered in section 9.9. We agree that transboundary impacts are highly unlikely.

**Mitigation**

Section 9.7.1 describes the embedded mitigation. We generally agree with what is proposed. However, to add to the statement that the cable route will be microsited around *Sabellaria spinulosa* reefs, we advise an additional mitigation measure as follows: micrositing of the cable route should be used to avoid *any* sensitive habitats, such as biogenic reefs, if these are detected prior to, or during, construction.

Burial is suggested as a mitigation for EMF, but this is only applied to the cables on the seabed. Section 9.7.4.3 says cables will be buried to a minimum depth of 0.6 m. We advise that the minimum burial depth should be 1 m.

**Designated sites**

Impacts on the Buchan Ness to Collieston Special Area of Conservation (SAC) are considered within the Report to Inform Appropriate Assessment. We provide our advice on this in Appendix E.

*Turbot Bank Nature Conservation Marine Protected Area (ncMPA)*

The Turbot Bank ncMPA, which is designated for sandeels, is considered in section 9.6.4. This ncMPA has been scoped out for further assessment as there are unlikely to be any direct or indirect effects, given the distance from the proposed wind farm site and ECC. We agree with this approach.

*Southern Trench ncMPA*

In this Appendix, we consider the protected features - burrowed mud, fronts and shelf deeps. The export cable corridor (ECC) passes through the southern part of the MPA, and a number of activities such as trenching could affect the burrowed mud feature. As such, potential impacts during construction and decommissioning on the Southern Trench ncMPA have been scoped in. However, the assessment of potential impacts on the MPA is carried out using the EIA assessment methodology (i.e. determining significant effect). It does not take into consideration the conservation objectives of the site, as detailed in the Conservation and Management Advice[6], or the correct tests.

However, based on the information provided, we advise that the proposed activities are capable of affecting, but insignificantly, the burrowed mud feature of the Southern Trench ncMPA. This is because the key area for burrowed mud is the northern part of the MPA, which will not be affected by the proposed activities. While there may be some burrowed mud elsewhere within the site, these will be a smaller, less significant component of the functioning of the site. This, combined with the fact that the activities (such as trenching) will only have localised impacts and are recoverable over time, leads us to conclude any effects will be insignificant and will not undermine the conservation objectives of the site in regards to burrowed mud.

The proposed activities are not capable of affecting the fronts of shelf deep features of the Southern trench ncMPA.

[6] NatureScot (2020) *Conservation and Management Advice Southern Trench MPA*. Available at: https://sitelink.nature.scot/site/10477 (Accessed 16 March 2023)

**NatureScot ADVICE FOR GREEN VOLT OFFSHORE WIND FARM**

**APPENDIX C – FISH (including diadromous) & SHELLFISH INTERESTS**

Fish and shellfish interests are considered in Chapter 10 of the Green Volt EIAR. We provide commentary in relation to consideration of diadromous fish interests as European Site qualifying features in the accompanying Report to Inform Appropriate Assessment (RIAA) in Appendix E in addition to our advice on these features under EIA below.

Overall, the fish and shellfish ecology chapter has a good level of detail covering background information, potential impacts, the assessment process and conclusions reached, and it covers all stages of the development.

**Baseline**

*Marine Species*

We found that there was little join-up between the benthic survey data and what was presented in the EIAR, which was reliant on the Coull *et al.* (1998)[7] spawning/nursery maps. Although unconventional, it meant that the worst case was presented.

The species and habitat that are most sensitive to offshore wind farm development during construction and some aspects of maintenance, are those that are unable to flee or are slow to flee, many of which are PMFs and prey species. They include sandeels (species and habitat), herring eggs (and habitat) and cod (during spawning). Sandeel habitat has been surveyed in small patches in the export cable corridor. We agree with the conclusion that there will be Minor Adverse effects during cable laying.

Survey data has shown that most of the array area is burrowed mud suitable for nephrops (not a PMF). From a fish ecology point of view, we agree that impacts on nephrops will not be significant. Due to the muddy habitat of the development area, it is unsuitable habitat for herring spawning or sandeels. Herring spawning grounds and sandeels are likely to be near the development site but not in the immediate area, and therefore not likely to be impacted by the development.

*Diadromous Fish*

There is an absence of robust evidence about the behaviour and distribution of these species in the marine environment. Despite this, we have reviewed the information provided and consider that this wind farm alone and cumulatively is unlikely to have significant adverse effects, when considered within an EIA context.

We will however, continue to advocate within the ScotMER process for research proposals to increase the knowledge and evidence base from which to inform assessments. We also advise that offshore wind developers should be contributing to research as well as other initiatives such as the Wild Salmon Strategy Implementation Plan and any other strategies that are developed for diadromous fish interests.

[7] Coull, K. A., Johnstone, R., & Rogers, S. I. (1998). *Fisheries sensitivity maps in British waters*. Published and distributed by UKOOA Ltd, 9.

**Assessment approach**

The worst case scenario is considered for each of the impact pathways. We agree that these are correct for the species and habitats that we advise on.

All potential impacts have been assessed as being no greater than Minor Adverse, therefore are considered 'not significant' in terms of the EIA. We provide our advice on the assessments below, noting that these comments will not affect the overall conclusions of the chapter.

*Increased suspended sediments and sediment re-deposition*

The impact of increased suspended sediments and sediment re-disposition during construction is assessed in section 10.7.4.2. Suspended sediment load does not appear to be modelled. Therefore, it is difficult to assess what the impact might be as there is no consideration for how far Suspended Sediment Concentration (SSC) will travel or how much will be lifted or deposited. It states that any increases in water column sediment loading and deposition resulting from the proposed activities will be very localised and short-term in duration. Based on this assumption and that herring eggs (which are sensitive to smothering from sediment deposition) are likely to be outside of the development area, we agree with the conclusion of no significant effect.

*Underwater noise and vibration*

Underwater noise and vibration are most likely to affect fish and shellfish species that are not able to move (quickly) away from the disturbance, and includes PMF species such as sandeel, herring and Atlantic salmon.

The impact of underwater noise and vibration during construction is assessed in section 10.7.4.4 of the EIAR. For fish (both with and without swim bladders) and eggs and larvae, the Underwater Noise Technical Report (Appendix 9.1) has used Popper *et al*. (2014)[8] for mortality, and recoverable injury thresholds, which is appropriate. Popper *et al.* (2014) make qualitative judgements for disturbance. Therefore, Appendix 9.1 uses a US resource, WSDOT (2011)[9], and uses 150 dB rms as a quantitative temporary disturbance threshold for fish. We are content with the underwater noise modelling as presented for relevant fish.

*Electro-magnetic Fields (EMF)*

The impacts of EMF during operation is assessed in section 10.7.5.5. The MMO (2014)[10] case study has been highlighted in this section as evidence that elasmobranch species have not been adversely effected by EMF during operation of an offshore wind farm. However, this study was not based on a floating offshore wind farm development and therefore is not directly comparable. In a floating offshore wind farm, the cables from the wind turbine would not be buried or shielded as described in the MMO (2014) report.

[8] Popper, A.N., Hawkins, A.D., Fay, R.R., Mann, D.A., Bartol, S., Carlson, T.J. and Coombs, S.(2014). *ASA S3/SC1.4 TR-2014 Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report Prepared by ANSI-Accredited Standards Committee S3/SC1 and Registered with ANSI. Springer*.

[9] WSDOT. (2011). *Biological Assessment Preparation for Transport Projects - Advanced Training Manual*. Washington State Department of Transport.

[10] Marine Management Organisation (2014) *Review of post-consent offshore wind farm monitoring data associated with licence conditions.* A report produced for the Marine Management Organisation, pp 194. MMO Project No: 1031. ISBN: 978-1-909452-24-4.

Dynamic cables associated with a floating offshore wind farm could potentially affect elasmobranch species (many of those found in the area are PMF species). Dynamic cables have not been considered in Chapter 10 of the EIAR. However, there is no research currently available on this topic and therefore any discussion would be subjective as impacts are unknown. We would welcome further discussion on this as part of any potential monitoring if the project is consented.

**Mitigation**

Embedded mitigation is considered in section 10.7.1. Burial is suggested as a mitigation for EMF, but this is only applied to the cables on the seabed. It is proposed that cables will be buried to a minimum depth of 0.6 m. We advise that the minimum burial depth should be 1 m. No consideration has been given to dynamic cables in the water column or laying on the seabed surface. However, as indicated above, there is no research currently available on this topic and therefore we are unable to offer any proposed mitigation measures at this stage.

We support the commitment to implement piling soft starts and ramp up measures, which we agree will reduce the risk of injury to mobile sound-sensitive fish species in the immediate vicinity of piling operations, by encouraging fish to move away from the activity.

As part of the Piling Strategy and Cable Plan we would expect consideration to be given to diadromous fish interests. In particular, final details of the route of the export cable and construction should consider key migration periods, duration and construction methods. For the wind farm array itself, the construction method statements should consider habitat disturbance and loss and sediment release. Lastly, for both the wind farm and the export cable, consideration of reducing/monitoring EMF effects should be included as part of the cable plan development.

**Monitoring**

*eDNA sampling*

As detailed in section 10.3.1, baseline eDNA sampling was not undertaken for the Green Volt project. However, the applicant has offered to contribute, by way of monitoring, to a Joint Industry Project or a collaborative research programme which supports the development of offshore eDNA sampling, should such a project be established. Given that Green Volt are one of the more advanced projects within the INTOG process, Green Volt have an opportunity to lead on such a Joint Industry Project through monitoring work by reporting on progress and advocating proposed best practice. Further, we recommend that eDNA sampling and monitoring should take place, whether or not it is part of a Joint Industry Project.

## NatureScot ADVICE FOR GREEN VOLT OFFSHORE WIND FARM

## APPENDIX D – MARINE MAMMAL INTERESTS

Marine mammal interests are considered in Chapter 11 of the Green Volt EIAR. Our advice on the minke whale feature of the Southern Trench nature conservation Marine Protected Area (ncMPA) is included in this Appendix. Our advice in relation to Annex I habitats assessed in the accompanying Report to Inform Appropriate Assessment (RIAA) is presented in Appendix E.

### Marine mammals – clarification required

We welcome the detailed marine mammal impact assessments. However, we request the following clarification around the cumulative impact from construction noise for grey seals. Note that this would not change the outcome of our advice.

In the non-technical summary and Chapters 11 and 21 of the EIAR, a 'Moderate Adverse – significant' effect has been identified for grey seal, for the "*Cumulative disturbance from underwater noise during piling and construction at the Project*". However, in Table 20.4 of Chapter 20, which discusses transboundary and cumulative impacts, it states that there were no effects greater than Negligible identified for marine mammals. We request clarification of this discrepancy.

NatureScot do not anticipate the residual disturbance effect from underwater noise from piling during the construction of the Offshore Substation Platform (OSP) to be of particular significant adverse cumulative effect to grey seal, or for the other marine mammal species assessed, when the proposed embedded mitigation measures are applied.

### Baseline

Section 11.6 provides a clear and detailed summary of existing data and results of site-specific surveys. We have no substantive comments on the baseline data that would affect the conclusions of the EIAR.

We welcome the use of the most precautionary values used in the EIA for each species, as well as the inclusion of humpback whale as requested in the Scoping Opinion.

### Assessment approach

From Chapter 5, we note that suction piling and drag anchors anticipated to be deployed for the floating wind turbines reduces the impacts from noise during construction. However, this novel technology introduces uncertainty on how to assess the potential impacts from exposed dynamic cables, including EMF effects and secondary entanglement, to marine mammals, along with the more typical impact pathways that we have seen assessed in previous fixed offshore wind farm projects.

*Disturbance risk*

We welcome the planned mitigation measures anticipated to reduce disturbance throughout all stages of development set out in section 11.7.1 of Chapter 11. However we note that for UXO clearance, the use of bubble curtains in water depths greater than 60 m has not been documented to be successful to our knowledge. Therefore, we would advise the use of low order deflagration techniques, particularly in deeper

waters where bubble curtains cannot be deployed or may not be effective. This is in line with the Joint Position Statement published in January 2022[11].

NatureScot agree with the use of the Scottish Marine Wildlife Watching Code to minimise potential disturbance particularly during the cable installation, however, we advise that it should also be followed within and beyond 3 km from the coast. In addition, we would recommend that three marine mammal observers (MMOs) be on board for all vessel movements throughout each stage of the Project to minimise disturbance to all marine mammal species.

*Entanglement*

We welcome the inclusion of this pathway through the EIA, either from direct entanglement of mooring lines and dynamic cables or through secondary entanglement from ghost fishing gear or marine debris generally. We are content with the mitigation measures surrounding this impact and support regular checks and reporting of entanglement throughout the operations and maintenance phase of the Project.

Entanglement is an impact pathway associated with floating offshore wind technology and we advise a strategic approach in the monitoring and mitigation of this impact pathway on marine mammals in Scottish waters, as outlined in our research report[12].

*Electro-magnetic Fields (EMF)*

Effects from EMF on marine mammals during the operational and maintenance stage of the Project have resulted in Minor Adverse, as shown in Table 11.84, with references made to Appendix 9.2 - EMF Assessment Report. However, in Appendix 9.2 EMF has not been considered in relation to dynamic cables, of which it is anticipated there will be two per turbine. We acknowledge that although cetacean species are thought to be less sensitive to the effects of EMF, this is based on research typically focused on buried cables.

Given that over 60% of ScotWind projects are proposing to utilise floating technology with exposed dynamic cables, we advise that the potential effects from EMF should be monitored on a strategic level in order to build a baseline understanding on the potential impacts to marine mammals.

**Designated sites**

*Southern Trench ncMPA*

The Southern Trench ncMPA is designated to protect minke whales. There is the potential for various activities associated with the development to impact upon the minke whale feature, and as such potential impacts on the Southern Trench ncMPA have been scoped in. However, the assessment of potential impacts on the MPA is carried out using the EIA assessment methodology (i.e. determining significant

[11] UK Government (2022) *Marine environment: unexploded ordnance clearance joint interim position statement*. Policy Paper. Available at: https://www.gov.uk/government/publications/marine-environment-unexploded-ordnance-clearance-joint-interim-position-statement/marine-environment-unexploded-ordnance-clearance-joint-interim-position-statement (Accessed 23 March 2023)

[12] Benjamins, S., Harnois, V., Smith, H.C.M., Johanning, L., Greenhill, L., Carter, C. and Wilson, B. (2014). *Understanding the potential for marine megafauna entanglement risk from renewable marine energy developments*. Scottish Natural Heritage Commissioned Report No. 791.

effect). It does not take into consideration the conservation objectives of the site, as detailed in the Conservation and Management Advice[13], or the correct tests.

However, based on the information provided, we advise that the proposed activities are capable of disturbing, but insignificantly, the minke whale feature of the Southern Trench ncMPA.

Although minke whale are present year-round in the Southern Trench ncMPA, they have been recorded in higher densities from June to October. Furthermore, the distribution of minke whales is more concentrated in the northern areas of the MPA. We acknowledge that previous offshore wind projects have successfully built export cables through the Southern Trench ncMPA. However, it is anticipated that multiple ScotWind and INTOG projects surrounding the MPA propose to make landfall near Peterhead. As such, it is advised that a strategic approach across developers is taken to coordinate and reduce the geophysical survey effort, the number of vessels and even the number of cables to be deployed in the area. This will ultimately reduce the risk of disturbance to minke whales from construction activities.

*Moray Firth SAC*

Bottlenose dolphin is a qualifying interest of the Moray Firth SAC. Our advice in respect of this qualifying interest is contained in Appendix E. We advise that the key impact pathway is the laying of the export cable, but this can be mitigated and we would expect this to be addressed as part of a cable management plan.

We welcome the use of precautionary values in terms of reference populations and calculating the percentage of the population potentially impacted by an activity necessary for the development of the Project. In Table 11.56 on page 108 of Chapter 11, we agree that for bottlenose dolphins there could be a Moderate adverse effect significance for "*Possible Mild Behavioural Response from Piling at the Windfarm Site*" in terms of the Greater North Sea Management Unit (GNS MU) (10.10%). However, we query the use of the Coastal East Scotland (CES) MU for bottlenose dolphin, when considering the piling in the offshore array area, approximately 80km offshore. We disagree with including the CES MU reference population for any activities taking place in the offshore array area. We highlight that the CES MU is relevant for consideration for the inshore cable route activities and mitigation should be addressed in a Cable Plan and should consider those activities that may disrupt bottlenose dolphin passage in their known transit area round the East Coast.

**Underwater noise impact assessment**

Our overarching underwater noise advice is as follows:

- The non-technical summary concludes that the construction noise is not significant, and is temporary and localised. We agree with this conclusion.
- We agree that prior to any geophysical surveys, a European Protected Species (EPS) Risk assessment will be required (to consider both inshore and offshore areas).
- Prior to any unexploded ordnance (UXO) clearance activities, a Marine Licence and EPS licence will be required. Mitigation methods can be agreed once the number and size of potential targets is refined.

[13] NatureScot (2020) *Conservation and Management Advice Southern Trench MPA*. Available at: https://sitelink.nature.scot/site/10477 (Accessed 16 March 2023)

We provide more detailed underwater noise advice below.

*Underwater noise modelling*

The Underwater Noise Technical Report (Appendix 9.1) has been conducted by Seiche and is consistent with previous reports which we have reviewed.

For marine mammals, the report uses the Southall *et al*. (2019)[14] reference for impact thresholds. For disturbance, they present various single thresholds based on the National Marine Fisheries Service (NMFS) thresholds (Table 3.4 in Section 3.3.2) and the dose response curve (Graham *et al*., 2017[15] and Whyte *et al*., 2020[16]).

We agree that there are no standard agreed disturbance thresholds. We are content that this assessment does use dose response curves for piling (and for other impulsive sources for harbour porpoise) and that, otherwise, fixed thresholds are used (see table 11.18 in Chapter 11 of the EIAR). We are content that Whyte *et al.* (2020) is used for seals.

The NMFS (2005)[17] level B harassment threshold of 120/160 dB (rms) is old, but due to the lack of alternatives, its use for seals and cetaceans is acceptable. A single unweighted threshold is, at best, a broad indication given the differences in inter and intra-species behavioural responses. We highlight that there has been an update to the harbour porpoise dose response curve in Graham *et al*. (2019)[18]. However, the Graham *et al*., 2017 paper is likely to be more precautionary, as the 2019 paper shows a decreasing response to piling over time.

We are content with the source levels used for all activities as presented in Section 4 of the Underwater Noise Technical Report. However, we highlight that for piling, the model has used the conversion factor (CF) methodology, specifically 4% CF decreasing to 0.5% CF. We remain unconvinced on this methodology and await the Marine Scotland Science led research into Energy Conversion Factors.

*Piling*

As shown in Tables 11.49 and 11.50 in section 11.7.5.3 of the EIAR, the worst case injury range (PTS) prediction for marine mammals is just over 1 km (SELcum) and 234m (SPL pk). We are content that the implementation of the proposed mitigation would reduce injury risk to Negligible.

The disturbance assessment for marine mammals in Chapter 11 concludes a Minor Adverse effect, based on 160 dB rms fixed threshold. For EIA purposes, we agree with this conclusion.

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[14] Southall, B.L., Finneran, J.J., Reichmuth, C., Nachtigall, P.E., Ketten, D.R., Bowles, A.E., Ellison, W.T., Nowacek, D.P. and Tyack, P.L. (2019). *Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects*. Aquatic Mammals 45 (2): 125–232.

[15] Graham, I.M., Pirotta, E., Merchant, N.D., Farcas, A., Barton, T.R., Cheney, B., Hastie, G.D and Thompson, P.M. (2017). *Responses of Bottlenose Dolphins and Harbour Porpoises to Impact and Vibration Piling Noise during Harbor Construction*. Ecosphere 8 (5): e01793.

[16] Whyte, K.F., Russell, D.J.F., Sparling, C.E., Binnerts, B., & Hastie, G.D. (2020). *Estimating the effects of pile driving sounds on seals: Pitfalls and possibilities.* The Journal of the Acoustical Society of America, 147(6), 3948–3958. https://doi.org/10.1121/10.0001408

[17] NMFS (2005). *Scoping Report for NMFS EIS for the National Acoustic Guidelines on Marine Mammals*. National Marine Fisheries Service.

[18] Graham I.M., Merchant N.D., Farcas A., Barton T.R., Cheney B., Bono S. and Thompson P.M. (2019). *Harbour porpoise responses to pile-driving diminish over time*. Royal Society Open Science, 6(6). http://doi.org/10.1098/rsos.190335

We query use of 140 dB rms for 'possible mild behavioural response' in Table 11.50, section 11.7.5.3. The prediction of 204 BND individuals disturbed (Table 11.56, section 11.7.5.3) seems to be unrealistically high, particularly for the Coastal East Scotland Management Unit (CES MU).

We do not recommend the use of an Effective Deterrent Radius (EDR) for piling. However, the EIAR has presented a range of available methods to detail estimated impacts, and so there is sufficient information provided. Chapter 11 also usefully refers to the developing literature resource from the Moray Firth.

We agree that the use of a Marine Mammal Mitigation Plan (MMMP) for the piling will minimise the risk of Permanent Threshold Shift (PTS) onset.

We also agree that piling is unlikely to affect the minke whale feature of the Southern Trench ncMPA due to the distance of the proposed piling activity from the ncMPA.

*Other activities*

The underwater noise assessment in Chapter 11 of the EIAR also considers impacts from general activities, and includes vessels and cable trenching. As shown in Table 11.62 in section 11.7.5.4, the worst case disturbance from 'other' activities for marine mammals was from cable trenching (fixed threshold approach) at 9.3 km.

We recommend that all disturbance sources identified in the EIAR for marine mammals should be included into the construction EPS licence when being prepared for submission.

We query the statement in Table 11.21 in section 11.7.5.1 of the EIAR that vibrocore sampling / core penetration tests (CPT) does not emit noise. This method uses mechanical vibrations which would generate some noise, so to classify this method as no noise is incorrect. We expect this to be relatively low noise levels and it is likely to be non-impulsive (similar to a vessel).

*UXO clearance*

In the Underwater Noise Technical Report (Appendix 9.1), the modelling for UXO clearance used 0.08 kg and 0.5 kg charge sizes for the low order scenario, and 300 kg and 1000 kg charge sizes in the high order detonation (as shown in Table 4.2). Modelling was based on Soloway and Dahl (2014), which is commonly used[19]. The assessment is based on the Unexploded Ordnance Threat and Risk Assessment (Appendix 5.3) conducted by 6 Alpha Associates, which reviewed the potential for UXO presence in the area.

Chapter 11 of the EIAR only presents the results for low order UXO deflagration based on the 0.08 kg assessment, which is not the worst case. We would have expected the 0.5 kg clearance shot to have been considered within Chapter 11 of the EIAR. However, there is scope for this to be refined for the UXO EPS licence application.

Chapter 11 refers to the preference of using low noise alternatives for UXO clearance in section 11.7.5.2. This is in agreement with our joint interim position. The National Physical Library (NPL) Protocol for In-Situ Underwater Measurement of Explosive Ordnance Disposal for UXO is also a useful reference[20]. Our view

[19] Soloway, Alexander G. and Dahl, P.H. (2014). *Peak Sound Pressure and Sound Exposure Level from Underwater Explosions in Shallow Water*. The Journal of the Acoustical Society of America 136 (3): EL218–23.
[20] National Physical Library (2020) *Protocol for In-Situ Underwater Measurement of Explosive Ordnance Disposal for UXO. Version 2*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955204/NPL_2020_-_Protocol_for_In-Situ_Underwater_Measurement_of_Explosive_Ordnance_Disposal_for_UXO.pdf (Accessed 23 March 2023)

remains that whilst evidence of noise levels and impact from these new low noise techniques is still limited, the Risk Assessment and mitigation should be based on the worst case high order detonation.

The use of Effective Deterrence Rates (EDRs) and Temporary Threshold Shift (TTS) is noted throughout Chapter 11. We currently do not recommend the use of EDRs for UXO assessment, and instead prefer the use of TTS as per Southall (2007)[21] as a proxy for disturbance. An extract from Southall (2007) is provided below for context:

*"Due to the transient nature of a single pulse, the most severe behavioral reactions will usually be temporary responses, such as startle, rather than prolonged effects, such as modified habitat utilization. A transient behavioral response to a single pulse is unlikely to result in demonstrable effects on individual growth, survival, or reproduction. Consequently, for the unique condition of a single pulse, an auditory effect is used as a de facto disturbance criterion. It is assumed that significant behavioral disturbance might occur if noise exposure is sufficient to have a measurable transient effect on hearing (i.e., TTS-onset). Although TTS is not a behavioral effect per se, this approach is used because any compromise, even temporarily, to hearing functions has the potential to affect vital rates by interfering with essential communication and/or detection capabilities. This approach is expected to be precautionary because TTS at onset levels is unlikely to last a full diel cycle or to have serious biological consequences during the time TTS persists. Because this approach is based on an auditory phenomenon, the exposure criteria can reasonably be developed for entire functional hearing groups (as in the injury criteria) rather than on a species-by-species basis".*

Section 11.7.1.2 presents some detail of potential mitigation to be used for UXO clearance activities. The mitigation specifics can be refined when the Risk Assessment and EPS licence are submitted if the project is consented. Our comments in relation to the mitigation proposed are as follows:

- Currently we are of the view that mitigation should be tailored as if it were a high order scenario. It may be that when we come to assess the EPS Risk Assessment and licence, our knowledge has improved so that we are able to agree mitigation tailored to the low noise alternative scenario.
- We agree with a maximum of 60 minutes Acoustic Deterrent Device (ADD) activation time (because there is no evidence that a longer duration of ADD activation results in the continued movement of animals out of the area). Should high order be used, then there may be a residual injury risk. This would therefore require further mitigation to be agreed.
- We currently recommend the use of three MMOs due to the overall area of search and the location and types of vessels typically used. Usually there is a smaller vessel close to the UXO location tasked with the clearance operation and a larger vessel standing off about 1 km from the UXO location. This therefore requires the MMO on the stand-off vessel to be able to see clearly at least 2 km. We recommend that for this area to be monitored effectively, a third MMO should be positioned on the opposite side of the mitigation zone.
- We welcome the suggestion of bubble curtains as additional mitigation, this should be discussed during the development of the Marine Mammal Mitigation Plan. See our earlier comments regarding the ineffectiveness of bubble curtains in water depths greater than 60 m.

[21] Southall, B. L., A. E. Bowles, W. T. Ellison, J. J. Finneran, R. L. Gentry, C. R. Greene Jr., D. Kastak, D. R. Ketten, J. H. Miller, P. E. Nachtigall, J. W. Richardson, J. A. Thomas, and P. L. Tyack, (2007) *Marine Mammal noise exposure criteria: initial scientific recommendations,* Aquatic Mammals. Vol 33.

- Should UXOs be found within the cable route, and in close proximity to the Southern Trench MPA, additional mitigation could include a seasonal restriction to avoid the key sensitive period for minke whales (June – October).

*Geophysical site surveys*

The specifics of any geophysical survey is not yet known, therefore the applicant has used examples of commonly used geophysical survey equipment for the assessment in section 11.7.5.1 of the EIAR. Directivity has been included in the model, and so PTS impact ranges are all within a few hundred meters. As a fixed threshold approach has been used for disturbance (i.e. not weighted and not species specific), the range is the same across all species. The maximum disturbed range is 1.4 km. All disturbance predictions are well within the 5 km EDR buffer approach, since directivity is accounted for.

We note that much of the text relating to disturbance and EPS is written from the offshore legislative perspective. For the development site and most of the cable route this is applicable. However, the cable route will travel within inshore waters. We highlight that the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), otherwise known as the Habitats Regulations, apply within 12 nm of the Scottish coast. Regulation 39(2) of this legislation provides additional protection to cetaceans from disturbance which makes it an offence to deliberately or recklessly disturb *any* cetacean. Therefore, if there is the potential for disturbance to a single individual, then an inshore EPS licence may be required. The Scottish Government's guidance on the protection of EPS from disturbance and injury in Scottish inshore waters is a useful resource[22].

We expect EPS licensing to be considered for geophysical surveys under both inshore and offshore legislation. The assessment and mitigation for the geophysical surveys can be refined once more detail on methods are known.

*Operational noise*

The Underwater Noise Technical Report (Appendix 9.1) considers operational noise, and much of the text included relates to the noise caused by the mechanics of the turbine itself (as the dominant source). The noise levels presented are all from studies prior to 2016 and are monopile examples. There is little discussion about the potential of noise from floating substructures and there is no reference to any work done at Hywind or Kincardine. The assumption given is that the noise transmitted into the environment from a fixed foundation would be worse than a floating one, because there is more resonating structure in the water column. There is no commentary about the potential noise resonating from the floating structures, nor snapping or strumming from the moorings or cables.

We highlight that there is a gap in knowledge regarding the noise emissions during the operation of floating wind turbines. As such, it is likely that noise monitoring may be required.

We agree that mitigation required can be discussed and agreed via the EPS licensing procedure and piling strategy development in due course.

[22] Scottish Government (2020) *The protection of Marine European Protected Species from injury and disturbance. Guidance for Scottish Inshore Waters.* Available at: https://www.gov.scot/publications/marine-european-protected-species-protection-from-injury-and-disturbance/ (Accessed 23 March 2023)

*Cumulative impacts*

As detailed in section 11.8 of the EIAR, the Cumulative Impact Assessment (CIA) approach for marine mammals is to estimate impact radii for all projects identified, and then using density estimates to predict the number of individuals at risk of disturbance. The numbers by species are then summed and compared as a percentage to the reference population in order to determine significance. This assessment has been completed without using the Interim Population Consequences of Disturbance Model (iPCOD).

The method of summing used to estimate the disturbance range (using TTS thresholds where there is no other information available, EDRs where these are available across the following activities: geophysical, UXOs and piling) might over-estimate the impact and might be why disturbance from underwater noise during piling, other construction activities and vessels was concluded to have a moderate adverse effect for grey seals.

Lastly, we note that GreenVolt is unlikely to contribute significantly to the overall cumulative impact assessment.

## NatureScot ADVICE FOR GREEN VOLT OFFSHORE WIND FARM

## APPENDIX E – HABITATS REGULATIONS APPRAISAL - REPORT TO INFORM APPROPRIATE ASSESSMENT

We have reviewed the Report to Inform Appropriate Assessment (RIAA) for the proposed Green Volt offshore wind farm. We provide advice, as outlined below, on the European sites and their qualifying features that have been screened in at the likely significant effect (LSE) stage, either alone or in-combination with other plans or projects.

This response does not incorporate our advice on ornithological interests. This will be provided separately in a response to be submitted no later than 17th April 2023.

### Annex I habitats

The following protected site is considered in the RIAA for Annex I habitats:

- Buchan Ness to Collieston SAC

The Buchan Ness to Collieston SAC is designated for its vegetated sea cliffs. This site was originally screened in due to the possibility of open trenching to bring cables ashore within the NorthConnect Parallel landfall option. This could have resulted in potential impacts of physical disturbance and temporary habitat loss of intertidal habitat and accidental spills and pollution events on the SAC habitat.

However, although the NorthConnect Parallel landfall option passes through this SAC, the applicant has confirmed that HDD will be used at landfall instead of open trenching, which will avoid the habitat. In addition, construction works will adhere to best practice and legislation to prevent spillage and pollution events. As such, no likely significant effect was identified, as there is no potential impact pathway or impact on the qualifying features of this SAC. Further, no additional in-combination effects were identified. Therefore, the Buchan Ness to Collieston SAC was screened out for further assessment. We agree with this approach.

### Diadromous fish

The following protected sites are considered in the RIAA for diadromous fish, following advice provided during pre-application:

- River Dee SAC (Atlantic salmon and freshwater pearl mussel)
- River Spey SAC (Atlantic salmon, sea lamprey and freshwater pearl mussel)
- South Esk SAC (Atlantic salmon and freshwater pearl mussel)
- River Oykel SAC (Atlantic salmon and freshwater pearl mussel)
- River Morriston SAC (Atlantic salmon and freshwater pearl mussel)

Freshwater pearl mussel have also been considered, as part of their life stage is reliant on Atlantic salmon and/or sea trout, and there is the potential for them to be indirectly impacted by the proposal.

We note that for diadromous fish species there is limited knowledge of distribution and behaviour of these species in the marine environment to enable us to robustly identify connectivity or appotioning back to natal SAC sites. For example, the precise migration routes of adult or juvenile Atlantic salmon or direction taken by emigrating adult European eels (not a SAC qualifying interest, but critically endangered) 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.

Key resources relied on for assessment purposes include Malcolm et al., 2010 and Marine Scotland 2018. Both of these reports primarily relate to Atlantic salmon (with some information on sea trout and European eel in the first of these). As a general point, it is disappointing that, in 2023, the key summary document that is being used to describe adult fish movements, and inferred movements of post-smolts and other diadromous species in the coastal areas of south-east Scotland, is still that of Malcolm et al. (2010). The salmon fishery statistics including rod catch data, whilst a useful monitoring resource, provide very little about the movement and distribution of Atlantic salmon in the marine environment.

The ScotMER evidence map[23] process for diadromous fish confirms the evidence gaps particularly with respect to spatial and temporal distribution as well as uncertainty around migration routes and connectivity to protected sites. The ScotMER process is an important vehicle for helping to address these evidence gaps and uncertainties.

*Assessment Approach*

During the previous round of offshore wind farm applications it was acknowledged that there was an absence of research and evidence to assist in the assessment of impacts and conclusions in respect of appropriate assessment. Our knowledge of diadromous fish, distribution and behaviour in the marine environment is extremely limited, preventing our ability to advise on connectivity and therefore impacts to populations within natal rivers (a necessary step within HRA assessment process). The recently updated ScotMER Evidence Map confirms these remaining gaps and uncertainties, and we have concluded that, 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. Meanwhile, we are working with the ScotMER Evidence Map receptor group on identifying research proposals that could address these knowledge and evidence gaps including the recently commissioned project on 'Diadromous fish in the context of offshore wind – state of the science and future research'.

*Assessment conclusions*

Due to the absence of robust evidence about the behaviour and distribution of these species in the marine environment, as indicated above, we cannot advise on these species under the HRA process. We have reviewed the information provided within both the RIAA and EIAR and consider that this wind farm alone and cumulatively is unlikely to have significant adverse effects, when considered within an EIA context. Having considered the applicant's information and based on our knowledge from previous marine developments, we advise that mitigation can be deployed to reduce any potential effects from the construction of the export cables. We advise further monitoring is required in respect to inter-array cables

[23] Scottish Government (2023) *Diadromous Fish ScotMER Receptor Group*. Available at: https://www.gov.scot/publications/diadromous-fish-specialist-receptor-group/ (Accessed 27 March 2023)

(EMF effects) and underwater noise of operating floating wind farms. This may be best addressed through strategic studies.

We will continue to advocate within the ScotMER process for research proposals to increase the knowledge and evidence base from which to inform assessments. We also advise that offshore wind developers should be contributing to research as well as other initiatives such as the Wild Salmon Strategy Implementation Plan and any other strategies that are developed for diadromous fish interests.

*Mitigation*

As part of the Piling Strategy and Cable Plan we would expect consideration to be given to diadromous fish interests. In particular, final details of the route of the export cable and construction should consider key migration periods, duration and construction methods. For the wind farm array itself, the construction method statements should consider habitat disturbance and loss and sediment release. Lastly, for both the wind farm and the export cable, consideration of reducing/monitoring EMF effects should be included as part of the cable plan development.

**Marine mammals**

The following protected site is considered in the RIAA for marines mammals:

- Moray Firth SAC (bottlenose dolphin)

We agree with the protected sites assessed for marine mammals in the RIAA. There is the potential for disturbance to bottlenose dolphins which transit along the East Coast to and from the Moray Firth SAC. The key sources for disturbance will be during the nearshore aspects of the export cable, including vessel noise, geophysical surveys, cable laying, trenching and HDD and potential for rock mattress placement. However, mitigation to reduce these effects can be addressed within a cable plan. Due to the temporary nature of the activity, and the relatively localised nature of the disturbance (and low risk of injury) we agree with the conclusion reached of no adverse effect on site integrity.

With regard to in combination effects, we are aware of a number of potential other export cables and interconnectors being planned in the waters around Peterhead. We consider there should be strategic planning around the activities associates with these cables, including geophysical surveys, to further reduce the effects on bottlenose dolphins from these cumulative activities.

# NatureScot - Ornithology

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19 April 2023

Our ref: CNS REN OSWF Green Volt - INTOG

By email only

Dear Lauren,

**GREEN VOLT OFFSHORE WIND FARM**

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009**

Thank you for consulting NatureScot on the Section 36 and Marine Licence applications submitted by Green Volt Offshore Wind Limited.

Our advice on the ornithological interests assessed within the Environmental Impact Assessment Report (EIA Report) and Report to Inform an Appropriate Assessment (RIAA) for this project is outlined below. Thank you for granting a further extension to enable us to consider these aspects fully.

Our advice on the natural heritage interests (other than ornithology) assessed within the EIA Report and RIAA for this project was submitted to Marine Scotland on 31st March 2023.

Our advice on ornithological interests detailed in this letter is in relation to the offshore infrastructure (seaward of MHWS) only, as the onshore components are subject to a separate application.

## NatureScot advice

### Ornithology assessment approach

As the Green Volt project is being progressed within the INTOG Plan process, novel issues have arisen due to the application being further offshore and it being the first application. For some instances within the application where approaches have deviated from our guidance, this was agreed as part of pre application stakeholder discussion and agreement. However, in other aspects, there has been deviation from our guidance or previously accepted casework practices for Scottish offshore wind proposals and this was neither discussed nor agreed. We detail these aspects and our consideration of the assessment in our advice below, identifying those aspects of most concern in order.

### Ornithological interests

*Population Viability Analysis*

As part of the impact assessment for ornithology interests, the identified significant impacts are normally used within population viability analysis (PVA). In this application, we are uncertain of the assessed outputs due to the following:

- Not all predicted impacts for species and designated sites have been run through PVA, and we have been uncertain at times in the assessment of being able to follow the sequence and/or some of the values used, as they differ across different parts of the assessment. We are concerned about the transparency of the approach and therefore the overall findings.
- An approach with generic scenarios has been used in the approach to PVA, rather than using specific values.
- Predicted impacts from the project in-combination resulting in over a 1% increase in the baseline mortality rate of the SPA population - this 1% increase being the level regarded by the applicants as the threshold for which further investigation of predicted impacts through PVA is required. We disagree with this and advise that a 0.02 percentage point change in productivity / survival is what should trigger PVA.
- The applicant has not relied on the outputs of the Counterfactual for Population Size. Although these are presented, they are not used in their final assessment, instead relying solely on the Counterfactual Growth Rate. This is contrary to our guidance[1].
- The PVA models have been run for 35 years. We advise that the results of the PVA should be run for both 25 years and 35 years to aid comparability with other offshore wind projects as well as to reflect the proposed operational period.

*In Combination Assessment*

For the in combination assessment we advise the following:

[1] https://www.nature.scot/doc/guidance-note-11-guidance-support-offshore-wind-applications-marine-ornithology-recommendations

- The applicant has stated that the in combination assessment was completed prior to the submission of the Berwick Bank application, therefore Berwick Bank has not been included in the assessment, yet Berwick Bank has been in the public domain and the scoping opinion issued prior to the Green Volt application being submitted. We have recently objected to the Berwick Bank application due to adverse effects on site integrity (AEoSI) to multiple seabird species within the UK European Site Network, some of which overlap with the species and sites assessed in this application. We therefore advise that for this application, it is likely that, in combination with Berwick Bank, any of the SPAs / species where we have concluded AEoSI for Berwick Bank (either alone or in combination) and where there is likely to be any additional impact from Green Volt, we will also be considering a conclusion of AEoSI in combination for Green Volt.
- However, we are unable to reach any definitive conclusions to provide our advice on in-combination effects, as the Green Volt RIAA (Table 7.69, page 240) has concluded for numerous species and SPAs that "*assessment alone concluded potential for a trivial and inconsequential level of effect, that would be well within the error margins of the assessment, and therefore no potential for any contribution for an in-combination effect. Furthermore, there is no proposed overlap with other projects where data is available within a reasonable distance based on expert judgement that would result in a possible in-combination impact*".
- The applicant has only undertaken a few SPA level PVAs and for generic level of impact, not the estimated project alone or in combination impacts. Therefore, they do not provide any project specific counterfactuals, to enable us to assess and provide any advice.

*Collision Risk Modelling*

While many of the input parameters used for the collision risk modelling are those identified within our guidance[2], we advise the following deviations:

- Gannet flight speed – the applicant uses 13.33 and we advise 14.9.
- We have some concerns over Standard Deviation calculations for density estimates used in collision risk modelling. This is not a commonly used method - our understanding is that it uses 25% of the 95% confidence limits. Typically the 95% confidence limits are 1.96 SD from mean for a normal distribution. However, we noted that range around the mean appeared to be skewed, suggesting it was not equally distributed and therefore we are not sure if this approach was used for reasons related to this. We request clarification from the applicant on this point, including citation and rationale.

*Displacement*

We note that that the RIAA presents different displacement values from those that we advise:

[2] https://www.nature.scot/doc/guidance-note-7-guidance-support-offshore-wind-applications-marine-ornithology-advice-assessing

- Displacement is considered during the construction phase at 50% of the constructed rate. This was not agreed or requested as part of the Scoping and has not been undertaken as part of the assessment process to date in Scotland.
- NatureScot is aware of much of the literature cited within the RIAA in relation to displacement rates. However, we are currently awaiting a number of key studies (including post-consent monitoring from Scottish windfarms) to be published before we review and update our advice on displacement rates. Therefore, our current advice (as stated in our guidance note[3]) should be used within this assessment.
- The conclusions reached were based on the applicant's displacement and mortality rates, not the rates advised by NatureScot.
- The applicant has used a 1% threshold on mortality to consider impacts. Our advice is to use 0.02 percentage point change in mortality as a threshold for undertaking PVAs, which can generate counterfactuals for population growth rate and population size, which we would use to draw conclusions on population level impacts.

*Apportioning*

The apportioning within Annex 2 of the RIAA appears to show a mix of colonies used within the tables (table 2 vs Appendix 1). Instead, we require to see the apportioning for each SPA and any non-SPA colonies clearly identified. Our understanding of table 2 is that it indicates the totals for the whole SPAs, with the appendix table suggesting that Seabird Monitoring Programme (SMP) sub-colonies were used and apportioned and then totalled for whole SPAs. Could the applicant confirm if this understanding is correct? We also ask the applicant to confirm the year of the data used for the totals to ensure this is consistent across colonies.

*Combining collision and distributional responses*

The applicant has raised concerns over the precaution in combining collision impacts with distributional response impacts. Due to the evidence publicly available we maintain this is currently the best approach for considering species, such as gannet and kittiwake which are susceptible to both impacts. We are aware of work being undertaken by Natural England on this, and once this is publicly available, we will be reviewing our guidance on this aspect

*Highly Pathogenic Avian Influenza (HPAI)*

A number of seabird species have been significantly affected by HPAI although the full magnitude of impacts has not yet been realised (Philip and Tyler, 2022)[4]. This has implications not just for the baseline (reference population) but for the context within which impacts from the wind farm are

[3] https://www.nature.scot/doc/guidance-note-8-guidance-support-offshore-wind-applications-marine-ornithology-advice-assessing

[4] Philip, E. and Tyler, G. 2022. *Weathering the storm: a policy response. Surveillance and monitoring responses to Highly Pathogenic Avian Influenza*. Workshop at Cork Seabird Conference (2022) - YouTube

assessed. Uncertainty remains as to the scale of impact: where and for which species and for how long. This necessitates greater precaution in our assessment, and we will be able to provide further advice on this aspect once we have been able to fully assess the Green Volt application both on its own and in combination with other developments.

*Additional information required*

In order to progress our assessment of this application, we require both additional information from the applicant and also clarification on the points we have raised above. We suggest the most efficient way to do this is by way of a meeting with the applicant to clarify the assessment process and ensure transparency in the information to be used in the assessment process.

We also advise that based on our consideration of the application to date, there are aspects we wish to highlight, where we are in agreement with parts of the assessment or wish to raise other more minor points. These are detailed below.

*Connectivity*

- We note that guillemot and razorbill connectivity was updated to include East Caithness Cliffs SPA, North Caithness Cliffs SPA and Copinsay SPA (for guillemot) during the breeding season, based on directional data from Digital Aerial Surveys (DAS) data and tracking data. We welcome the applicant's consideration of this given the novelty around INTOG sites and considering developments further offshore.
- Gannet is not a named assemblage feature for Troup, Pennan and Lion's Head SPA, it is a notified feature of Gamrie and Pennan Coast SSSI. Therefore, we advise gannet should just be considered through the EIA.
- European storm petrel - we are content with the consideration of the different data sources and conclusions reached on this species.

*Screening out of species with no records or low numbers*

- We concur with the updated screening after completion of the 24 months of DAS where a number of species were not recorded in any surveys and therefore the SPAs were screened out. These included:
    - herring gull (Buchan Ness and Collieston Coast SPA),
    - lesser black-backed gull (Forth Island SPA, Ribble and Alt Estuaries SPA, Skomer, Skokholm and the Seas of Pembrokeshire SPA),
    - European shag (East Caithness Cliffs SPA, Forth Island SPA), and
    - Arctic skua (Fetlar SPA).
- We also agree based on the small number of observations with the conclusions reached on red-throated divers, observed once in June 2020, and great skua in August 2021.

*Entanglement with mooring lines*

- We consider the key entanglement issue for birds is primarily if ghost fishing gear get snagged with mooring lines. However, we are unable to quantify this without knowing the likely depths at which ghost fishing may become entangled and whether this overlaps with any birds foraging in the area. We request that further information is presented around this aspect and what mitigation may be undertaken to identify:
    - If ghost gear entanglement does occur
    - The actions that will be taken to remove any ghost fishing gear.

*Cable Corridor*

- One cable corridor option (North Connect Parallel) makes landfall within Buchan Ness to Collieston Coast SPA. Page 29 of the RIAA outlines that the detailed evaluation of landfall locations is to be presented within the Onshore EIA report. This will require assessment of any impacts on SPA to be included. However, we note that in section 7.1.1.1 para 286 that work at the seaward HDD emergence will not be undertaken during the breeding season to avoid disturbance to breeding seabirds within Buchan Ness to Collieston Coast SPA. As this is below MHWS, this should be conditioned so as to avoid disturbance during the breeding seasons.
- The RIAA concludes no AEoSI due to habitat loss relating to the cable corridor as it is within the consented NorthConnect HVDC Link corridor. This should still have been assessed, with the findings of the North Connect appropriate assessment used to help justify the conclusion being reached.

*Migratory Birds*

An assessment has been undertaken to consider the impacts on migratory waterbirds. The assessment was conducted based on the WWT (2014) report[5]. Whilst there are aspects of this report we agree on the use of, we have not applied the conclusions on migrating seabirds to any Scottish casework - this report is currently being updated as part of ScotMER, but is not yet available. We agree with the conclusions reached for all non-seabird migratory species that there will be no adverse effect on site integrity to any species from any SPA / Ramsar site.

**Conclusion**

As stated above, we advise that further information and clarification is required before we can provide our final ornithological advice.

[5] WWT. (2014). *Migratory species collision risk modelling assessments. Strategic assessment of collision risk of Scottish offshore wind farms to migrating birds*. A Report to the Scottish Government

**Further information and advice**

We hope this advice is helpful. Please contact Jenna Lane (jenna.lane@nature.scot) or myself in the first instance for any further advice.

Yours sincerely,

Erica Knott

Marine Sustainability Manager, Sustainable Coasts and Seas

erica.knott@nature.scot

NLB

Northern Lighthouse Board

84 George Street
Edinburgh EH2 3DA

Tel: 0131 473 3100
Fax: 0131 220 2093

Website: www.nlb.org.uk
Email: enquiries@nlb.org.uk

Your Ref: MSL 00010230 / 00012231 / 00010232 + S36 Consent
Our Ref: AL/OPS/ML/O6_21_777

Ms Lauren Cowan
Marine Licensing Casework Officer
Marine Scotland – Marine Planning and Policy
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

8 February 2023

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

**MARINE (SCOTLAND) ACT 2010**
*The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017*

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

***APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST***

Thank you for your e-mail correspondence dated 3rd February 2023 relating to the Marine Licence and Section 36 applications submitted by **Green Volt Offshore Wind Ltd** for consent to construct and operate Green Volt Offshore Windfarm and associated transmission infrastructure, located approximately 80km east of the Aberdeenshire coast.

It is noted that the proposed Green Volt Offshore Windfarm will comprise up to 35 WTGs and associated substructure, with a maximum overall capacity of 560 MW. One fixed bottom OSP will be installed within the array area. Two export cables will connect the windfarm directly to the mainland and to the nearby Buzzard platform. It is also noted that a final landfall position is yet to be decided between locations either north or south of Peterhead.

As only an indicative layout and construction programme is provided within Technical Appendix 14.1 (Navigational Risk Assessment), it is not possible to provide specific lighting and marking advice for both the construction and operational phases. The developer is required to submit a Lighting and Marking Plan for approval, covering all stages of installation and operation, prior to the commencement of construction works.

Northern Lighthouse Board have no objection to the proposed development, and advise that the applicant continue to engage with Northern Lighthouse Board with regard to navigational safety for the development, with particular reference to the lighting and marking requirements.

Yours sincerely

[Redacted]

Peter Douglas
Navigation Manager

NorthConnect

NORTHCONNECT
CONNECTING RENEWABLES

Stephanie Morrison
Marine Licensing & Consenting Casework Manager
Marine Scotland – Marine Planning & Policy
Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

**27th March 2023**

| | |
|---|---|
| **Project** | **: NorthConnect** |
| **Subject** | **: Consultation – Green Volt Offshore Windfarm, East of Aberdeenshire Coast** |
| **Reference** | **: Marine Licence Applications 00010230, 00010231, 00010232** |
| **Our reference** | **: NCGEN-LE-NCL-MSC-0002** |

Dear Ms Morrison,

With regards to the Green Volt Offshore Windfarm proposals, for a Section 36 Consent and three associated marine licences, thank you for the opportunity for NorthConnect to provide a consultation response.

NorthConnect has no objections to the proposals to construct and operate Green Volt Offshore Windfarm, and associated transmission infrastructure, situated east of the Aberdeenshire coast.

NorthConnect recognises that one of the cable route options to shore runs parallel to the NorthConnect corridor. However, we do not see any conflict between the projects as long as Flotation Energy continue to communicate and work with NorthConnect in a constructive manner.

Yours sincerely,

[Redacted]

Fiona Henderson
UK Consenting Lead
[Redacted]
Fiona.Henderson@NorthConnect.no

NSTA

| | |
|---|---|
| **From:** | Stuart Walters (North Sea Transition Authority) |
| **To:** | MS Marine Renewables |
| **Subject:** | RGreen Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023 |
| **Date:** | 03 March 2023 16:21:52 |

Dear Lauren,

Please find a response from the NSTA on the Section 36 and Marine Licences for the Greenvolt Offshore Windfarm project.

The NSTA do not have many additional comments from those already included in this document from the pre-application consultation. The only generic point we want to convey to the applicant is that the application area crosses over with areas offered in the 33rd Offshore Oil and Gas Licensing Round. The NSTA is in the process of reviewing the 33rd Licensing Round applications and will be awarding licences later this year. Were any licences to cross over with a windfarm lease we would likely have clauses attached to the licenses to have due regard for other users so there is no action on the Greenvolt project as this stage but the applicant should be aware of the potential for future seismic survey activity and should maintain engagement with other petroleum licensees and other users were licence crossovers to occur at a later date.

I have an additional query for Marine Scotland (not for the windfarm applicant) in the table of comments under Chapter 17 there was a previous comment logged from the NSTA in the table on pages 5-6 related to the EIA Consultation on 8 June 2022. Was this a comment we submitted to Marine Scotland and if so are you able to retrieve it? I and other colleagues don't recognise where it came from and though it may be accurate we want to understand who responded just to ensure our future replies are coordinated. If it is something sent to the applicant themselves then I can discuss with Greenvolt Project where it originated from.

Many Thanks,

Stuart Walters | Senior Policy Manager – Energy Transition Policy | Telephone: [Redacted]

Ofcom

**From:** Spectrum Licensing
**To:** MS Marine Renewables
**Cc:** Morrison S (Stephanie); Cowan L (Lauren)
**Subject:** Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences
**Date:** 03 February 2023 14:03:31

Dear Sir / Madam,

Thank you for contacting us.

Please note that Ofcom no longer provides a dedicated windfarm co-ordination facility.

Instead, stakeholders can now access Ofcom licence information via the Ofcom Spectrum Information System (SIS).
The SIS includes licence data for UK fixed links that are assigned and co-ordinated by Ofcom.
When using the SIS it should be noted that, there are a number of frequency bands that are now authorised on a block basis i.e. these bands are managed and assigned by the licensees themselves and the individual link information for these bands (where a band is being used for fixed links) is not held in Ofcom's licensing and assignment database nor published on the SIS. Our website has further information on these bands and the licensees details.

In addition Scanning Telemetry links, used by the utilities and other services (operating in the bands 457.5 – 458.5 MHz & 463 – 464 MHz), are managed externally by Atkins Limited and the Joint Radio Company (JRC), who can be contacted as follows:

Atkins Limited
200 Broomielaw
Glasgow
G1 4RU
Email: windfarms@atkinsglobal.com

JRC (Joint Radio Company)
Friars House
Manor House Drive
Coventry
CV1 2TE
Email : windfarms@jrc.co.uk
Website: www.jrc.co.uk/what-we-do/wind-farms

Please contact us if you need any further assistance.

Yours sincerely,

Ofcom Spectrum Licensing
Spectrum.licensing@ofcom.org.uk

ref:_00D58H42o._5004I1WutEZ:ref

# Peterhead Local Fishermen's Organisation

| | |
|---|---|
| **From:** | [Redacte |
| **To:** | Morrison S (Stephanie) |
| **Cc:** | Cowan L (Lauren); MS Marine Renewables |
| **Subject:** | Re: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation Ended - Nil Return Assumed |
| **Date:** | 14 March 2023 09:48:40 |

Hi Steph, as far as I am aware there are at least 4 surveys taking place at the same time in the Peterhead area,

Sent from Outlook for Android

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**From:** Stephanie.Morrison@gov.scot <Stephanie.Morrison@gov.scot>
**Sent:** Monday, March 13, 2023 4:18:33 PM
**To:**[Redacted]
**Cc:** Lauren.Cowan@gov.scot <Lauren.Cowan@gov.scot>; MS.MarineRenewables@gov.scot <MS.MarineRenewables@gov.scot>
**Subject:** RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation Ended - Nil Return Assumed

Hi Arthur,

Please can you confirm if you intend to submit a response to this consultation? Please let me know by the end of this week on 17 March 2023 otherwise a nil return will be assumed.

Kind regards,

Stef

Stef Morrison
Marine Licensing & Consenting Casework Manager
**Marine Scotland** - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

Mobile:[Redacted]
Email: Stephanie.Morrison@gov.scot
Website: http://www.gov.scot/Topics/marine/Licensing/marine

*Please note I work from home Monday - Friday. If you receive this email late at night or early in the morning it means I am working flexibly. Flexibility works for me, but please do not feel that you should have to pick this up outside of your working hours.*

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**From:** Morrison S (Stephanie)
**Sent:** 07 March 2023 08:51
**To:** [Redacted]
**Subject:** RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation Ended - Nil Return Assumed

Good morning Arthur,

You were included in the original consultation email dated 3 February 2023 which is below – you can find a link to the application documentation in the email. Please

can you let me know if you would like to make comment on the application? If so, please can you propose a date by which you will be able to do so and I can consider your request to extend the consultation?

Kind regards,

Stef

Stef Morrison
Marine Licensing & Consenting Casework Manager
**Marine Scotland** - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

Mobile:[Redacted]
Email: Stephanie.Morrison@gov.scot
Website: http://www.gov.scot/Topics/marine/Licensing/marine

*Please note I work from home Monday - Friday. If you receive this email late at night or early in the morning it means I am working flexibly. Flexibility works for me, but please do not feel that you should have to pick this up outside of your working hours.*

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**From:**[Redacted]
**Sent:** 06 March 2023 17:55
**To:** MS Marine Renewables <MS.MarineRenewables@gov.scot>
**Subject:** Re: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation Ended - Nil Return Assumed

This is the first I have heard of this green volt wind farm, can you forward any previous correspondence
Kind regards Arthur

Sent from Outlook for Android

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**From:** MS.MarineRenewables@gov.scot <MS.MarineRenewables@gov.scot>
**Sent:** Monday, March 6, 2023 9:48:46 AM
**To:** MS.MarineRenewables@gov.scot <MS.MarineRenewables@gov.scot>
**Cc:** Lauren.Cowan@gov.scot <Lauren.Cowan@gov.scot>; Jessica.Malcolm@gov.scot <Jessica.Malcolm@gov.scot>; Stephanie.Morrison@gov.scot <Stephanie.Morrison@gov.scot>
**Subject:** Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation Ended - Nil Return Assumed

Dear Sir/Madam,

I am writing to you regarding the below consultation which ended yesterday on 5th March 2023. MS-LOT has not received a response from you, and therefore a nil return has been assumed.

Kind regards,

Stef

Stef Morrison

Marine Licensing & Consenting Casework Manager
**Marine Scotland** - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

Website: http://www.gov.scot/Topics/marine/Licensing/marine

---

**From:** MS Marine Renewables
**Sent:** 03 February 2023 13:47
**To:** MS Marine Renewables <MS.MarineRenewables@gov.scot>
**Cc:** Cowan L (Lauren) <Lauren.Cowan@gov.scot>; Morrison S (Stephanie) <Stephanie.Morrison@gov.scot>
**Subject:** Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023

Dear Sir/Madam,

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

**MARINE (SCOTLAND) ACT 2010**
*The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017*

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

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST.**

On 20 January 2023, Green Volt Offshore Wind Ltd ("the Applicant") submitted an application to the Scottish Ministers, in accordance with the above legislation, to construct and operate Green Volt Offshore Windfarm and associated transmission infrastructure located east of the Aberdeenshire coast. This application is subject to an environmental impact assessment and, as such, the application is accompanied by an Environmental Impact Assessment report ("EIA report") which has been submitted by the Applicant and will be taken into consideration in determining the application.

Copies of the application documentation provided by the Applicant, including the EIA report, can be downloaded from:

Green Volt Offshore Windfarm | Marine Scotland Information

There are four application pages, as follows:

Section 36 Consent – Green Volt Offshore Windfarm – East of Aberdeenshire Coast
- Marine Licence – Green Volt Offshore Windfarm – Generating Station – East of Aberdeenshire Coast – 00010230
- Marine Licence – Green Volt Offshore Windfarm – Offshore Transmission Infrastructure (1 of 2) – East of Aberdeenshire Coast – 00010231
- Marine Licence – Green Volt Offshore Windfarm – Offshore Transmission Infrastructure (2 of 2) – East of Aberdeenshire Coast – 00010232

If you wish to submit any representations in response to the consultation regarding the above application please ensure that these are submitted to the Scottish Ministers, in writing, to MS.MarineRenewables@gov.scot, no later than **05 March 2023**. If you are unable to meet this deadline please contact the Marine Scotland Licensing Operations Team ("MS-LOT") on receipt of this e-mail. If you have not submitted a response by the above date, MS-LOT will assume a 'nil return'.

Kind regards,

Lauren

Lauren Cowan
Casework Officer - Consenting
(she/her)

**Marine Scotland** - Marine Planning & Policy
Scottish Government **|** Marine Scotland **|** 5 Atlantic Quay **|** 150 Broomielaw **|** Glasgow **|** G2 8LU

Email: lauren.cowan@gov.scot
Mobile:[Redacted]
Website: http://www.gov.scot/Topics/marine/Licensing/marine

My normal working pattern is 8-16, Monday to Friday.

Email addresses for Marine Scotland - Licensing Operations Team( MS-LOT) are MS.MarineRenewables@gov.scot for marine renewables correspondence or MS.MarineLicensing@gov.scot for all licensing queries.

RSPB Scotland

Marine Scotland Licensing Operations Team

Marine Scotland

By email: MS.MarineRenewables@gov.scot

24th April 2023

Dear Lauren,

**APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989, MARINE LICENCES UNDER PART 4 OF THE MARINE (SCOTLAND) ACT 2010 AND MARINE AND COASTAL ACCESS ACT 2009 TO CONSTRUCT AND OPERATE GREEN VOLT OFFSHORE WINDFARM, EAST OF ABERDEENSHIRE COAST.**

Thank you for consulting RSPB Scotland on the above application to construct and operate an offshore windfarm off the Aberdeenshire Coast. We understand this project would compromise offshore floating structures and offshore transmission infrastructure and seeks to provide oil and gas platforms in the Outer Moray Firth with renewable electricity, namely the Buzzard Oil and Gas Platform. We further understand that the project would also be connected to the shore and any excess electricity generated could be transmitted to the National Grid via a landfall connection in the vicinity of Peterhead (TBC). The array would consist of 35 turbines, each with a rated capacity of 14 to 16GW and a minimum blade tip clearance of 22 meters.

RSPB Scotland recognise that climate change is the greatest threat to nature, and we support the transition to renewable energy. We consider that offshore wind has a part to play in a just transition from Scotland's dependence on fossil fuels.

The RSPB has a number of methodological concerns with the manner in which the assessment has been carried out. These will result in an underestimation of the scale of impact and include:

- Inadequate consideration of potential impacts on European Storm petrels
- The incorrect use of Population Viability Analysis output metrics in assessment of significance of impact
- The lack of a Population Viability Analysis for gannet and kittiwake for combined mortalities arising from collision and distributional change
- The lack of inclusion of Berwick Bank offshore wind farm in the cumulative assessment

As a result of these concerns, the RSPB is unable to reach conclusion of the significance of impacts in combination with other projects for the following species SPA populations:

- Buchan Ness and Colliston Coast SPA guillemot populations
- Troup, Pennan and Lion's Head SPA gannet and guillemot populations
- North Caithness Cliffs SPA guillemot population

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**rspb.org.uk**

- Forth Islands SPA gannet population
- Hermaness, Saxa Vord and Valla Field SPA gannet population
- Mousa SPA European storm petrel population
- Sule Skerry and Sule Stack SPA European storm petrel population

Despite our methodological concerns, in a number of cases the predicted impacts are so severe that the RSPB is able to conclude that there will be significant Adverse Effects on Site Integrity on the following SPA species populations arising out of mortality from the Green Volt wind farm, in-combination with other projects:

- Buchan Ness and Colliston Coast SPA kittiwake population
- East Caithness Cliffs SPA kittiwake and guillemot populations
- Troup, Pennan and Lion's Head SPA kittiwake population

As such, RSPB Scotland objects to the proposed development

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

Yours sincerely,

[redacted]

Senior Marine Conservation Planner
RSPB Scotland

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**rspb.org.uk**

**Methodological concerns**

*Inadequate consideration of potential impacts on European Storm petrels*

Our concerns around the impacts on European storm-petrels are twofold; the potential inadequacy of the survey method to detect birds, and the lack of consideration of attraction to lights and consequent disorientation. European Storm-petrels depart from and return to the colony at night and will forage both diurnally and nocturnally (D'Elbee and Hemery, 1997[1], Bolton, 2021[2]). However, the times when the digital aerial surveys were carried out are highly constrained and it is therefore very likely that key activity periods have been missed and so an incorrect usage of the site by storm petrels was recorded. Furthermore, as has been highlighted in a recent review, (Deakin *et al*., 2022[3]), it is unclear whether morphologically similar species such as European and Wilson's Storm-petrel can be successfully identified to species level by digital aerial survey.

The attraction of Procellariformes to light is well recorded, for example observers in both the UK and Canada have reported that hundreds, or even thousands, of seabirds, predominantly species of storm-petrel, have been killed by attraction to the gas flares of hydrocarbon platforms. Wind farms are required to be illuminated in accordance with marine navigation regulations and as such, it seems very likely that storm-petrels will be attracted to these lights (Deakin *et al.,* 2022[3]). Furthermore, once attracted, there is evidence that storm-petrels will become disoriented. Such evidence includes: the grounding of fledgling European Storm-petrels in lit areas of the village on Hirta, St Kilda (Miles *et al*., 2010[4]) and the grounding of European Storm-petrels onto rocks lit by researchers' head torches (Albores-Barajas *et al*., 2011[5]). Once attracted to the vicinity (i.e. within several tens of metres) of a light source, birds seem unable to escape and become vulnerable to collision. Light-induced disorientation may cause birds to circle light sources for many hours (Gauthreaux and Belser, 2006[6]) with obvious implications for collision risk, as birds both spend longer in the

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[1] D'Elbee, J. & Hemery, G. 1997. Diet and foraging behaviour of the British Storm Petrel Hydrobates pelagicus in the Bay of Biscay during summer. Ardea, 85, 1-10.
[2] Bolton, M. 2021. GPS tracking reveals highly consistent use of restricted foraging areas by European Storm-petrels *Hydrobates pelagicus* breeding at the largest UK colony: implications for conservation management. *Bird Conservation International,* 31, 35-52.
[3] 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. Report to Marine Scotland Science
[4] Miles, W., Money, S., Luxmoore, R. & Furness, R. W. 2010. Effects of artificial lights and moonlight on petrels at St Kilda. Bird Study, 57, 244-251
[5] Albores - Barajas, Y., Riccato, F., Fiorin, R., Massa, B., Torricelli, P. & Soldatini, C. 2011. Diet and diving behaviour of European Storm Petrels Hydrobates pelagicus in the Mediterranean (ssp. melitensis). Bird Study, 58, 208-212
[6] Gauthreaux, S. A. & Belser, C. G. 2006. Effects of artificial night lighting on migrating birds. In: Rich, C. & Longcore, T. (eds.) Ecological Consequences of Artificial Night Lighting. Washington: Island Press

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proximity of turbines and there being a larger number of occasions when an individual bird may pass through the rotor-swept area.

For these reasons, we do not think the assessment has correctly considered potential impacts on European Storm-petrels and are **unable to rule out significant adverse impacts** on the populations of Mousa SPA and Sule Skerry and Sule Stack SPA

*The incorrect use of Population Viability Analysis output metrics in assessment of significance of impact*

While there are two PVA output metrics presented in Annex 1 of the Report to Inform the Appropriate Assessment, the Counterfactual of Population Size (CPS) and the Counterfactual of Population Growth Rate (CPGR), on CPGR is used in the assessment of the significance of impacts. This is contrary to a specific recommendation of a review of output metrics, following work by the RSPB (Green *et al*., 2016)[7], commissioned by the Joint Nature Conservation Committee (JNCC) and carried out by the British Trust for Ornithology[8] (BTO). That review recommended the ratio of growth rates are presented to quantify the consequence of impacts at a population level and the ratio of population sizes to present these impacts in an easily understandable context. A further review was commissioned by Marine Scotland Science and carried out by the Centre for Ecology and Hydrology[9], and the conclusions as to utility of output metrics was similar.

As we argued previously, the ease of understanding of the CPS is crucial to its utility; the numbers given by the CPGR are less understandable outwith a population modelling context. To use the theoretical example quoted by the BTO, a CPS of 0.515 means the population size of a breeding colony is expected to be 51.5% (i.e. half) of what it would have been in the absence of the development after 25 years, which is easy to understand. Whereas the corresponding CPGR, 0.973, means that the annual population growth rate at the breeding colony declines from 0.994 to 0.967. The actual scale of the consequence of this is hard for a non-specialist to comprehend, that of the CPS is not. This issue of comprehension is crucial in reducing

[7] Green, R. E., Langston, R.H. W., McCluskie, A., Sutherland, R., & Wilson, J. D. (2016). Lack of sound science in assessing wind farm impacts on seabirds. Journal of Applied Ecology, 53(6), 1635-1641

[8] Cook, A.S.C.P. & Robinson, R.A. (2016) Testing sensitivity of metrics of seabird population response to offshore wind farm effects, JNCC Report No. 553, JNCC, Peterborough, ISSN 0963-8091

[9] Jitlal, M., Burthe, S., Freeman S. and Daunt, F. (2017) Testing and Validating Metrics of Change Produced by Population Viability Analysis (PVA). Scottish Marine and Freshwater Science Vol 8 No 23, 210pp. DOI: 10.7489/2018-1

**RSPB Scotland Headquarters**
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uncertainty, as lack of clarity in presenting results acts to increase uncertainty, and the consequent need for precaution (Masden *et al*., 2015[10], Seale *et al*., 2021[11], 2023[12].

The Applicant is incorrect in disassociating the two metrics, arguing that this is necessary because of the use of density independent formulations. However, the two metrics are very similar, the only key difference is that CPGR does not include the length of time that the wind farm will be operational. They are both outputs of the same modelling process and will therefore both be equally affected if density dependence is included or not in the formulation. The only difference is that because CPGR is a smaller number, the relative change between density independent and density dependent formulations will appear to be small. The consequent change to the impacted population will be identical with both metrics. The importance of including both metrics was acknowledged by the Secretary of State for Business, Energy & Industrial Strategy of the UK Government in a letter to the Applicants for Hornsea Project 4, explicitly asking for both metrics to be provided by the Applicant[13] .

*The lack of a Population Viability Analysis for gannet and kittiwake for combined mortalities arising from collision and distributional change*

The Applicant has, correctly, presented the result of mortalities arising from distributional change and collision combined for kittiwake and gannet, but has not then used these for the subsequent population analysis, for the populations of affected SPAs. This prevent a full assessment being carried out and results in an inability to reach conclusions of significance for these species

*The lack of inclusion of Berwick Bank offshore wind farm in the cumulative assessment*

An Application for Consent under Section 36 of the Electricity Act 1989 (as amended), Marine Licenses under part 4 of the Marine (Scotland) Act 20120 and Marine and Coastal Access Act 2009 to construct and operate Berwick Bank Offshore Windfarm, off the coast of East Lothian and the Scottish Borders was submitted on 19/01/2023. This application predicts significant impacts on a number of seabird species, both arising through the project alone and in-combination. The scale of impact means that any subsequent application,

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[10] Masden, E. A., McCluskie, A., Owen, E., & Langston, R. H. (2015). Renewable energy developments in an uncertain world: the case of offshore wind and birds in the UK. Marine Policy, 51, 169-172

[11] Searle, K.R., Jones, E.L., Trinder, M., McGregor, R., Donovan, C., Cook, A., Daunt, F., Humphries, L., Masden, E., McCluskie, A. & Butler, A. 2021. JNCC Report on the Correct treatment of uncertainty in ornithological assessments. JNCC Report No. 677, JNCC, Peterborough, ISSN 0963-8091

[12] Searle, K. R., O'Brien, S. H., Jones, E. L., Cook, A. S. C. P., Trinder, M. N., McGregor, R. M., ... & Butler, A. (2023). A framework for improving treatment of uncertainty in offshore wind assessments for protected marine birds. *ICES Journal of Marine Science*, fsad025.

[13] EN010098-002228-Hornsea Project Four Request for information 16 Dec 2022.pdf (planninginspectorate.gov.uk)

such as Green Volt, will need to consider these impacts in their cumulative assessment. This has not been done, and it means that RSPB Scotland is unable to reach conclusion of the significance of impacts in combination with other projects for the following species SPA populations:

- Buchan Ness and Colliston Coast SPA guillemot populations
- Troup, Pennan and Lion's Head SPA gannet and guillemot populations
- North Caithness Cliffs SPA guillemot population
- Forth Islands SPA gannet population
- Hermaness, Saxa Vord and Valla Field SPA gannet population
- Mousa SPA European storm petrel population
- Sule Skerry and Sule Stack SPA European storm petrel population

**Scale of Impact**

As detailed above, RSPB Scotland has a number of methodological concerns with the Assessment, that have meant we are, in a number of cases the predicted impacts are so severe that the RSPB is able to conclude that there will be significant Adverse Effect on Site Integrity (AEoSI) on the following SPA species populations arising out of mortality from the Green Volt wind farm, in-combination with other projects. These are detailed below

*Kittiwake*

Using the methods advocated by NatureScot, Marine Scotland Science and the RSPB during scoping, the impacts arising from collision mortality associated with Green Volt Offshore Wind Farm in combination with other projects, not including Berwick Bank Offshore Wind Farm, are predicted to result in the annual population growth rate of kittiwake at the Buchan Ness and Colliston Coast SPA declining, with a ratio of impacted to unimpacted population growth rate of 0.996. This means that after the 35-year lifetime of Green Volt Offshore Wind Farm, the population size of the SPA is expected to be **89.5%** of what it would have been in the absence of the development. As such, **RSPB Scotland consider potential AEoSI cannot be ruled out for kittiwake at the Buchan Ness and Colliston Coast SPA**

Using the methods advocated by NatureScot, Marine Scotland Science and the RSPB during scoping, the impacts arising from collision mortality associated with Green Volt Offshore Wind Farm in combination with other projects, not including Berwick Bank Offshore Wind Farm, are predicted to result in the annual population growth rate of kittiwake at the Troup, Pennan and Lion's Head SPA declining, with a ratio of impacted to unimpacted population growth rate of 0.996. This means that after the 35-year lifetime of Green Volt Offshore Wind Farm, the population size of the SPA is expected to be **87.2%** of what it would have been in the absence of the development. As such, **RSPB Scotland consider potential AEoSI cannot be ruled out for kittiwake at the Troup, Pennan and Lion's Head SPA**

Using the methods advocated by NatureScot, Marine Scotland Science and the RSPB during scoping, the impacts arising from collision mortality associated with Green Volt Offshore Wind Farm in combination with other projects, not including Berwick Bank Offshore Wind Farm, are predicted to result in the annual population growth rate of kittiwake at the East Caithness Cliffs SPA declining, with a ratio of impacted to unimpacted population growth rate of 0.992. This means that after the 35-year lifetime of Green Volt Offshore Wind Farm, the population size of the SPA is expected to be **75.1%** of what it would have been in the absence of the development. As such, **RSPB Scotland consider potential AEoSI cannot be ruled out for kittiwake at the East Caithness Cliffs SPA**

*Guillemot*

Using the methods advocated by NatureScot, Marine Scotland Science and the RSPB during scoping, the impacts arising from distributional change associated with the presence of Green Volt Offshore Wind Farm in combination with other projects, not including Berwick Bank Offshore Wind Farm, are predicted to result in the annual population growth rate of guillemot at the East Caithness Cliffs SPA declining, with a ratio of impacted to unimpacted population growth rate of 0.996. This means that after the 35-year lifetime of Green Volt Offshore Wind Farm, the population size of the SPA is expected to be **88.5%** of what it would have been in the absence of the development. As such, **RSPB Scotland consider potential AEoSI cannot be ruled out for guillemot at the East Caithness Cliffs SPA**

**Highly Pathogenic Avian Influenza**

RSPB also wish to highlight the importance of the recent outbreak of Highly Pathogenic Avian Influenza (HPAI) on the seabird populations of the East Coast of the UK. This has strong implications for the assessment of offshore wind farms, particularly in the context of the robustness of the population to additional mortality and whether the population can continue to be considered in favourable conservation status.

The impact of HPAI on seabirds also has a bearing on the imperative for the Scottish Government to urgently reduce pressures on and introduce measures to build resilience in wild birds. Sandeel management for example is not only needed to build resilience in seabird populations but if delivered appropriately, could also be an anti-HPAI measure. Ensuring birds have as much food available as close to the colony as possible, both reduces nutritional stress (which should increase disease resilience) and will minimise distance travelled and inter-colony movements, as birds which fail during breeding are more likely to leave the colony early and visit other colonies before departing on migration, increasing the potential risk of spreading HPAI.

RYA

| | |
|---|---|
| **From:** | Pauline McGrow |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); Morrison S (Stephanie) |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation – Response Required by 05 March 2023 |
| **Date:** | 07 February 2023 09:55:56 |
| **Attachments:** | image002.png<br>image005.png |

Hi Lauren,

RYA Scotland has no comment to make about this section 36 application as the location is not in an area with much recreational traffic and those vessels that do pass through will be used to avoiding oil and gas rigs and platforms. We note the two proposed landfalls and confirm that neither would introduce issues for recreational boaters.

Kind Regards

Pauline

**Pauline McGrow**
**Senior Administrator**
**Mob: [Redacted]**

**Royal Yachting Association Scotland**
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**E: pauline.mcgrow@ryascotland.org.uk**

-

RYA Scotland, Caledonia House, 1 Redheughs Rigg, South Gyle, Edinburgh, EH12 9DQ
T: 0131 317 7388, Fax: 0844 556 9549

# Salamander

SALAMANDER
Powered by Ørsted and Simply Blue Group

**Simply Blue Energy (Scotland) Ltd.**
**E:** salamanderwind@simplyblueenergy.com
**W:** https://salamanderfloatingwind.com/

3 April 2023

**Response to the Green Volt Offshore Windfarm Offshore Marine Licence and Section 36 Applications and onshore EIA Scoping Report**

To whom it may concern,

Salamander Wind Offshore Wind Farm wishes to respond to the Green Volt Offshore Windfarm Marine Licence and Section 36 Applications and supporting application documents in relation to the offshore aspects and Onshore Scoping Report in relation to the onshore aspects of the Green Volt Project.

Salamander Offshore Wind Farm is being developed by Simply Blue Energy (Scotland) Limited (SBES), a joint venture partnership between Ørsted, Simply Blue Group and Subsea7.

Ørsted develops, constructs, and operates offshore and onshore wind farms, solar farms, energy storage facilities, and bioenergy plants, and provides energy products to its customers. Globally, Ørsted is the market leader in offshore wind and owns and operates the world's biggest offshore wind farms off the East Coast of the UK and thus we value the opportunity to participate in this consultation process.

Simply Blue Group is a leading blue economy developer focused on enabling a range of marine renewable energies. It develops pioneering blue economy projects – floating offshore wind, e-Fuels, wave energy, and low-impact aquaculture – all in harmony with the oceans.

Subsea7 is a global leader in the delivery of offshore projects and services for the evolving energy industry. Subsea7 creates sustainable value by being the industry's partner and employer of choice in delivering the efficient offshore solutions the world needs.

We would like to take this opportunity to clarify the stage of the Salamander Offshore Wind Farm:

• Salamander Offshore Wind Farm is being developed under the innovation track of the INTOG leasing round and submitted its EIA Scoping and HRA Screening Reports in February 2023;

• The Offshore Array Area for Salamander Offshore Wind Farm is approximately 35 km off the coast of Peterhead;

• The Offshore Export Cable is proposed to make landfall north of Peterhead, Peterhead, near Lunderton and Kirkton; and

• The Onshore Export Cable Corridor and other onshore infrastructure will be located north of Peterhead, close to the Export Cable landfall.

Comments to offshore aspects:

We note the Green Volt offshore aspects of the project description are detailed in the Environmental Impact Assessment (EIA) Report, including maximum design envelope parameters and location. The offshore array area is located approximately 33 km to the northeast of the proposed Salamander Offshore Wind Farm, and the proposed export cable corridor passes <1 km from the boundary of the Salamander Offshore Array Area. Green Volt is considering two potential landfalls, one to the south of Peterhead which would require a crossing of export cables (either Salamander crossing Green Volt or vice versa depending on construction timelines), and the other to the north of Peterhead which overlaps with the proposed Salamander Offshore

**Simply Blue Energy (Scotland) Ltd.**
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Export Cable Corridor and landfall. The Green Volt Offshore Export Cable also runs parallel to the northern boundary of the Salamander Offshore Array Area.

Comments to onshore aspects:

We further note that the project description for the onshore aspects including the maximum design envelope is still in development but will be fully detailed in the Onshore EIA Report, and will include indicative maximum project parameters, taking into account consultee feedback provided within the Scoping Opinion.

The Green Volt Offshore Windfarm Onshore Scoping Area for the northern cable route overlaps with the southern extent of the Salamander Offshore Wind Fam Onshore Scoping Area. In light of the above, there is the potential for our respective projects to interact and for both developments to have cumulative environmental effects on other receptors. We would therefore expect any EIA in respect of your onshore proposals to fully consider the potential effects on, and potential cumulative effects with, the Salamander Offshore Wind Farm.

Summary

Salamander Offshore Wind Farm is working with Green Volt through the Peterhead Developers Forum, including regarding offshore survey planning to minimise disruption to other sea users and wishes to engage in any discussions and be kept informed of your proposals so that the two projects may consider each other cumulatively through the development process.

We are very pleased to have had the opportunity to input at this stage and to work further with you in relation to potential offshore interactions between our two projects.

Yours sincerely,

Jennifer Brack
Consents Manager, Salamander Offshore Wind Farm

Cc'd:
Marine Scotland – Licensing Operations Team [Email only]
Aberdeenshire Council [Email only]
Green Volt [Email only]

Scottish Water

Wednesday, 08 February 2023

Marine Licensing
375 Victoria Road

Aberdeen

Development Operations
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Development Operations
Freephone Number - 0800 3890379
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Follow Us

Dear Customer,

**Green Volt Floating Offshore Wind, , Peterhead, AB42 0HY**
**Planning Ref: Green Volt**
**Our Ref: DSCAS-0080634-2SM**
**Proposal: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast**

**Please quote our reference in all future correspondence**

## Audit of Proposal

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced. Please read the following carefully as there may be further action required. Scottish Water would advise the following:

## Drinking Water Protected Areas

A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

## Surface Water

For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will not accept any surface water connections into our combined sewer system.

There may be limited exceptional circumstances where we would allow such a connection for brownfield sites only, however this will require significant justification from the customer taking account of various factors including legal, physical, and technical challenges.

In order to avoid costs and delays where a surface water discharge to our combined sewer system is anticipated, the developer should contact Scottish Water at the earliest opportunity with strong evidence to support the intended drainage plan prior to making a connection request. We will assess this evidence in a robust manner and provide a decision that reflects the best option from environmental and customer perspectives.

## General notes:

- 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

I trust the above is acceptable however if you require any further information regarding this matter please contact me on **0800 389 0379** or via the e-mail address below or at planningconsultations@scottishwater.co.uk.

Yours sincerely,

**Ruth Kerr.**
Development Services Analyst
PlanningConsultations@scottishwater.co.uk

## Scottish Water Disclaimer:

*"It is important to note that the information on any such plan provided on Scottish Water's infrastructure, is for indicative purposes only and its accuracy cannot be relied upon. When the exact location and the nature of the infrastructure on the plan is a material requirement then you should undertake an appropriate site investigation to confirm its actual position in the ground and to determine if it is suitable for its intended purpose. By using the plan you agree that Scottish Water will not be liable for any loss, damage or costs caused by relying upon it or from carrying out any such site investigation."*

SEPA

| | |
|---|---|
| **From:** | Planning.North |
| **To:** | MS Marine Renewables |
| **Cc:** | mailysbillet@flotationenergy.com; Cowan L (Lauren); Morrison S (Stephanie); Griffin, Zoe |
| **Subject:** | 8137 - SEPA Response - Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences |
| **Date:** | 10 February 2023 16:16:01 |

OFFICIAL

Dear Lauren Cowan,

Thank you for your consultation, which SEPA received by email on 3 February 2023.

We note that consent for the offshore and onshore elements of the Project are being obtained through separate planning and consenting routes and that the onshore EIA Report is due for submission in summer 2023. On 25 January 2023, SEPA provided a response (SEPA Ref. 7893) to Aberdeenshire Council for the EIA Screening/Scoping opinion for onshore elements under the reference ENQ/2023/0008.

Unfortunately, EIA and Section 36 Consents for offshore elements (purely within the marine environment) falls below our consultation thresholds. Please therefore refer to Table 1 of our standing advice which is available on our website - SEPA standing advice for the Department for Business, Energy and Industrial Strategy and Marine Scotland on marine consultations. We look forward to an opportunity to comment on the EIA submission for onshore work due in summer 2023.

If there is something specific not adequately covered by our standing advice, then please re-consult us specifying what advice you require.

Sincerely,
Aden

**Aden McCorkell**
Senior Planning Officer
North Planning Service, Scottish Environment Protection Agency (SEPA)
M: [Redacted]
Email: planning.north@sepa.org.uk
Our planning guidance: www.sepa.org.uk/environment/land/planning/

Please note my normal working days are Tuesday – Friday

*luchd-faighinn a bha còir am fiosrachadh fhaighinn. Chan fhaod neach sam bith eile cothrom fhaighinn air an fhiosrachadh a tha sa phost-d no a tha an cois a' phuist-d, chan fhaod iad lethbhreac a dhèanamh dheth no a chleachdadh arithist. Mura h-ann dhuibhse a tha am post-d seo, feuch gun inns sibh dhuinn sa bhad le bhith cur post-d gu postmaster@sepa.org.uk. Oifis chlàraichte: Taigh Srath Alain, Pàirc Gnothachais a' Chaisteil, Sruighlea FK9 4TZ. Fo Achd Riaghladh nan Cumhachdan Rannsachaidh 2000, dh'fhaodadh gun tèid an siostam puist-d aig SEPA a sgrùdadh bho àm gu àm.*

# SFF (inc. IFG)

Our Ref: MM/A&R

Your Ref:

6 March 2022

E-mail:

Scottish Fishermen's Federation
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**www.sff.co.uk**

Dear

**Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences Response**

The Scottish Fishermen's Federation is pleased to respond to this application 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 the NECrIFG has been consulted and agrees with this paper.

Throughout the paper, for simplicity, where it states the SFF objects, that means all of the above named organisations.

Acknowledging the need for the energy transition, the above mentioned organisations who represent circa 600 member fishing vessels fully acknowledge the need to decarbonise the Oil and gas sector as part of the North Sea Transition Deal (10% in 2025, 25% in 2027 and 50% in 2030, while reducing carbon emissions to zero by 2050).

However the construction, operation and maintenance of large scale offshore wind farms to achieve these goals and the CO2 emissions associated with these activities seem to contradict the rational around decarbonisation in the first instance.

Given that there is no guidance document for INTOG, there are two very bold and frequently used statements in the National Marine Plan and the Sectoral Marine Plan for Offshore Wind Energy.

Development can only be progressed if:

1. No alternative plan/sites available

2. Imperative reasons of overriding public interest (IROPI) that require development to proceed.

Addressing IROPI first off, construction of large-scale Offshore Wind Farms to decarbonise Oil and Gas Energy assets is NOT in the public interests as there is a clear alternative with a considerably less carbon footprint.

Technology for floating Offshore Wind Farms has NOT been tried and tested on a commercial scale and quoting from Flotation Wind at the Offshore Wind Conference 25th and 26th January 2023, developers must be prepared for failure.

Why prepare for failure when we have tried and tested technology of cable laying, using electricity from the grid to decarbonise the Oil and Gas Sector seems to be the common-sense approach, with the least financial, technological, and environmental risk.

Two Hundred and Twenty-Seven million pounds were paid out to offshore wind developers during 2022 as constraint payments, this has seen an increase of 60% on the previous year as Beatrice and Moray East are now fully operational. This figure will only increase as further developments come on stream (SeaGreen 2023, NnG 2024, Moray West 2025).

All this latent energy could be utilised to decarbonise the Oil and Gas assets that are not due to be decommissioned and would be a continuous supply of electricity as opposed to an intermittent one.

The spatial squeeze in the marine environment is well documented, as is food security, therefore the fishing industry are deeply concerned of acreage being used for Offshore Windfarms when there is a clear and risk-free alternative. The SFF & other fishing groups object to this application.

Regarding the development EIA, Chapter 13, table 13.1, the SFF would contend that the developers response to the 3 Fisheries policies, from Scotland's National Marine Plan (SNMP) is insufficient to give us any assurances about the future of fishing in the area. To date what renewables developers refer to as "embedded mitigation" is more akin to a list of Health and Safety measures, which does not equate to the Oxford Dictionary definition, viz "the action of reducing the severity, seriousness or painfulness of something". The SFF therefore objects to this application on the grounds that it contradicts the SNMP.

The developer at every opportunity states that the SE corner of the site was sacrificed to allow the Nephrops fishery to continue (eg page 70, para111, 21.3.7.52). The simple fact is that they can manage to deploy the windfarm within 95% of the original lease. The SFF would describe this as standard practice, which the developers choose to characterise as mitigation. P82, para 135 further pushes the claim that the area is only 0.1% of the available Nephrops grounds which is irrelevant.

This "embedded mitigation" is inevitably found in the "Fisheries Management and Mitigation Strategy" (FMMS) which emerges post consent when it is too late to discuss real mitigation. The SFF therefore objects to this application on the grounds that the FMMS is a meaningless document, unless there is a pre-consent agreement on its content.

Continuing on this theme, chapter 21 starts out claiming there is no need for mitigation for the effects of underwater noise on grey seals. This is contradicted in the Marine Scotland, Scotmer evidence map, where FF 07-2022 clearly shows there is a lack of knowledge on the impacts of underwater. The SFF therefore objects to this application as it is mis-representing the science.

Then, in 21.2.8, there are bold claims about the benefits of the development to socio-economics, tourism and recreation, which have no objective evidence to back them up. Indeed the SFF would object to the development on this basis, as it is our belief that the promise of jobs has been grossly overestimated in developments so far. Furthermore as we laid out in the opening paragraphs, the claim to be beneficial in terms of GHG is not demonstrable, so the SFF objects to it and the development.

Table 21.1 lists 11 possible receptors with none requiring mitigation. The SFF objects to this on the basis of the experience in the Robin Rigg farm, where turbines were/ are seriously undermined. If this project receives a licence there should be a consent condition to monitor relevant aspects here, to give clarity on the reality of the claims in the table.

The SFF would contend that the claims in tables 21.2, 21.3, 21.4 (especially!), 21.5 would need the same verification by consent condition monitoring.

In 21.3.3, paras 22-26 and 21.3.7 experience with developments so far tells us that cable laying/ route/ burial is fraught with problems, and all the surveys done are insufficient to give a clear forecast of how buried the cable will actually be. Therefore the SFF objects to these paragraphs, and would expect the development to engage in serious discussion about these matters, aiming for co-existence, prior to consent.

Paragraph 30 seems to assume MINNS would be dealt with on site, the SFF would object to this and seek a consent condition to have the developers attend to MINNS before vessels arrive in Territorial Waters. Failing this there should be a consent condition clarifying penalties for allowing this to happen.

21.3.7.55, regarding the final 2 bullet points are insufficient to protect commercial fishing, and requires the developer to engage with fishing at the earliest possible stage to ensure that the cable operation is clearly verified up to and including post lay over trawl trials. The SFF objects on this basis, and would insist that this is agreed pre-consent. Furthermore paras 60-63 needs to be more proactive with the fishing industry to ensure the aim for co-existence is achievable.

21.3.7.57, The SFF objects to this paragraph and the development unless the FMMS is agreed pre-consent.

Table 21.8 claiming most impacts as negligible or minor, does not take account of the possible loss of £5 million of fish. Neither does it use the full FLOWW BPG as that does not exclude mobile gear vessels from co-operation agreements. The SFF objects to the development on the basis of this subjective assessment, which must be remedied.

Table 21.9 on Cable Burial Risk Assessment, the SFF would recommend the Carbon Trust work on this is considered. Referring to the DSLP, there needs to be consideration of micro-siting to improve the cance of co-existence with fishing. Regarding Guard Vessels there needs to be clarity on the risk assessment, who is the employer and the criteria for fishing vessels to be eligible. Finally, looking at the VMP, the SFF object to agreeing it post consent, experience tells us that developers need to ensure all contracted vessels adhere to best practice in avoiding fishing pre-consent, and we would seek an assurance that they will do that.

Returning to chapter 13, on @ 13.2.3.1.10, the applicant erroneously states that the RFIG is responsible to 6nm.

Next @ 13.2.3.3.13 speaks about issues around sharing marine space, and needing a clear policy framework to try and avoid conflict. The SFF would object to the application on the grounds that there is no such clear framework.

Moving on to Table 13.2, page 10, responses to SFF comments:

First item is not really answered, but SFF would expect to see the Decommissioning Programme agreed pre-consent.

Second item avoids answering the SFF question?

Third item, the SFF is mindful that if even just the current projects leave their cables, that is going to be a huge amount of wire, and along with protection needs to be safely remedied to allow other legitimate users of the sea to pursue their livelihoods. SFF would seek a licence condition to reference that.

Fourth item, the SFF objects to this as it does not answer the question, leaving fishing bereft of yet another area.

Fifth item & sixth item, the developers consider displacement as negligible, but the SFF does not consider the permanent loss of £5 million has been properly considered or mitigated, in contravention of SNMP.

Seventh & eighth item, the developer ignores the safety aspects of our concerns regarding moorings and EMF.

Ninth item, the developer avoids answering the question about over-trawl trials, therefore the SFF would seek to have this agreed pre-consent.

From page 67 on, 13.7 makes some optimistic claims, which should not be considered until 2026 is done and dusted.

Looking at the list in 13.8.1.115, is simply a list of best practice to be followed. The SFF would expect to see a summary of the over-trawl trials which have become normal practice in Scottish, these are designed as a safety issue, and the SFF will object to this application if this not agreed by the developer. Furthermore if the developer cannot guarantee that all vessels in their employ will respect the rights of fishermen to work, especially inshore, the SFF will object to this application.

Similarly referring to chapter 13 para 118 and 21.3.7.58, the FMMS needs to be agreed pre-consent. The developer must ensure their vessels abide by COLREGS and SOLAS, and do not interfere with fishers at their work.

Regarding cables the SFF will object to the development if it tries to impose restrictions on fishing that align with the IPCC/ESCA guidelines. And finally the developer should be aware of the possibility of interfering with mobile gear vessels and include that in this para, not to do so would mean the SFF objecting to the project.

From 13.8.3.1 up to and including table 13.15 the developer is quite plainly trying to avoid any responsibility for their actions. Despite the fact that the grounds are lost to fishing, not one “Effect Significance” is higher than “minor adverse” which is absolutely not the effect it will have on the vessels which normally fish there.

The SFF would object to the development simply on the basis of para 239, the claim that commercial fisheries are pre-adapted to the windfarm industry is so far from reality that the SFF does not

recognise the outputs of this line, including tables up to page 122. This does naturally raise another objection.

In application 0001230, Page 25 lists 595583 tonnes of Temporary deposits, 42480m3 of Permanent stone and concrete and 134 km of Permanent cable. The SFF objects to the application on the lack of clarity as to the definitions of Temporary and Permanent, or a description of how the temporary substances will be removed? This will require a pre-consent agreement by the developer.

In application 00010231, page 25, it could be inferred that the project will be dredging the seabed to level it. The SFF objects to the application as Areas and Quantities are not specified. There is then a table stipulating that there will be permanent deposits of 39936 m3 rock and concrete and 60km of cables. The SFF would object to this as there is no decommissioning plan in place for this, which should be agreed pre-consent.

For application 10232, dredging is inferred, described as “seabed preparation activities”, leading to permanent deposits of 18324 m3 of rock and mattresses, and 17.4km of cables. Again there is no obvious consideration of how permanent this is, will it be removed at end of life? If so needs a decommissioning plan pre-consent. If it is to be left in situ, the developer needs to start thinking of payments to the fishing industry for their impacts.

Furthermore the export cable works, including “seabed preparation activities”, intend to permanently deposit 68886 m3 of rock and concrete, along with almost 70km of cable. There needs to be a clear plan agreed for these pre-consent as they will undoubtedly impact on fishing, so the developer needs to consider impact payments.

Regarding cables and EMF, Appendix 9.2 of the EIA, seems to be based on assumptions made about onshore cables. The SFF would object to this paper being used to justify awarding a licence, as in our engagement with MS Science, the message is quite clear, not enough is known about EMF seabed interactions to make any clear decision. The development itself states that the opinions of a marine specialist need to be sourced. As there is no substantive science on the matter the claim that they comply with Government policy is incorrect.

In the EIA, Site Selection in Chapter4 at 4.4.16 claims “Avoiding areas important for the commercial fishing industry”. The SFF object to the application on the basis of the potential loss of £5Million worth of commercial fish caught in the area annually, which is in line with many of the ICES squares in the area so to the SFF seems important. Then, again in the Site Selection paper, at 4.7 regarding the export cable the SFF would expect to see it buried to the greatest extent possible, in order to ensure safety, both for the cable and also fishermen. This should be agreed pre-consent.

Moving to Chapter 6, EIA methodology, it may follow legal advice but when every relevant fishery has no discernible negative impacts ascribed, the SFF would again focus on the potential loss of £5million to the commercial fishing industry. In that respect SFF are forced to object to the application on the grounds of insufficient consideration of the fleet’s activity contrary to the SNMP.

Yours sincerely, Malcolm Morrison

Sport Scotland

| | |
|---|---|
| **From:** | Gillian Kyle |
| **To:** | MS Marine Renewables |
| **Subject:** | Green Volt Offshore Wind Ltd – sportscotland response |
| **Date:** | 14 February 2023 16:55:15 |

Thank you for the below consultation.

Having reviewed the documents, I confirm **sport**scotland has no comments.

Kind regards
Gillian

**Gillian Kyle** | Planner | **sport**scotland
Doges | Templeton on the Green | 62 Templeton Street | Glasgow | G40 1DA

**t:** [Redacted]
**w:** www.sportscotland.org.uk
**My normal working days are Tuesday, Wednesday and Thursday.**

SSEN

Scottish Hydro Electric Transmission Plc
10 Henderson Road
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Mailys Billet
Offshore Consenter
**Flotation Energy Ltd**
12 Alva Street
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EH2 4QG

and

**Marine Scotland – Licence Operations Team**
By email: MS.MarineRenewables@gov.scot

27 March 2023

Dear Mailys

**REF: GREEN VOLT offshore windfarm Marine Licence Applications, 00010230, 00010231 and 0010232**

Thank you for the opportunity to respond to the marine licence applications submitted by Green Volt Offshore Wind Farm (REF applications 00010230, 00010231, and 00010232), and for arranging the consultation call on 6th March.

We welcome the consideration of the Eastern Green Link 2 (EGL2) project in these applications and confirm that the EGL2 Marine Licence Application was submitted to MS-LOT in July 2022 under application number 00009943.

We also note a final decision on landfall location for GreenVolt export cables(s) has not yet been determined with two possible options included within the marine licence applications. As part of our responsibilities to deliver and maintain critical national transmission infrastructure within and connecting the North of Scotland, which is required to support NetZero targets, Scottish Hydro Electric Transmission Plc (SHE Transmission) is currently developing subsea cable projects, including the Eastern Green Link (EGL) 2, EGL 3 and the Spital to Peterhead HVDC link, which interact with both the proposed 'St Fergus South' and 'NorthConnect Parallel' Landfall options.

SHE Transmission request that present and future cables, both power and telecoms, are given due consideration and that provision is maintained for cables to cross both export cables and the generation site, and that the freedom of the seas is maintained.

SHE Transmission remains committed to working with other legitimate users of the sea in a proactive manner, enabling both parties to deliver successful projects wherever reasonably possible, as such we request that ongoing discussion and consultation between both parties is maintained, and where necessary that proximity and crossing agreements are developed.

Please let me know if you have any questions in relation to the above.

Yours sincerely

[Redacted]

Felicity Arthur
Marine Consents Manager
Felicity.arthur@sse.com

Thistle Wind Partners

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Marine Scotland
Licensing Operations Team
375 Victoria Road
ABERDEEN
AB11 9DB

| | |
|---|---|
| Date | 10th March 2023 |
| Our ref | TWP Representation - Green Volt Offshore Wind Farm MLA |
| Your ref | NA |
| Copy | NA |
| Pages | 1/4 |
| Annexes | None |

Subject **REPRESENTATION RELATING TO MARINE LICENCE APPLICATIONS REFERENCES 00010230, 00010231, 00010232: GREEN VOLT OFFSHORE WINDFARM - GENERATING STATION - EAST OF ABERDEENSHIRE COAST**

Dear Sir/Madam

**REPRESENTATION RELATING TO MARINE LICENCE APPLICATION REFERENCE 00010230 GREEN VOLT OFFSHORE WINDFARM - GENERATING STATION - EAST OF ABERDEENSHIRE COAST**
**MARINE LICENCE APPLICATION REFERENCE 00010231 GREEN VOLT OFFSHORE WINDFARM - OFFSHORE TRANSMISSION INFRASTRUCTURE (1 OF 2) - EAST OF ABERDEENSHIRE COAST AND**
**MARINE LICENCE APPLICATION REFERENCE 00010232 GREEN VOLT OFFSHORE WINDFARM - OFFSHORE TRANSMISSION INFRASTRUCTURE (2 OF 2) - EAST OF ABERDEENSHIRE COAST**

Please treat this letter as a written representation by Thistle Wind Partners (TWP) relating to the above marine licence applications dated 20 January 2023 (the Applications), which are dated on the Marine Scotland licence information website as 1 February 2023.

**Thistle Wind Partners - Cluaran Deas Ear / Cluaran Ear-Thuath Projects**

TWP are the developers of Cluaran Deas Ear, a proposed 1 GW offshore wind farm, which is located east of the Aberdeenshire Coast, and Cluaran Ear-Thuath, a proposed 1 GW offshore wind farm located off the east coast of Orkney, within the offshore wind farm development zones known as Plan Option E3 and NE2

respectively in the adopted Sectoral Marine Plan for Offshore Wind Energy (October 2020).
TWP has a grid connection offer from National Grid Electricity System Operator (NGESO) at New Deer for Cluaran Deas Ear (E3) for 1008MW. However, this is awaiting confirmation through the ongoing process under the UK Offshore Transmission Network Review (OTNR) known as the Holistic Network Design Follow Up Exercise (HNDFUE) which is in the process of being competed by NGESO.

Having regard to the on-going work, TWP is still considering alternative grid connection points that might emerge from HNDFUE and at present does not intend bringing forward firm proposals for its export cable systems until the outcome of HNDFUE is known.

**The Applications**

The Applications relate to a proposed floating offshore windfarm (Green Volt) located 80 km east of the Aberdeenshire coast in the North Sea, with an indicative generating capacity of 490 to 560 megawatts (MW), and the associated offshore transmission infrastructure, inter-array cables and offshore export cables to the Aberdeenshire coast at two locations. Application reference 00010230 is for the generating station.

The project will have two offshore export cables, the first (Application reference 00010231 - Offshore Transmission Infrastructure (1 of 2)) to electrify the Buzzard platform complex approximately 20 km from the wind farm, and the second (Application reference 00010232 - Offshore Transmission Infrastructure (2 of 2)) to bring excess electricity to shore where the project will be connected to the National Grid.

The current connection point offered by NGESO for the Green Volt wind farm's second export cable is also at New Deer substation in Aberdeenshire. However, as is the case for Cluaran Deas Ear (E3), this remains to be confirmed through the ongoing HNDFUE process.

The Green Volt project still has two alternative landfall locations with a total of four alternative landing point options under consideration. The two alternative landfall locations are at 'St Fergus South' located north of Peterhead, and 'NorthConnect Parallel' located south of Peterhead. According to the Applications, three specific landfall locations are still being considered at 'St Fergus South' and one at 'NorthConnect Parallel', although there is some more information on the Green Volt project's website that suggests the St Fergus South landfall is preferred. Application reference 00010232 Offshore Transmission Infrastructure (2 of 2) includes offshore export cable corridors up to mean high water springs (MHWS) at both 'St Fergus South' and 'NorthConnect Parallel' north and south of Peterhead respectively.

We assume the application(s) for planning permission(s) for onshore works will be submitted later to the local planning authority. The onshore cable routes have been the subject of a request for a scoping opinion on two corridors to New Deer

substation, one from each of the landfall areas. There are no onshore environmental impact assessment (EIA) reports available at present, these are not expected to be available until summer 2023, but the Applications are supported by a document referred to as the "Green Volt Offshore Windfarm Offshore Environmental Impact Assessment Report - Summary of Offshore and Onshore Environmental Impact Assessments".

TWP is in the process of reviewing the Green Volt offshore EIAR but has set out its preliminary observations below.

TWP notes that an EIA scoping opinion was adopted by Scottish Ministers for Green Volt Offshore Wind Farm in April 2022 (the Scoping Opinion). In the Scoping Opinion (5.19.1), Scottish Ministers emphasised the importance of engaging with other marine users, including developers of ScotWind projects, throughout all phases of the proposed development. This reflects Marine Policy in the National Marine Plan, which advocates consultation and co-operation with other sea users, with the aim of co-existence.

TWP can confirm that the Green Volt applicants sought to engage with TWP on 21 February 2023 and a meeting has now taken place, which was helpful. TWP will explore with them if there are any conflicts or cumulative effects between the projects that can be resolved but, at the time of writing, TWP has not had the opportunity fully to do so.

**Representation 1 – Offshore Cumulative Effects**

In the Scoping Opinion (5.13.6), the Scottish Ministers advised that the cumulative effects assessment for offshore ornithology should focus on the proposed development in combination with other consented projects in the Moray Firth including those granted lease agreements through ScotWind.

In the Offshore EIA accompanying the Applications, the Cumulative Effects Assessment (CEA) section of the Ornithology Chapter (Section 12.13) sets out tiers of cumulative developments based on their different operation and planning stages, and then applies these tiers to derive the list of projects to be taken into account in the CEA. The ScotWind developments, although included on a wind farm 'long list' in Table 12.45, are excluded from the CEA. That seems at odds with the advice given in the Scoping Opinion in this case.

TWP wishes to ensure that the approach taken by Marine Scotland and Scottish Ministers is consistent across applications and that, especially at this early stage, there is adequate consideration of broader cumulative matters so as to not disadvantage or pre-determine the Sectoral Marine Plan Iterative Plan Review (SMP IPR) and future ScotWind applications, including Cluaran Deas Ear (E3).

**Representation 2 – Landfalls and Onshore Effects**

TWP also notes that in the Scoping Opinion (2.3.1) Scottish Ministers advised that 'it is essential that the EIA Report concerning onshore works will be available at the time that the EIA Report for the Proposed Development is being considered so that all the information relating to the project as a 'whole' is presented…'

TWP notes that although the Applications are accompanied by a summary report of Offshore and Onshore Environmental Impact Assessments and an onshore Scoping Report is available on the Green Volt website, the onshore application details are not complete. TWP understands why that might be the case, given the level of development of the onshore routes. However, details of the landfalls ultimately selected are also relevant to the offshore applications to MHWS, and the consideration of the project 'as a whole' per the Scoping Opinion.

TWP is concerned that, at this stage, particularly at the landfalls and in advance of the outcome being know HNDFUE, there is uncertainty and a consequent lack of clarity as to the cumulative effects of the Green Volt project, in combination with other INTOG and ScotWind projects.

Details of both the onshore works and the outcome of HNDFUE should be known within the determination period of the Applications. When those details are available, TWP may need to, and reserves the right to, make further representations on the cumulative effects of this project that may be relevant to the determination these offshore applications.

If you require any further information, please do not hesitate to contact Mark Wardle, Consents Lead, on m.wardle@thistlewindpartners.scot.

Yours faithfully

Mark Wardle
Consents Lead
Thistle Wind Partners Limited

Transport Scotland

| | |
|---|---|
| **From:** | Clement I (Iain) |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); LOGAN Lesley; Erskine A (Andrew); DEVENNY Alan |
| **Subject:** | Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – TS Consultation Response - 6 March 2023 |
| **Date:** | 06 March 2023 15:03:22 |
| **Attachments:** | image001.png<br>image002.png<br>image003.png<br>image004.png<br>image005.png |

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**FAO Lauren Cowan**

Afternoon Lauren,

Thank you for the opportunity for Transport Scotland to comment on the Environmental Impact Assessment Report (EIAR) for the proposed Green Volt Offshore Wind Farm.

I note that the EIAR is for the Offshore components of the Project from Mean High Water Springs, and that a separate EIAR for the Onshore infrastructure will be submitted in 2023. Transport Scotland has confirmation from the Applicant's consultant that all materials for the marine works will be transported to the Project site by sea, so there will be no increased traffic on the trunk road network during the marine works. Consequently, Transport Scotland is satisfied that any potential impact on the Trunk Road network associated with the onshore element will be identified within the forthcoming onshore EIAR and we have no comment to make on the offshore EIAR.

My apologies for the delay in responding but I trust this information is satisfactory. If you should require any further information, please do not hesitate to contact me.

Kind regards,

Iain

Development Management
Network Operations
Roads Directorate
transport.gov.scot

Transport Scotland, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU

UK Chamber of Shipping

| | |
|---|---|
| **From:** | Robert Merrylees |
| **To:** | MS Marine Renewables |
| **Cc:** | Cowan L (Lauren); Malcolm J (Jessica); Morrison S (Stephanie) |
| **Subject:** | RE: Green Volt Offshore Wind Ltd – Section 36 Consent and Marine Licences – Green Volt Offshore Windfarm, East of Aberdeenshire Coast – Consultation Ended - Nil Return Assumed |
| **Date:** | 07 March 2023 12:38:37 |

Dear Stef and the MS- LOT Team,

Thank you for the follow up email regarding Green Volt Offshore Wind Ltd – Section 36 consultation.

The UK Chamber has had regular contact and engagement with the developers throughout their planning and process and met with them most recently on 23 February.

The Chamber has been satisfied with the navigational risk and commercial shipping aspects of the planning documents and would only wish to make a general comment that the use of a "brown-field" area for offshore wind production is a positive one that should be supported from a commercial shipping perspective.

The Chamber offers no further comments.

Kind regards,
Robert

**Robert Merrylees**
Policy Manager (Safety & Nautical) & Analyst

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University of St Andrews

# Review of Technical Appendix 12.4: Comparative analysis of the design-based method and MRSea modelling using Green Volt survey data

March 2023

CREEM
Centre for Research into Ecological and Environmental Modelling

University of St Andrews

The report shows, by way of example, the differences and similarities between model based and design based abundance and density estimates for guillemot in the Green Volt study area. In high abundance months, there is little to choose between the two methods however there are differences for low abundance months. In contrast to the authors, who favour the design based estimates for these months, I find that the model based estimates would be preferred. Owing to the patchy nature of the birds in these months, the design based method over estimates the abundance. However, I agree with the authors that, particularly for this example, the practical difference between the two methods are minimal, particularly when using only the highest abundances in displacement analysis. It is difficult to know what if any difference this would make to a more generally lower abundance species.

Please find below some more specific comments relating to different sections of the report.

## Introduction (1):

1. MRSea was introduced as a tool to implement spatially adaptive smoothing using the Complex Region Spatial smoother (CReSS) and the spatially adaptive smoothing algorithm SALSA. It was identified in 2013 as the preferred approach for both baseline characterisation and before/during/after impact assessment. It is incorrect to state that it was not designed to model data to produce more accurate abundance estimations. It is the one of the reasons it was developed. A more accurate spatial representation of distribution will often in turn lead to a more accurate estimate of abundance.
2. Often the inclusion of environmental covariates helps model some of the variability in the data but not always. There are any number of variables that could be used, not just depth or SST but often these are not available. Even when they are, they may not be selected for as the authors rightly point out they may not vary much across the study area. It is possible to model the spatial distribution using spatial coordinates alone, particularly if modelling at the level of individual survey.

## Purpose of this report (1.1):

3. It is very true unfortunately that both the displacement analysis and collision risk modelling do not take account of the spatial distribution of animals or use any form of uncertainty as inputs. However, if I understand it right, the baseline characterisation does use the spatial distribution and so the spatial distribution and uncertainty are not unimportant. These outputs can also be used further by assessing things like persistence to identify more "sensitive" areas of the study region for each species.

## Methods (1.2):

4. 1km segments are quite large. Was this a trade off between having more segments (e.g. 500m long ones) and having to many zeros making modelling difficult?
5. I am still unclear why kernel maps are presented. The CReSS basis is effectively a kernel (they are both gaussian radial functions) but the choice of location for the kernels is more nuanced when using MRSea. The size of the kernels is quite small (2-5km) and if this finer

more radial look is what you expect/desire, this can be achieved with MRSea by setting the radii to values which make the effective range of the basis smaller.

## Results (1.3):

6. May 2021 shows poor model fit:
    a. The concordance correlation is very small if that is what you mean by poor model fit. This is to be expected with the large number of zeros in the model (a Poisson model of any kind cannot return exactly zero). The fitted values are all less than 0.15 which is very small for a Poisson based framework so the model is close to returning the mean density. However, the two knots lower the surface in some areas helping to get a better estimate owing to the patchiness of the data. I don't see any glaring issues with the model fit.
    b. Additionally, this month shows a more precise confidence interval when using the model based. This is to be expected as it is a good example of when the design based estimate falls down. The design based estimate is unable to tell that the density is highly patchy and so over estimates the total abundance and has higher uncertainty. The model based estimate is able to distinguish the spatial patchiness and provide a better estimate. I believe the same to be true of August 2021. The more uniformly distributed months are essentially the same (confidence intervals with a lot of overlap) for both model based and design based as might be expected.
7. "April 2021 runs test indicates evidence of residual correlation which is of some concern". Given that in the methods statement you are using a block/panel structure (TransectID) in the fitting of the models then you are already allowing for some residual correlation. Therefore, there is no concern with April 2021 as the residual correlation has been accounted for.
8. Figure 1 caption. If the heatmaps cannot be directly compared to the MRSea outputs why are they presented side by side, or indeed at all?
9. Months with no difference between methods:
    a. August 2020
    b. September 2020
    c. October 2020 – much larger uncertainty for model based owing to edge effect bottom right. If these grid cells were removed they would probably be fairly identical.
    d. April 2021
10. Months with a difference:
    a. May 2021 – MRSea map might look a little strange but in reality the density is small everywhere compared with the other months. The abundance is lower and more precise than the design based owing to the patchy nature.
    b. August 2021 – Abundance estimate far more precise and lower for model based estimate. As expected, model based able to cope with patchy nature of birds.

## Conclusions (1.4):

11. The conclusions for the low raw count months do not seem to match with the results presented. If anything, this report highlights the need for model based estimates when the bird distributions are highly patchy, which is often the case with low numbers.

12. If the reasons for not wanting to use MRSea are because you find very little difference in the point estimates for abundance between model and design based estimates and the confidence intervals on abundance and the distribution maps are not required or used for any aspect of the application process then perhaps there is a case. However, I would argue that the model based estimates are better when the data are patchy. Is this enough to not use design based I'm not sure. In the guillemot case, the patchy months are not used in the displacement assessment leading, as you show, to no practical difference between the two methods. However, this may not be the case for other species.

## Appendix

13. Figure 32: the points are well distributed around the red line so the quasi-Poisson looks good. Same for figure 43 and 76.
14. Figure 48. The correlation doesn't drop rapidly for quite a few of the transects so this indicates some correlation present. This is backed up by the runs test. The model output as a panel structure included so this residual correlation is accommodated in the results.
15. Figure 54. Looks a good fit to a quasi Poisson for all but the very largest fitted values. For these, the variance is underestimated.