



Berwick Bank Wind Farm

Additional Environmental Information (AEI) Submission

**AEI01: Addendum to the Offshore EIA Report
and RIAA – Section 1 Introduction**

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Acronyms

Acronym	Description
ADD	Acoustic Deterrent Device
AEoI	Adverse Effect on Integrity
BBWFL	Berwick Bank Wind Farm Limited
BTO	British Trust for Ornithology
CEA	Cumulative Environmental Assessment
CI	Confidence Interval
EIA	Environmental Impact Assessment
GIS	Geographical Information System
GTI	Global Tech I
HRA	Habitat Regulations Appraisal
iPCoD	interim Population of Consequences of Displacement
LF	Low Frequency
LSE	Likely Significant Effect
LSEI	Likely Significant Effect in Combination
MD-LOT	Marine Directorate - Licensing Operations Team
MU	Management Unit
N/A	Not Applicable
NEQ	Net Explosive Quantity
OSP	Offshore Substation Platform
PTS	Permanent Threshold Shift
RSPB	Royal Society for Protection of Birds
SAC	Special Area of Conservation
SPA	Special Protection Area
ScotMER	Scottish Marine Energy Research
SEL	Sound Exposure Level
SELss	Sound Exposure Level Single Strike
SPEN	Scottish Power Energy Networks
TTS	Temporary Threshold Shift
UXO	Unexploded Ordnance
VHF	Very High Frequency

Units

Unit	Description
%	Percentage
μPa	Micropascal
$\mu\text{Pa}^2\text{s}$	Micropascal Squared Second
dB	Decibel
GW	Gigawatt
kg	Kilogram
kJ	Kilojoule
km	Kilometre
km^2	Square Kilometre
m	Metre
mm	Millimetre
nm	Nautical mile
t	Tonne

1. INTRODUCTION

1.1. INTRODUCTION

This document provides Additional Environmental Information (AEI) relevant to the Berwick Bank Wind Farm (BBWF) Environmental Impact Assessment (EIA) and Habitat Regulations Appraisal (HRA) in response to a formal request from the Marine Directorate Licencing and Operational Team (MD-LOT) on behalf of Scottish Ministers. Scottish Ministers also requested AEI in relation to the BBWF derogation case. The Applicant's response to this request is provided in a separate document: **AEI02 BBWF AEI Submission – Addendum to the Derogation Case**.

The Applicant has also provided additional supplementary information to provide further clarity on specific points / areas of concern raised by stakeholders during consultation. This supplementary information is provided in the following document: **AEI03 BBWF AEI Submission – Supplementary Information**.

1.1.1. Overview of the Berwick Bank Wind Farm Consent Submission

Berwick Bank Wind Farm Limited (BBWFL) is a wholly owned subsidiary of SSE Renewables Limited and will hereafter be referred to as 'the Applicant'. The Applicant is developing the Berwick Bank Wind Farm (hereafter referred to as 'the Project').

The Project is a proposed offshore wind farm located in the outer Firth of Forth and Firth of Tay, approximately 37.8 km east of the Scottish Borders coastline (St. Abb's Head) and 47.6 km to the East Lothian coastline (Figure 1.1). The Project is comprised of both the offshore and onshore infrastructure required to generate and transmit electricity from the offshore wind farm to a Scottish Power Energy Networks (SPEN) 400 kV Grid Substation located at Branxton, nr Torness Power station. The offshore export cables will make landfall at Skateraw on the East Lothian coast.

The offshore components of the Project (hereafter referred to as the 'Proposed Development') include the offshore wind farm (up to 307 wind turbines, their foundations and associated inter-array cabling), together with associated transmission infrastructure including Offshore Substation Platforms (OSPs)/Offshore converter station platforms, their foundations, interconnector cables, offshore export cables and cable protection. A separate application will be submitted to the East Lothian Council (ELC) for the onshore elements of the Project.

An application for consent under Section 36 of the Electricity Act 1989 and marine licences under section 20 of the Marine (Scotland) Act 2010 and section 65 of the Marine and Coastal Act 2009 for the Proposed Development was submitted to Scottish Ministers in December 2022. The application included the following documentation:

- **Environmental Impact Assessment (EIA) Report** which presents information on the assessment of the likely significant effects of the Proposed Development on various receptors from a range of impacts. This included a Non-Technical Summary (NTS) and Volumes 1 to 4:
 - Volume 1: Introductory Chapters 1 to 6
 - Volume 2: Specialist Assessment Chapters 7 to 21
 - Volume 3: Technical Reports (Appendices to Chapters 1 to 21) including a Navigational Risk Assessment
 - Volume 4: Outline Management Plans
- **Report to Inform an Appropriate Assessment (RIAA)** which provides information to inform an assessment of the effects of the Proposed Development on the integrity of sites designated under the Habitats Regulations (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)).
- **Derogation Case** prepared under the derogation provisions of the Habitats Regulations. Included information required to demonstrate that there are no alternative solutions, that there are imperative

reasons of overriding public interest (IROPI) for the Project and that compensatory measures can be secured to ensure the overall coherence of the national site network is maintained.

- **Accompanying Documents** including:
 - Offshore Planning Statement
 - Pre-Application Consultation (PAC) Report
 - Marine Protected Area (MPA) Assessment
 - Marine Archaeology Technical Report

The Applicant has also signed an agreement for an additional grid connection at Blyth, Northumberland, referred to as the Cambois Connection. Marine licence applications for the Cambois Connection Marine Scheme which comprises HDVC Offshore Export Cables and Landfall infrastructure up to Mean High Water Spring (MHWS) was submitted to MD-LOT and the Marine Management Organisation (MMO) in July 2023.

An application for outline planning permission for the Onshore Scheme comprising HVDC Onshore Export Cables, Onshore HVDC Converter Station and HVAC grid connection cables connecting to the National Grid Substation at Blyth will be submitted in Q4 2023.

These applications will be supported by an EIA and Habitats Regulations Appraisal (HRA). The Cambois Connection Marine Scheme and Onshore Scheme have also been included in the cumulative assessment for the purposes of the Offshore EIA Report and assessed based on the information available at the point of assessment.

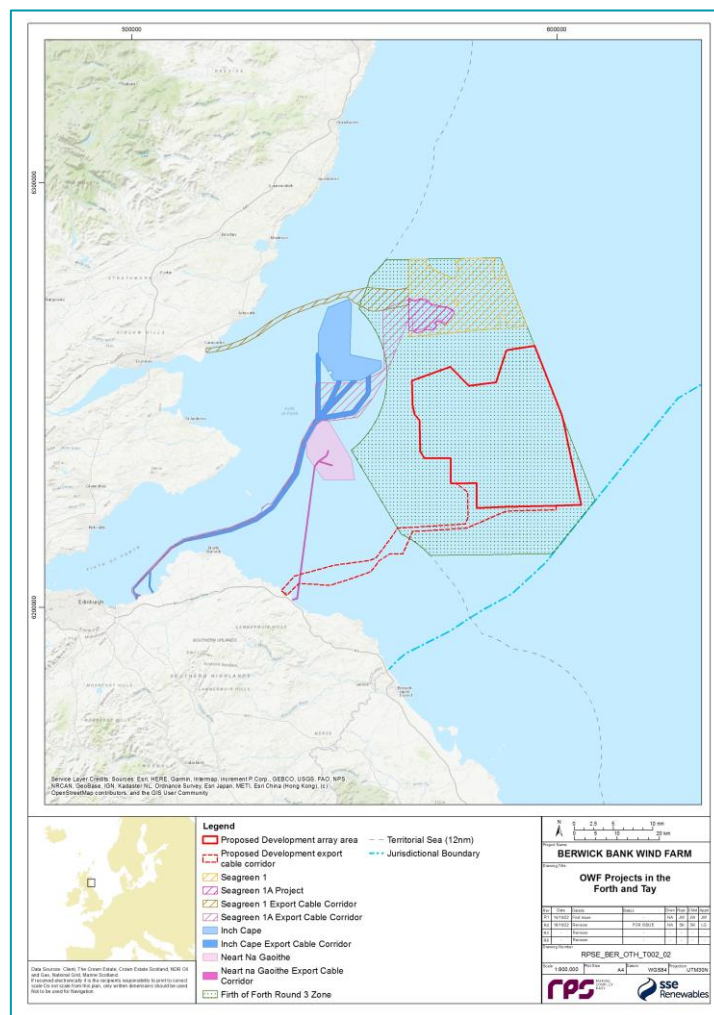


Figure 1.1: Location of Berwick Bank Project and Other Offshore Wind Projects in the Firth of Forth and Tay

1.2. Request for Additional Environmental Information (AEI)

Post submission consultation on the Section 36 and Marine Licence application for the Proposed Development closed on 21st February 2023 (except where Scottish Ministers had formally granted requests for an extension to the deadline for the submission of a written representation).

On 26 May 2023, having received, and reviewed, all written representations received following the post submission consultation, MD-LOT on behalf of Scottish Ministers formally requested BBWFL to provide AEI in accordance with the following:

- Regulation 21 of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (“the 2017 MW Regulations”);
- Regulation 19 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (“the 2017 EW Regulations”); and
- regulation 14 of the Marine Works (Environmental Impact Assessment) Regulations 2007 (“the 2007 MW Regulations”).

The requested AEI is directly relevant to reaching a reasoned conclusion on the likely significant effects of the works on the environment. MD-LOT also raised several points of clarification arising from the consultation responses received. The AEI request and additional clarification points are presented below.

1.2.1. AEI Request Relevant to the EIA and HRA (this Document)

The AEI request relevant to the EIA and HRA (this document), is presented in Table 1.1 below.

Table 1-1 AEI Request Relevant to the EIA and HRA (included in this AEI Submission Document)

AEI Submission	AEI Request	AEI Submission Document AEI01
Marine Mammal AEI	<p>MD-LOT advises that the following must be submitted as additional information on the basis of the NatureScot representation dated 21st February 2023 (noting this representation did not include information relating to ornithology):</p> <ul style="list-style-type: none"> • Either the harbour seal assessment must be revised to include the updated Whyte et al. 2020 dose response information, or evidence must be provided to support the Russell et al. 2016 information being more precautionary. • The 10% reducing to 1% Conversion Factor (CF) scenario must be included in the interim Population of Consequences of Displacement (iPCoD) cumulative assessment. <p>MD-LOT advises the following should be clarified on the basis of the NatureScot representation:</p> <ul style="list-style-type: none"> • In relation to UXO detonation impact ranges, for the low order 0.5kg charge (Table 10.46, Chapter 10), the very high frequency (VHF) hearing group has the largest Temporary Threshold Shift (TTS) SELweighted range of 3.1km of all the hearing groups. Berwick Bank should clarify whether this is correct, in light of NatureScot’s expectation of the low frequency (LF) hearing group having the larger impact range. 	Addendum to the Offshore EIA and HRA (Section 2)
Ornithology AEI	<p>MD-LOT advises that the following must be submitted as additional information on the basis of the NatureScot representation dated 31st March 2023:</p> <ul style="list-style-type: none"> • NatureScot was unable to conclude no adverse effect on site integrity (“AEOSI”) from vessel disturbance for common scoter, velvet scoter, red-throated diver, great northern diver and shag due to insufficient information. Additional information must be provided on indicative routes construction and/or operational vessels will take to reach the development site (as well as helicopter and/or drone usage), including whether these will pass through the marine SPA to reach the development site. 	Addendum to the Offshore EIA and HRA (Section 3)

1.2.1. AEI Request Relevant to the Derogation Case (AEI Submission AEI02)

For clarity, the AEI request relevant to the derogation case (refer to the AEI Submission – Addendum to the Derogation Case), is presented in Table 1.2 below.

Table 1-2 AEI Request Relevant to the Addendum to the Derogation Case (Separate Document)

AEI Submission	AEI Request	AEI Submission Document AEI02
Gannet Compensation	Gannet has not been addressed within the derogation package. Additional information is required in relation to proposed compensatory measures for gannet (for which NatureScot has identified AEOSI or been unable to conclude lack of AEOSI).	Addendum to the Derogation Case – Section 2
Implementation, Monitoring and Adaptive Management	It has been identified by NatureScot, Natural England and RSPB that there is insufficient information in relation to both sandeel fishery and colony compensation measures on implementation and monitoring and adaptive management, and each have provided further detail on specific points to be addressed. Additional information must be submitted on these points and MD-LOT advises that Berwick Bank contact NatureScot, Natural England and RSPB to inform the detail of information required.	Addendum to the Derogation Case – Section 3
Dunbar Colony Measures	In relation to the Dunbar colony measures, assessment has not quantified impacts from development to the non-SPA colony which has been identified by NatureScot and RSPB. MD-LOT seeks additional information quantifying impacts from the development to the Dunbar kittiwake population, and any available quantitative evidence on disturbance limiting population expansion. Should this information not be available, this should be outlined and justified. NatureScot has highlighted that UK Seabird monitoring Programme database includes breeding success data from multiple kittiwake monitoring plots in the general Dunbar area that could be used to investigate whether there is any compelling evidence for localised effects at particular sub-colonies in the Harbour area. MD-LOT advise that this is investigated and provided as additional information.	Addendum to the Derogation Case – Section 4
Handa Feasibility Study	RSPB makes reference in paragraph 5.69 to its expectations around a full feasibility study in relation to rat eradication at Handa island, which MD-LOT advises must be provided as additional information. MD-LOT also advises the following should be clarified: <ul style="list-style-type: none"> In relation to rat eradication on Handa, clarification should be provided on whether the adjacent land on the mainland will be maintained as a rat-free buffer, and whether this extends to other species including hedgehogs, minks and stoats. As noted by NatureScot, assessment of effectiveness and feasibility would be required should this measure be taken forward. If this is the case, MD-LOT would expect this to be submitted as part of the additional information to be provided on implementation and monitoring (above). 	Addendum to the Derogation Case Section 5
Inchcolm Feasibility Study	In paragraph 5.79, RSPB notes a feasibility study carried out for rat eradication on Inchcolm island referenced within the derogation proposals. If Berwick Bank intends on taking forward rat eradication at Inchcolm islands as a compensatory measure, this study should be provided as additional information. MD-LOT also advises the following should be clarified: <ul style="list-style-type: none"> Eradication of black rats, as well as biosecurity and colony management at Inchcolm was not taken forward as a compensatory measure, as noted by NatureScot and RSPB. MD-LOT seeks clarification on the reasoning behind this measure not being taken forward and whether Berwick Bank may reconsider this position. 	Addendum to the Derogation Case Section 6
Updated EIA and HRA for Compensation Measures	In relation to the derogation case EIA and HRA, additional information on additional targeted measures to minimise loss of great and arctic skua eggs is required as well as additional information on potential poisoning of non-target species, in particular wintering gulls, in line with NatureScot’s representation.	Addendum to the Derogation Case – Section 7

1.3. Supplementary Information

In addition the responses to the request for AEI, the Applicant has also provided supplementary information in response to specific points and areas of concern noted by key stakeholders, the purpose of which is to further demonstrate the robustness and completeness of the Berwick Bank Wind Farm application and assurance around the deliverability and effectiveness of the derogation case and the proposed compensation measures. This Supplementary Information has been presented in a separate document: AEI Submission Supplementary Information and included the information listed in Table 1.3 below.

Table 1-3 AEI Submission - Supplementary Information

AEI Submission – Supplementary Information	Overview of Information Provided	AEI Submission Document AEI03
Sufficiency and immediate benefit of the sandeel compensation measures	<p>The purpose of this report is to provide evidence and additional analysis to address and allay concerns expressed by NatureScot concerning the timing of realisation of ecological benefits from the management of closures of the sandeel fishery and the potential impacts from the Proposed Development.</p> <p>The analyses presented in the report demonstrate that in the short term the likely response of populations to relatively small increases sandeel TSB is sufficient to compensate for the most precautionary predicted impact of the Proposed Development. This is supported by an analysis of hindcast data which showed that had the sandeel fishery in SA4 been closed prior to the 2017 catch, the number of additional adult birds predicted to survive would have been much larger for all species than the number of predicted mortalities from the project across the same period (had Berwick Bank been constructed in 2017). There is therefore no need to even rely on the productivity benefits that may take up to six years to be realised.</p>	Supplementary Information Document – Section 2
Consideration of Precaution	<p>Much greater benefits to seabird populations can also be expected over a longer time period from productivity increases and as Sandeel TSB recovers.</p> <p>This additional information document addresses the assertion by NatureScot that “<i>The magnitude of impacts predicted are due to the extremely high densities of birds found within the proposed development area.</i>” The Applicant considers that the magnitude of estimated bird mortality in the Section 36 Application is a direct consequence of the level of precaution applied to the assessment process.</p> <p>This document first demonstrates that densities are comparable or lower than densities recorded in other offshore wind farm developments within the Firth and Tay region, and second, sets out three areas where the advice provided in the Scoping Opinion is considered to lead to an overestimation of predicted impacts by applying an excessive level of precaution, including:</p> <ul style="list-style-type: none"> • It is not consistent with new guidance published since the Section 36 Application was submitted; • It does not use the best available scientific methods available for the impact assessment; and • It does not provide sufficient evidence to justify a change from precedent advice for previous Scottish offshore wind farm assessments. <p>Cumulatively, the Applicant estimates that precaution applied in assessments utilising the Scoping Opinion approach to ornithological assessment overestimates bird mortality by between 136% and 548%.</p>	Supplementary Information Document – Section 3
Alternatives and Additivity	<p>This document presents the Applicant’s response to consultation comments from RSPB on the consideration of alternatives in the Derogation Case, and the principle of additivity with regards to the sandeel fisheries management compensation measure.</p>	Supplementary Information Document – Section 4

AEI Submission – Supplementary Information	Overview of Information Provided	AEI Submission Document AEI03
	<p>With regards to alternatives, the assessment presented in the Derogation Case includes a detailed analysis of relevant law and policy and establishes appropriate and compliant project objectives for Berwick Bank, against which to consider whether there are alternative solutions. Following a detailed analysis against those objectives, the firm conclusion is that there are no feasible alternative solutions to Berwick Bank.</p> <p>RSPB alleges there are alternative solutions to Berwick Bank, specifically other (unspecified) ScotWind projects. The argument that ScotWind project(s) are an alternative solution to Berwick Bank fails on two fronts. First, ScotWind does not meet the legitimate project objectives established in the Derogation Case. Second, even if those project objectives were met (which the Applicant strongly rejects), ScotWind projects will also have ornithological impacts on European sites, which are as yet unquantified and the information does not exist to meaningfully comparatively assess them, and so there is no rational basis on which to conclude that any ScotWind project(s) are alternative solutions. It would be unreasonable and irrational to conclude that one or more inchoate potential future projects (which may not come forward), with uncertain timelines, unspecified turbine numbers and locations, and unquantified and unknown impacts, constitute an alternative solution.</p> <p>With regards to additionality of the compensation measures, the Applicant’s firm and evidenced position is that sandeel fisheries management is additional. Whilst regulators are under a duty to achieve favourable conservation status (FCS) of protected species, sandeel fisheries management does not occur in the normal course of management of the national site network, or for the management of any individual SPA, and sandeel fisheries management does not feature as a management measure of relevant SPA management plans which the relevant management body is required to carry out (to the extent any such plans exist). It is not normal practice within financial and political realities to manage/close fisheries to benefit European sites. In addition to the general duty to achieve FCS, regulators are also under a duty to achieve Good Environmental Status (GES) pursuant to the Marine Strategy Regulations 2010. It is not however possible to reasonably “read in” an obligation to manage sandeel fisheries in the North Sea as something which must follow from either of these broad obligations.</p> <p>There is nothing in the HRA Regulations which prevents measures being relied upon as compensation whilst also serving another purpose, e.g. wider ecological benefits. The current legislative framework therefore enables the Scottish Ministers to consent Berwick Bank and to rely on sandeel fisheries management as compensation, whilst also acknowledging the wider environmental benefits including increased resilience in the seabird populations. It would be entirely reasonable for them to do so.</p>	
Analysis of NatureScot RIAA Conclusions	<p>This report provides an update to Table 18 of the Derogation Case, to summarise predicted mortalities for the conclusions drawn by NatureScot in relation to the additional sites and features for which they concluded an Adverse Effect on Site Integrity in their consultation response.</p> <p>As outlined in the Derogation Case and the AEI Submission Supplementary Information – Note on Precaution, this worst-case approach is considered by the Applicant to overestimate precaution, but it is presented here to allow Scottish Ministers to consider all the potential requirements for compensation and, therefore, all measures put forward as options.</p>	Supplementary Information Document – Section 5
EDF Torness Consultation Response – Sediment and Kelp Technical Note	<p>Technical Note prepared in response to concerns raised by EDF Energy Nuclear Generation Limited (ENGL) in relation to the potential for suspended sediment and detached macroalgae occurring during installation and operation and maintenance of the offshore export cables to lead to blockages</p>	Supplementary Information Document – Section 6

of the cooling water intakes at Torness Nuclear Power Station (TOR). TOR is scheduled to be decommissioned in 2028.

Historically storm events, when coinciding with particular wind directions and tide states have carried detached kelp to TOR's cooling water intakes. In extreme cases this has required the reactor to be shut down. There is an existing seaweed management zone in place at TOR.

Physical processes modelling of suspended sediments and a study of kelp-TOR interactions based on the possible trenchless technology (e.g. HDD) punch out locations identified that suspended sediments and detached kelp, under typical conditions, is expected to be transported in a southeasterly direction and is not expected to enter the bay or reach TOR's cooling waters intakes. During atypical storm events there is potential for kelp to reach TORs cooling water intake. The Applicant is committed to managing activities during these conditions to reduce the risk of kelp reaching the TOR cooling water intake.