

BERWICK BANK WIND FARM OFFSHORE ENVIRONMENTAL IMPACT ASSESSMENT

APPENDIX 5.1: AUDIT DOCUMENT FOR POST-SCOPING DISCUSSIONS



EOR0766 Environmental Impact Assessment – Appendix 5.1 Final



Version	Purpose of Document	Authored by	Reviewed by	Approved by	Review Date
FINAL	Final	RPS	RPS	RPS	22 November 2022
Approval for Is	sue				
Ross Hodson		RA Hou	dson	24 Novemb	er 2022
Prepared by:	RPS	ablaa			
Prepared by: Prepared for:	RPS SSE Renew	ables			
Prepared for: Checked by:	SSE Renew Anja Schoe	ne			
Prepared for:	SSE Renew	ne jie			

© Copyright RPS Group Plc. All rights reserved.

The report has been prepared for the exclusive use of our client.

The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS for any use of this report, other than the purpose for which it was prepared. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

RPS accepts no responsibility for any documents or information supplied to RPS by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made.

RPS has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy.





CONTENTS

1.	Aud	it of Post-	Scoping Discussions	1
	1.1.	Introduc	tion	1
	1.2.	Purpose	e of this Document	1
	1.3.	Scope o	f the Audit Document	1
2.	Ove	rview of F	Post-Scoping Discussions	2
3.	Deta	ail on Pos	t-Scoping Discussions	14
	3.1.	General	/Overarching	14
		3.1.1	Cambois Connection	14
		3.1.2	Cumulative Assessment of Seagreen Projects	14
		3.1.3	Digital Reports	14
		3.1.4	Mitigation and Monitoring	14
	3.2.	Physica	I Processes	15
		3.2.1	Issues Raised at Road Map Meetings	15
		3.2.2	Sand wave Recovery	15
		3.2.3	Potential re-exposure of cable	15
	3.3.	Benthic	Subtidal and Intertidal Ecology	15
		3.3.1	Cumulative Effects Assessment (Seagreen Project 1A)	15
		3.3.2	Cable and Scour Protection	15
		3.3.3	Drilling Fluids/Effluent and Drill Cuttings	16
		3.3.4	Invasive Non-Native Species Monitoring	16
		3.3.5	Key Issues from Road Map Meetings	16
	3.4.	Marine I	Protected Area Assessment	16
	3.5.	Fish and	d Shellfish Ecology	16
		3.5.1	Effectiveness of Soft-Start Piliing	16
		3.5.2	Strategic Monitoring	17
		3.5.3	Issues From Road Map Meetings	17
	3.6.	Marine I	Nammals	17
		3.6.1	Conversion Factors	17
		3.6.2	UXO Clearance	17
		3.6.3	Seagreen Piling Strategy for CEA	17
		3.6.4	Injury Ranges	17
	3.7.	Offshore	e and Intertidal Ecology	18

Collision Risk Modelling 3.7.1 3.7.2 Displacement/Barrier Effects..... 3.7.3 Apportioning Methods 3.7.4 Displacement Matrix Approaches 3.7.5 Use of MRSea-Derived Density Estimates 3.7.6 Migratory Waterbirds Collision Report Gannet Tracking Data 3.7.7 3.8. Commercial Fisheries New Guidance for Assessing Fisheries Display 3.8.1 Assessment of Impacts on Sale of Fish and Su 3.8.2 3.9. Shipping and Navigation 3.10. Aviation, Military and Communications..... 3.10.1 Civil Airport Patterns and Procedures 3.11. Seascape, Landscape, Visual Resources 3.12. Cultural Heritage 3.12.1 Category B and C Listed Buildings 3.13. Infrastructure and Other Users 3.14. Offshore Socio-Economics and Tourism 3.14.1 Additional Impacts and Community Engageme 3.14.2 Additional Data Sets..... 3.14.3 Separation of Offshore and Onshore Compone 3.15. Water Quality 3.15.1 Water Quality Chapter and WFD Assessment. 3.16. Inter-Related Effects 3.17. Major Accidents and Disasters 3.18. Climate Effects 3.19. Marine Archaeology..... 3.20. References.....

TABLES

Table 2.1:	Overview of Post-Scoping Advice and Outcomes Publication of the 2022 Scoping Opinion and Submis
Table 3.1:	Relevant Audit Document and Supporting Reference



	18
	18
	19
	19
	19
cement	19
upply lines	19
ent	
ents	
	24

of	Key	Discussions	that	Took	Place	Between	the
nissi	on of	the Applicati	on				2
							05
ces.							. 25



AUDIT OF POST-SCOPING DISCUSSIONS

1.1. INTRODUCTION

- Berwick Bank Wind Farm Limited (BBWFL) is a wholly owned subsidiary of SSE Renewables Limited and 1. will hereafter be referred to as 'the Applicant'. The Applicant is developing the Berwick Bank Wind Farm (hereafter referred to as 'the Project').
- 2. 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. The Project is comprised of both the offshore and onshore infrastructure required to generate and transmit electricity from the Proposed Development array area to a Scottish Power Energy Networks (SPEN) 400 kV Grid Substation located at Branxton, south-east of Torness Power station. The offshore export cables will make landfall on the East Lothian coast, specifically at Skateraw.
- 3. The offshore components of the Project (hereafter referred to as the 'Proposed Development') which are the focus of this document, include the offshore wind farm (the wind turbines, their foundations and associated inter-array cabling), together with associated transmission infrastructure including Offshore Substation Platforms (OSPs)/Offshore convertor station platforms, their foundations and the offshore export cables and cable protection.

1.2. PURPOSE OF THIS DOCUMENT

- 4. An Offshore Environmental Impact Assessment (EIA) Report has been produced for the Proposed Development. The Offshore EIA Report contains various provisions to document consultation with statutory consultees and other stakeholders. Each topic chapter of the Offshore EIA Report details topic specific consultation undertaken. Consultation is also reported in-:
 - the Pre-Application Consultation (PAC) Report (Onshore and Offshore) (SSER, 2022d)
 - volume 1, chapter 5: Stakeholder Engagement and Consultation chapter;
 - volume 3, appendix 8.2: Benthic Ecology, Fish and Shellfish Ecology and Physical Processes Road Map; •
 - volume 3, appendix 10.3: Marine Mammals Road Map Document; •
 - volume 3, appendix 11.8: Offshore Ornithology Road Map Document; and
 - volume 3, appendix 13.2: Shipping and Navigation Road Map.
- The Gap Analysis Assessment for Scoping Study ('Gap Analysis) will also be submitted with the Proposed 5. Development Application at the request of The Marine Scotland - Licensing Operations Team (MS-LOT). The Gap Analysis documents Scoping Advice published in February 2022 within the Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (hereafter, the 2022 Scoping Opinion') and the Applicant's responses.
- 6. This Audit Document details Post-scoping Discussions (the 'Audit Document') and has been produced at the request of MS-LOT. The requirements for this Audit Document were established at a meeting between MS-LOT and the Applicant on 25 April 2022. MS-LOT requested a single document to cover all topic matters (including those not subject to a Road Map Process) which should be concise and focused on key points arising from the 2022 Scoping Opinion and subsequent discussions (hereafter, 'post-scoping discussions').

1.3. SCOPE OF THE AUDIT DOCUMENT

- 7. The distinct and specific scope of the Audit Document is:
 - post-scoping discussions (i.e. those that took place between the publication of the 2022 Scoping Opinion and submission of the Proposed Development Application (November 2022);
 - key concerns or matters which were highlighted in the 2022 Scoping Opinion as needing further discussions, or resulted in such;
 - Proposed Development refinements or clarifications that took place or were agreed subsequent to the 2022 Scoping Opinion being published; and
 - matters for which an alternative approach is being taken by the Applicant from the position set out by MS-LOT in the 2022 Scoping Opinion.
- 8. For all the above aspects, the Audit Document is expected to provide detailed accounts of key discussions on the scope of the EIA including the nature of agreements on approach and how/where it was agreed, dated, and evidence of the relevant meeting or correspondence. As such, the Audit Document should act as a consolidated account of how Scoping Advice (from the 2022 Scoping Opinion) has been incorporated into the Applicant's assessments, subject to further discussion and development. MS-LOT has confirmed that this Audit Document will be published with the Application (volume 1, chapter 5, appendix 5.1).
- 9. The scope of the Audit Document extends to the Habitats Regulations Appraisal (HRA) process for the Proposed Deployment, despite this having its own bespoke consultation process and reporting. The Audit Document will only audit key discussions where a resolution was not reached, or was reached after notable exchanges, otherwise, where it is considered the position may not be clear. Accordingly, detail is not provided on every point raised during Road Map discussions and non-contentious actions can be assumed to have been actioned, as requested. To enable the Application documents to be finalised, a cut-off date of 01 November 2022 has been applied; post-scoping discussions subsequent to this date may continue post-application but may not be captured within this Audit Document.
- 10. To balance the requirement for a concise audit and detailed account of agreements and communications utilised in assessments, the Audit Document is structure as follows:-
 - section 1: introduction and scope;
 - section 2: tabulated summary of key discussions points and headline outcomes; and section 3: detail on post-scoping discussions and cross references to supporting documents provided for key discussion points for each topic group considered in the Offshore EIA Report and HRA process.





OVERVIEW OF POST-SCOPING DISCUSSIONS 2.

Table 2.1: Overview of Post-Scoping Advice and Outcomes of Key Discussions that Took Place Between the Publication of the 2022 Scoping Opinion and Submission of the Application

Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
General/Overarching	Alternative cable route Consideration of alternative cable route (the 'Cambois connection') as a necessary and integral part of the Proposed Development.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (Para 2.4.1) SSE/LETTER/04.04.22 MS-LOT/LETTER/12.06.22	Face-to-face discussions and the exchange of two letters took place between the Applicant and MS-LOT followed the publication of the 2022 Scoping Opinion. In June 2022, MS-LOT confirmed by letter, with reference to clarifications provided previously by the Applicant, that Scottish Ministers understand that the additional cable ('Cambois connection') is not an integral, necessary part of the Proposed Development. Accordingly, and in accordance with the stated post-scoping position of MS-LOT, applications to consent the Cambois connection will be applied for separately.	Further detail set out in section 3.1.1 of this document. SSE/LETTER/04.04.22 MS-LOT/LETTER/12.06.22
General/Overarching	Cumulative Effects Assessment (CEA) Approach to naming and assessment of Seagreen's component projects.	Raised by Applicant (BWMEETING/11.08.22) Bi-weekly Meeting (Applicant/MS- LOT/NatureScot) 11 Aug 2022 Email Exchanges – various	Subsequent to the publication of the 2022 Scoping Opinion, the Applicant and MS-LOT discussed the Applicant's proposed approach to the consideration of Seagreen's 150 consented wind turbines within the CEA. MS-LOT confirmed a general contentment with the proposed approach by email on 24 August 2022 and asked that the Applicant clearly set out how the elements will be assessed. The Applicant is satisfied that the EIA accords with the advice provided by MS-LOT during these discussions.	Further detail set out in section 3.1.2 of this document BWMEETING/11.08.22 MSLOT/CEA/24.08.22
General/Overarching	Digital EIA Report Request that further consultation be undertaken on the structure of the digital EIA reports.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) Email Exchanges Consultation initiated by the Applicant	Further consultation on the offshore digital EIA template was undertaken between 3 – 31 May 2022. Consultation comments were provided by NatureScot on 5 May 2022 and 31 May 2022. This additional feedback from NatureScot incorporated has been incorporated into the digital reports as far as practicable and the digital scope extended to include the HRA and a read-aloud mode addition for the EIA.	Further detail set out in section 3.1.3 of this document. NS/25.05.22 NS/31.05.22
General/Overarching	Embedded mitigation Request that this be clearly and accurately explained in detail.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (section 3.3)	Nine of the plans requested by MS-LOT are now provided in outline within the EIA Application (these comprise volume 4 of the Offshore EIA Report). Other embedded mitigation is clearly explained in topic chapters. The requested Cable Plan, Code of Construction Practice (CoCP), Decommissioning Plan, Piling Strategy, and Cable Specification and Installation Plan to be provided at Application have not been provided at Application; this is due to the lack of detailed design information pre-consent. These plans will be provided post-consent as required.	See volume 4, appendix 22-26 within the Offshore EIA Report. Further information in the Gap Analysis and section 3.1.4 of this document.
General/Overarching	Mitigation and Monitoring Request that the likely efficacy of mitigation proposed should be explained with reference to residual effects.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (section 3.3.1)	Where additional mitigation has been applied, a discussion as to its efficacy is provided in topic chapters with reference to residual effects, where relevant.	Within relevant chapters of the Offshore EIA Report, notably volume 2, chapter 10 (marine mammals). Also, see section 3.1.4 of this document.
General/Overarching	Project Refinements: June 2022 Boundary reduction and associated revisions to the Project Design Envelope (PDE).	Raised by Applicant. Discussed at Bi-weekly Meeting (Applicant/MS-LOT/NatureScot) 11 Aug 2022.	The Applicant confirmed that updated assessments will be (and are now) provided in Offshore EIA Report. MS-LOT has confirmed that it is not necessary to re-scope the Project due to the boundary change. The Applicant refers to the bi- weekly meeting where this was discussed and agreed.	BWMEETING/11.08.22





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
General/Overarching	Printing requirements From 30 Sept 2022 hard copies of all EIAs and Additional Information must accompany consent Applications.	Email from MS-LOT to Applicant dated 22 Sept 2022 titled 'Legislation update:' Biweekly Meeting note - 28/07/2022	The Applicant has met these requirements through the provision of hard copies of the requested documents in a reasonable number of public places, in addition to electronic and digital versions of the Offshore EIA Report and accompanying documents.	See volume 1, chapter 1 and volume 1, chapter 5 of the Offshore EIA Report BWMEETING/28.07.22
General/Overarching	ScotWind ScotWind Projects to be acknowledged in the Offshore EIA Report (CEA).	MS-LOT verbal request at Marine Mammal Road Map Meeting 4 (as documented in the minutes) for "an acknowledgement of the Scotland projects within the EIA." MS-LOT/MINUTES/MM/12.09.22	To enable the submission of the Application, the long-list of plans and projects (and information on those projects) considered in the CEA was closed to further revisions three months prior to the Application date. ScotWind projects are considered in the CEA Screening (volume 3, appendix 6.5) so far as possible on the information available when the Application documents were being finalised.	CEA within volume 2 (topic chapters) of the Offshore EIA Report MS-LOT/MINUTES/MM/12.09.22 Volume 3, appendix 6 of the Offshore EIA Report.
Physical Processes	Hydrodynamic/hydro-sedimentary modelling Request for further discussions to take place.	Advice issued after Road Map Meeting 1. Also raised at Biweekly NS- LOT/NatureScot 25 Feb 22. BWMEETING/25.02.22.	This matter was addressed through the presentation of further information on physical processes at Road Map Meeting 3 (March 2022) (for benthic, fish and shellfish and physical processes). Based on feedback received from NatureScot (SNCB/RMM4/BEN//16.09.22) the Applicant understands this request to be satisfied.	Further detail set out in section 3.2.1 of this document. SNCB/RMM4/BEN//16.09.22
Physical Processes	Near-sea-surface wind velocities Request that Applicant consider influence of the Proposed Development on near-sea-surface wind velocities.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022)	MS-LOT recommends that the Applicant considers if the large number of wind turbines may change the near-sea-surface wind velocities. On consideration of the potential for impacts to occur and the need to undertake a proportional EIA of the likely significant effects of the Proposed Development, the Applicant has not assessed this further. Effects in the context of strong offshore winds are expected to be immaterial and these considerations are more relevant to wind farm planning in coastal waters.	Gap Assessment for Scoping Study. Consultation Responses in volume 2, chapter 7 of the Offshore EIA Report.
Physical Processes	Key issues from Road Map Meetings For example, advice on data presentation, data limitations and potential secondary scour.	SNCB advice issued after Road Map Meeting 3: SNCB/RMM4/BEN//20.04.22 SSE/RMM3/BEN//25/.08.22	In the course of Road Map Meetings held subsequent to the publication of the 2022 Scoping Opinion, the SNCBs (supported by MS-LOT) issued advice pertaining to the presentation of information, data limitations and potential secondary scour. The Applicant responded in course of Road Map Process. In joint advice issued subsequently, NatureScot and JNCC "welcome[d] the Applicant's response on data presentation, data limitations and potential secondary scour" (SNCB/RMM4/BEN//16.09.22) and stated that the Applicant's response provides reassurance.	Further detail set out in section 3.2.1 of this document. Volume 3, appendix 8.2 SNCB/RMM4/BEN//16.09.22.
Physical Processes	Re-exposure of cables and beach lowering Concerns within the ncMPA.	SNCB advice issued after Road Map Meeting 1, 2 and 3, notably: SNCB/RMM4/BEN//20.04.22	Through the Road Map Process, NatureScot and the JNCC reiterated concerns that any armouring of the cables through areas of sand waves/megaripples (whether at installation or in response to future re-exposure) could disrupt the hydrodynamics that underpin the ncMPA features. The Applicant has advised that this is addressed by Project design and will be informed by further detailed work including Cable Burial Risk Assessments (CBRAs). The inclusion and assessment of seabed preparation works including sand wave clearance will also help mitigate the risk of cables exposures and/or the need for further cable protection measures. The Applicant has committed to a trenchless technology to install cables at landfall (such as horizontal directional drilling) which will place the cables at a sufficient depth to eliminate vulnerability of the cable to coastal processes and exposure to risk of damage.	Further detail now included in volume 2, chapter 7. Further detail set out in section 3.2.3 of this document. SNCB/RMM4/BEN//16.09.22
Physical Processes	Sand waves/sand wave recovery Request for evidence to support the assessment of sand waves/sand wave recovery.	Advice issued after Road Map Meeting 3	The requested evidence is not available or required to conclude no likely significant effects. Notwithstanding, the Applicant has made a commitment to monitor sand wave recovery following seabed clearance activities to verify the findings of the assessment with stakeholder agreement. In advice issued 16 Sept, NatureScot/JNCC "welcome the additional comments around sand waves".	Further detail set out in section 3.2.2 of this document. Volume 2, chapter 7 of the Offshore EIA Report





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
				Volume 3, appendix 6.4
				SNCB/RMM4/BEN//16.09.22
Physical Processes Marine Protected Area	Firth of Forth Banks Complex Marine Protected Area Assessment	SNCB advice after Road Map Meeting: SSE/RMM4/MPA/04.05.22	'MPA Assessment') undertaken for Proposed Development. NatureScot and JNCC reviewed a draft of this report and confirmed (without prejudice to the final MPA Assessment) that on the current direction of travel the assessment scope is appropriate and the Conservation Objectives of the MPA unlikely to be bindered.	Further detail set out in section 3.4 of this document.
Assessment Scope.	Scope.	SNCB//RMM4/MPA 26.05.22		The Berwick Bank Wind Farm Marine Protected Area (MPA)
		MEETING/RMM4/MPA/31.05.22		Assessment (SSER, 2022b)
		SNCB/RMM4/MPA/26.05.22 SSE//RMM4/MPA/26.08.22		SNCB//RMM4/MPA 26.05.22
		SNCB//RMM4/MPA/01.09.22		SNCB/RMM4/BEN//16.09.22
		SNCB/RMM4/BEN//20.04.22		
Benthic and Intertidal Ecology	Carbon sequestrated in marine benthic sediment	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022)	An evaluation of the loss of carbon sequestrated in marine benthic sediment within the footprint of the Proposed Development and of possible effects in carbon has been undertaken. There is no indication that the sediments within the	See volume 2, chapter 8 and volume 3, appendix 21 of the
Climate Effects	Request for valuation of the loss of carbon sequestrated in marine benthic sediment within the footprint of the Proposed Development to be fully addressed in the Offshore EIA Report.		Proposed Development site boundary are of particular importance for carbon storage (and to the contrary TOC analysis indicates carbon levels are low), the disturbance of sediment is of local scale, temporary and of short duration with much of the disturbed sediment being redistributed and retained in the local area. Based upon the above and when considered in the context of the Effects on Climate assessment undertaken, it is considered that the contribution from release of carbon from marine sediments is negligible and hence has not been further considered in the Effects on Climate assessment. Further details are included in the Climate Assessments Report in volume 3, appendix 21.	Offshore EIA Report.
Benthic and Intertidal	Seagreen Project 1A: CEA	Raised by Applicant. Bi-weekly Meeting (Applicant/MS- . LOT/NatureScot) on 11 Aug 2022	After the publication of the 2022 Scoping Opinion, the Applicant presented its approach to the cumulative assessment of habitat loss/disturbance with Seagreen Project 1A to MS-LOT via email (MSLOT//CEA/24.08.22) and at the Bi-weekly Meeting held on 11 August 2022. In the course of discussions, the Applicant revised its approach and is now following the approach advised by MS-LOT and has undertaken the CEA using publicly available information.	Further detail set out in section
Ecology	Assumptions for cumulative assessment of habitat loss/disturbance.			3.3.1 of this document. MSLOT//CEA/24.08.22
				BWMEETING/11.08.22
Benthic and Intertidal Ecology	Cable protection Request for detail on requirements, target method of placement and basis of the 15% cable protection value.	(MS-LOT, 2022) Advice issued after Road Map Meeting 3	The 15% assumption has been based upon initial understanding of ground conditions within the Proposed Development and has taken recent project experience into account from other projects where greater % of cable protection may be required. This has resulted in an increased from 10% in earlier iterations of the PDE. As more detailed design work is undertaken areas requiring additional protection will be identified, based on the actual conditions. Final locations, types	Further detail set out in section 3.3.2 of this document.
Benthic and Intertidal Ecology	Drilling fluids/effluents and cuttings		and quantities will be submitted to MS-LOT for approval post consent. This matter was addressed in the course of the Road Map Process (see volume 3, appendix 8.3). More detail is now provided in volume 2, chapter 8 of the Offshore EIA Report concerning use of drilling fluids that are on the PLONOR	Further detail set out in section 3.3.3 of this document.
	Request for information to enable assessment of impact of drilling fluids/effluent and drill cuttings.		(Poses Little or No Risk) list. Additional designed in measures are provided (see volume 3, appendix 6.2).	Volume 2, chapter 8 of the Offshore EIA Report.
Benthic and Intertidal Ecology	Strategic monitoring: Invasive non- native species (INNS)	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022).	Notwithstanding a finding of no significant adverse effects, the Applicant has made a commitment to engage with MSS, NatureScot and other relevant key stakeholders to identify and deliver proportionate measures for contributing to strategic	Further detail set out in section 3.3.4 of this document.





Category	Торіс	Source of Scoping/Post-scoping Advice	e Discussion	Relevant Section of Audit Document and Supporting References
	Request for strategic monitoring of foundation structures in the splash zone.	Road Map Meeting 2 SNCB/RMM4/MPA/17.05.22	monitoring of hard structure colonisation and changes in community structure and local species diversity in the immediate vicinity of hard structures.	Volume 2, chapter 8 of the Offshore EIA Report.
Benthic and Intertidal Ecology	Electromagnetic fields (EMF) impacts	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022).	on benthic invertebrates are scoped out of the EIA and MPA Assessment with reference to contemporary studies on this matter. In response to this advice, the studies pertaining to EMF impacts provided by NatureScot in [SNCB/RMM4/MPA/30.06.22] have been considered and incorporated into the EIA, where relevant. This is evidenced in	Not discussed further in the Audit Document; detail in volume 2,
Marine Protected Area Assessment	Request to consider contemporary evidence.	MEETING/RMM4/MPA/31.05.22		chapters 8 and 9 of the Offshore EIA Report and the MPA Assessment Report (SSER, 2022c).
Fish and Shellfish Ecology				· · · · · · · · · · · · · · · · · · ·
Benthic and Intertidal Ecology	Road Map Process for benthic/intertidal ecology	Advice following Road Map Meetings – see volume 3, appendix 8.3.	SNCB/RMM4/BEN/16.09.22), no key items discussed following the issue of the 2022 Scoping Opinion are considered to [Not discussed further in the Audit Document.
Various.	Various.			SNCB/RMM4/BEN//16.09.22
Marine Protected Area Assessment	Wind turbine layout in the ncMPA	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022)	n MS-LOT requested (on the basis of SNCB advice) that a map be provided to enable an accurate interpretation of wind turbines and protection materials relative to features in the ncMPA. At this stage in the design process, there is uncertainty about the type and location of wind turbines and protection requirements and hence the adoption of the design envelope approach. The Applicant has therefore applied a precautionary assumption (a % overlap) for infrastructure placed within the MPA in order to undertake the assessments. These assumptions were discussed during the Road Map Process and no issues were raised.	Not discussed further in the Audit Document.
	Request that the Applicant includes a map of the wind turbine layout in relation to the Firth of Forth Banks Complex NCMPA with the Application.			SNCB/RMM4/BEN//16.09.22
Marine Protected Area Assessment	Scope Various regarding the scope and findings of the Firth of Forth Banks Complex Marine Protected Area (ncMPA Assessment).	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022)	As documented in full in volume 3, appendix 8.1, post-scoping discussions have included the quantification of impact the 'ocean quahog aggregations' feature; terminology regarding impacts to habitats/protected features for	Further detail set out in section 3.4 of this document.
		Road Map Process (meeting and advice issues subsequently)	"permanent/long term impacts; the need for transparency in how the maximum design scenario has been calculated; early consideration of Equivalent Environmental Benefit; comments on presentation and scope. A copy of the draft MPA Assessment was shared with MS-LOT, NatureScot and the JNCC on 4 May 2022. Following this and a dedicated MPA	Volume 3, appendix 8.1: The Benthic and Fish and Shellfish and
		Email Exchanges – various, including:	Road Map Meeting (31 May 2022), NatureScot and the JNCC issued joint advice that was supportive of the Applicant's	Physical Processes Road Map Document.
		NatureScot/JNCC joint advice following MPA Road Map Meeting 4	responses and approach and stated on a without prejudice basis, that the current direction of travel of the MPA Assessment would mean that the Conservation Objectives of the MPA are unlikely to be hindered. The Applicant therefore considers that these matters raised after the publication of the 2022 Scoping Opinion have been addressed to	The Berwick Bank Wind Farm Marine Protected Area (MPA)
		SNCB/RMM3/BEN//29/.03.22	the satisfaction of the SNCBs.	Assessment (SSER, 2022b).
		SNCB/RMM4/BEN//20.04.22		SSE/RMM4/MPA/04.05.22
				SNCB//RMM4/MPA 26.05.22
				MEETING/RMM4/MPA/31.05.22
				SNCB/RMM4/MPA/26.05.22
				SSE//RMM4/MPA/26.08.22
				SNCB//RMM4/MPA/01.09.22
				SNCB/RMM4/BEN//20.04.22





Category	Торіс	Source of Scoping/Post-scoping Advice	e Discussion	Relevant Section of Audit Document and Supporting References
Fish and Shellfish	Ramp-up and soft-start piling to mitigate underwater noise Query over effectiveness of ramp-up and soft-start piling as effective mitigation for salmon and sea trout with respect to auditory injury/displacement.	(MS-LOT, 2022)	Underwater noise assessments indicate that neither seasonal restrictions nor sound abatement measures are necessary in relation to construction activities. With respect to these activities, the Applicant proposes the use of soft start piling and presents evidence that use of soft starts for Atlantic salmon and other fish species are effective mitigation to minimise risk of injury, therefore these are used within the EIA.	Further detail set out in section 3.5.1 of this document. Detail in volume 2, chapter 9 of the Offshore EIA Report.
Fish and Shellfish	Strategic monitoring: marine and diadromous fish Request for strategic monitoring for marine and diadromous fish.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) Updated advice provided following Road Map Meetings	The Applicant has made a commitment to engage in post-consent discussions with Marine Scotland and the SNCBs to identify opportunities for contributing to proportionate and appropriate strategic monitoring of diadromous fish species. This may include research priorities identified by ScotMER steering group.	Further detail set out in Section 3.5.2 of this document. SNCB/RMM4/MPA/17.05.22
Marine Mammals	Conversion Factors In the 2022 Scoping Opinion, MS-LOT advised the Applicant to model a range of conversion factors (1%, 4% and 10%).	(MS-LOT, 2022)	Following the publication 2022 Scoping Opinion, a key topic of post-scoping discussion has been the most appropriate conversion factor to apply to the underwater noise modelling and related chapter assessments of effects. At Application, all requested conversion factors within requested range have been modelled (and included 1% constant, 4% reducing to 0.5% and 10% reducing to 1%) with all results provided in the Offshore EIA Report. The requested justification for the most appropriate conversion factor to be carried forward to assessment is also provided. This justification was peer-reviewed by an external underwater noise expert. The assessment was subsequently based on ranges predicted using either a 1% constant or 4% reducing conversion factor (which ever results in the most conservative outcome). A late clarification of the Scoping Advice established that instantaneous Permanent Threshold Shift (PTS) impact ranges are calculated using the highest hammer energy for 1%, 4% and 10% constant conversion factors. These were subsequently included in a technical appendix to the Marine Mammals Offshore EIA Report chapter (volume 2, chapter 10) as supplementary information. The Applicant remains confident that the approach taken forward for assessment is based on the most appropriate criteria and follows the Scoping Advice.	Further detail set out in section 3.6.1 of this document. Volume 2, chapter 10 of the Offshore EIA Report Detail on discussions:- Volume 3, appendix 10.3: Marine Mammals Road Map Volume 3, appendix 10.1: Subsea Noise Technical Report
Marine Mammals	Mammal Technical Report Request for Applicant to share marine Mammal Technical Report with SNCBs.	MSLOT/RMM4//MM/04.10.22	g:Due to the timing of the request being close to application submission and the need to finalise documents in a timely manner, the report was not provided. Full details will be provided with the application.	Not discussed further in the Audit Document.
Marine Mammals	Unexploded Ordinance (UXO) clearance Request for maximum design scenario for high order detonation in terms of impact and mitigation to be modelled.	(MS-LOT, 2022)	Risk of high order detonation event has been modelled.	Further detail set out in section 3.6.2 of this document. See volume 2, chapter 10 of the Offshore EIA Report
Marine Mammals	Unexploded Ordinance (UXO) clearance Scare charges should not be employed for marine mammal mitigation and therefore updated UXO mitigation required.	NatureScot advice by email SNCB/RMM4/MM//30.09.22	The Applicant has prepared the Application based on the use of "scare charges" for UXO based on previous advice/approach taken on other projects. The Applicant is not in a position to re-model prior to Application submission (or undertake an assessment of UXO clearance without use of scare charges). The Applicant acknowledges the feedback from stakeholders but considers the use of scare charges to be standard and effective mitigation. The Applicant and will look to further explore these points post-application or post-consent.	Further detail set out in section 3.6.2 of this document. SNCB/RMM4/MM//30.09.22





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
Marine Mammals	Modelling Interim Population Consequences MS-LOT expect to see iPCoD used in the CEA as well as for Proposed Development alone.	NatureScot advice by email SNCB/RMM4/MM//30.09.22	iPCoD modelling undertaken for Proposed Development alone and cumulative as requested.	Non contentious and not discussed further. See volume 2, chapter 10 of the Offshore EIA Report
Marine Mammals	Seagreen Offshore Wind Farm Piling Strategy Applicant asked to be aware of the existence of this strategy.	Email Exchange (MS-LOT and NatureScot MSLOT/CEA/24.08.22)The Applicant uses values from the Seagreen EIA and the piling strategy, whichever provides the maximum design scenario in each instance. This guarantees the most conservative assessment.	Further detail set out in section 3.6.3 of this document. Volume 2, chapter 10 of the Offshore EIA Report
Marine Mammals	Injury ranges for marine mammals Applicant advised that injury ranges should be based on risk of instantaneous injury and use SPLpk as a precaution, with the mitigation zones based on the worst outcome, which is SPLpk at max hammer.	Advice following Road Map Meeting 4 MSLOT/RMM4//MM/04.10.22	The marine mammal Assessment looks at both SPLpk and SELcum and takes whichever is the largest of these two (dual metric approach as recommended by Southall et al. (2019). The Applicant has not complied with advice but has undertaken the more precautionary option which therefore includes consideration of the stakeholder advice.	Further detail set out in section 3.6.4 of this document. Volume 2, chapter 10 of the Offshore EIA Report
Offshore and Intertidal Ornithology	Collision Risk Modelling Use of monthly maximum bird densities as opposed to mean monthly bird densities.	Following receipt of the 2022 Scoping Opinion, the Applicant submitted written questions requesting clarification on a number of points to MS-LOT on 9 February 2022. MS-LOT provided written responses on the 2 March 2022.		Further detail set out in section 3.7.1 of this document. Volume 2, chapter 11 of the Offshore EIA Report Volume 3, appendix 11.3
Offshore and Intertidal Ornithology	Displacement/barrier effects Non-breeding season effects to be considered for kittiwake and gannet.	Following receipt of the 2022 Scoping Opinion, the Applicant submitted written questions requesting clarification on a number of points to MS-LOT on 9 February 2022. MS-LOT provided written responses on 2 March 2022.	on previous Forth and Tay projects. Clarification was received from MS-LOT in their written response and the assessment was based on the Scoping Opinion advice.	Volume 2, chapter 11 of the Offshore EIA Report Not discussed further in the Audit Document.
Offshore and Intertidal Ornithology	Displacement/barrier effects Increased mortality rates to be assumed for displaced birds.	Following receipt of the 2022 Scoping Opinion, the Applicant submitted written questions requesting clarification on a number of points to MS-LOT on 9 February 2022. MS-LOT provided written responses 2 March 2022.	The displacement assessment includes use of displacement and mortality rates as advised in the Scoping Opinion. A comparative assessment using alternative displacement & mortality rates is presented as part of the 'Developer Approach' in the EIA. This is presented alongside the 'Scoping Opinion Approach A' and 'Scoping Opinion Approach B', y reflecting the range of rates stipulated in the Scoping Opinion.	Further detail set out in section 3.7.2 of this document. Volume 2, chapter 11 of the Offshore EIA Report Volume 3, appendix 11.4, Annex G
Offshore and Intertidal Ornithology	Requirement to apply two different apportioning methods to non- breeding guillemot due to differences in SNCB advice.	Following receipt of the 2022 Scoping Opinion, the Applicant submitted written questions requesting clarification on a number of points to MS-LOT on 9 February	The 2022 Scoping Opinion contained conflicting advice from Nature Scot and Natural England regarding the apportioning method relating to Flamborough and Filey Coast SPA for common guillemot. This was discussed in Ornithology Road Map Meeting 6, with follow up emails between the Applicant, NatureScot and Natural England. Agreement was reached	Further detail set out in section 3.7.3 of this document.





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
		2022. MS-LOT provided written responses on 2 March 2022.	to follow NatureScot's advice in the Offshore EIA Report, and to provide an alternative assessment to Natural England separately, outside the Offshore EIA Report.	Volume 2, chapter 11 of the Offshore EIA Report
		Ornithology Road Map Meeting 6		
		Email Responses of 02/03/2022 (email from Kerry Bell at MS-LOT), follow up emails from Natural England concluding or 24/06/2022	1	
Offshore and Intertidal Ornithology	Position on SeabORD and SNCB displacement matrix approaches.	Following receipt of the 2022 Scoping Opinion, the Applicant submitted written	The SeabORD model (simplified version) has been run for all applicable species, with the results presented in the Displacement Technical Report (volume 3, appendix 11.3, annex D) alongside a sensitivity analysis of the model (annex H)	Further detail set out in section 3.7.4 of this document.
		questions requesting clarification on a number of points to MS-LOT on the 9 February 2022. MS-LOT provided written responses on the 2 March 2022.		Volume 3, appendix 11.3, annex D and annex H
		Email correspondence in May 2022		
Offshore and Intertidal Ornithology	Use of MRSea-derived density estimates.	Depinion, the Applicant submitted written t		Further detail set out in section 3.7.5 of this document.
				Volume 3, appendix 11.1, annex L
Offshore and Intertidal Ornithology	Recommendation to include consideration of breeding season	- · · · ·	The 2022 Scoping Opinion instructs the assessment to adopt the SNCB-advised avoidance rates (0.989 for gannet). However, the MSS advice is to also provide collision estimates for gannet in the breeding season using the RSPB-	Volume 2, chapter 11 and Volume 3, appendix 11.3
	collisions for gannet at 98% avoidance rate.	questions requesting clarification on a number of points to MS-LOT on 9 February 2022. MS-LOT provided written responses on 2 March 2022.	advised 0.980 avoidance rate. Clarification was requested on which rate should be used as the basis for assessment. The MSS advice received in March 2022 states that the 98% rate is considered precautionary and that although MSS support its use in providing context, the SNCB recommended avoidance rate should be used in the primary assessment. Therefore, the UK SNCB-advised avoidance rate for gannet of 0.989 is used with the Band collision risk model.	Not discussed further in the Audit Document.
	Recommendation to include	on to include Following receipt of the 2022 Scoping The M	he MSS Scoping Representation advice states that generic flight heights from Johnston et al. (2014 with the	Volume 3, appendix 11.3
Ornithology	consideration of gannet collisions based upon flight height estimates from GPS tracking.		corrigendum) be used for the primary collision risk modelling. However the site specific data should be presented with comparisons made between all methods with implications for assessed collision rates discussed. MSS also advise that / GPS derived flight heights are considered in this analysis where these are available (e.g. Cleasby et al. 2015 for gannet). Clarification was requested on the use of this contextual data as the Applicant felt the Scoping Opinion was not explicit in stating that this advice is to be followed.	Not discussed further in the Audit Document.
			The position was clarified in the MS-LOT response on 2 March and contextual CRM results are provided within the Collision Risk Model Technical Report.	
Offshore and Intertidal Ornithology	Update to the 2014 migratory waterbirds collision report.	Ornithology Road Map 3 meeting;	The use of a forthcoming strategic study on collision risk of migratory birds (commissioned by Marine Scotland) was raised during Ornithology Road Map Meeting 3, in September 2021.	Further detail set out in section 3.7.6 of this document.
		Email Responses		Part 3 of the Report to Inform the Appropriate Assessment (RIAA).





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
			Marine Scotland's ScotMER project lead advised that as of the 22 August 2022, the project is still in process and MSS are not in a position to share the draft report yet. The updated report was not available in time for the Berwick Bank assessment, therefore the 2014 report was used.	Volume 2, chapter 11.
Offshore and Intertidal	Ecosystems Assessment and the	Ornithology Road Map 6 meeting	During Ornithology Road Map Meeting 6 in May 2022 it was noted that input from the ScotMER project "Study to examine	Volume 3, appendix 20, annex A
Ornithology ScotMER PVA report.	Email response	report was provided on the 11 August by MS-I () I and has been used in the production of the Inter-related Effects	Not discussed further in the Audit Document.	
Offshore and Intertidal Parallel Assessment. Ornithology		There is a differing opinion between the Applicant and MS/NS regarding some parameters and methods to be used for the ornithology assessment. As a result, the submission will present two full assessments; one based on the Scoping Opinion advised parameters and one based on the Developer Approach. This is accompanied by the Applicant's rationale	Volume 3, appendix 11.3 (main text) and volume 3, appendix 11.4, annex G.	
			on why the Developer's Approach is robust, suitably precautionary and the most appropriate for assessment purposes.	Not discussed further in the Audit Document.
Offshore and Intertidal Characterisation of Cable Corridor. Ornithology	Characterisation of Cable Corridor.	•••	In the 2022 Scoping Opinion (5.10.2) the Scottish Ministers advised that further discussion and agreement on the characterisation of the cable corridor is required as part of the Developer's Road Map process.	Ornithology Road Map Meeting 6 Minutes, volume 3, appendix 11.8,
		The approach for Characterisation of Cable Corridor was outlined during Ornithology Road Map Meeting 6, and there was agreement with all parties on this approach.	Annex A. Not discussed further in the Audit Document.	
Offshore and Intertidal Guillemot 2021 mass stranding event.			The 2022 Scoping Opinion (5.10.3) recommended further consideration of the potential risks to guillemot in light of the 2021 autumn mass mortality, to be considered as part of the Road Map process. The approach for this was outlined during Ornithology Road Map Meeting 6, and there was agreement with all parties on the approach to be taken.	Ornithology Road Map Meeting 6 Minutes, volume 3, appendix 11.8, Annex A.
				Not discussed further in the Audit Document.
Offshore and Intertidal Use of gannet tracking data. Ornithology	Use of gannet tracking data.		2022 Scoping Opinion (5.10.5) referred to the use of gannet tracking data and suggested further discussion and eement was needed as part of the Developer's Road Map process. The approach was discussed at Ornithology Road	Further detail set out in section 3.7.7 of this document.
			Map Meeting 6, with two options put forward, dependant on being able to acquire the relevant tracking data in time.	Volume 3, appendix 11.4, annex E.
			Tracking data was provided in time for the assessment and the preferred assessment method was carried out.	
Offshore and Intertidal CRM avoid Ornithology	CRM avoidance rates.		The 2022 Scoping Opinion (5.10.7) recommended further discussion and agreement on the CRM Avoidance Rates for gannet and kittiwake, as part of the Road Map process. The Avoidance Rate approach was outlined, discussed and agreed between all parties during Road Map 6.	Volume 3, appendix 11.3.
				Not discussed further in the Audit Document.
Offshore and Intertidal Ornithology	Highly Pathogenic Avian Influenza (HPAI)		Reports of avian influence affecting seabird populations on the East coast was discussed. NatureScot commented that a new task force has been established by the ScotGov (inc MSS and MS Policy). Current advice for Berwick Bank is that the assessment should continue, based on advice provided to date and provided prior to the HPAI outbreak.	Not discussed further in the Audit Document.
Commercial Fisheries	Guidance on Fisheries Displacement Assessments	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) and by email:	Full consideration given to the guidance, notwithstanding that it did not result in significant changes in approach.	Further detail set out in section 3.8.1 of this document.
		MSLOT/ADVICE/CF/15.07.22		





Category	Торіс			Relevant Section of Audit Document and Supporting References
	Request for consideration of this guidance with the Offshore EIA Report.			Volume 2, chapter 12 of the Offshore EIA Report.
Commercial Fisheries Offshore Socio- Economics and Tourism	Sale of fish and supply line impacts Request that the Applicant assess potential impacts on sale of fish and supply lines.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) with reference to MAU Scoping representations (2021) MSLOT/MAU/SIA.04.04.22 SSE/SIA/04.03.22 BWMEETING/12.04.22	The commercial fisheries assessment (volume 2, chapter 12) considers impacts on commercial fisheries from reduced access to, or enhanced competition within fishing grounds. The commercial fisheries assessment did not identify any likely significant effects on fishers related to a loss of access to fishing grounds. It is therefore the Applicant's position that commercial fisheries will not likely be significantly affected, which negates the need for an assessment of effects on supply lines and socioeconomics. Given the complex social, economic and environmental variations that could influence the outcomes (and given the lack of a current framework or guidance), any attempt to complete an integrated assessment of supply chains is expected to be complex and unreliable, such that it would not be meaningful.	Further detail set out in section 3.8.2 of this document. Volume 2, chapter 12 of the Offshore EIA Report.
Commercial Fisheries	Over trawlability Requirement for over trawlability studies (OTSs) in the event of fishing over cables. Need for embedded mitigation to ensure that the impact of offshore export cables installation in the Nephrops grounds is as reduced as possible.	(MS-LOT, 2022) (5.11.4)	As described in volume 2, chapter 12 the location, extent and nature of the cable protection used will be shared with fisheries stakeholders. In areas where rock placement is required, consideration will be given to designs that reduce potential snagging risk with fishing gear to facilitate co-existence with mobile fisheries, particularly demersal trawling (i.e. use of graded rocks and berms designed with 1:3 gradients). Furthermore, post-lay and burial surveys will be undertaken and rectification works where appropriate and practicable. Assessments will be undertaken to determine cable burial status (including cable protection) and identify potential changes to seabed conditions. Findings would be shared with the fishing industry to discuss requirements for any further surveys.	Volume 2, chapter 12 of the Offshore EIA Report.
Shipping and Navigation	Vessel Management Outline Navigational Safety and Vessel Management Plan (NSVMP).		MS LOT confirmed at bi-weekly meeting of 05 May 2022 that it is content with the approach providing the proposed documents is fit for purpose and meets the requirement of the VMP and NSP.	Discussions recorded in bi-weekly meeting notes: BWMEETING/12.04.22 BWMEETING/05.05.22
Shipping and Navigation	Navigational simulations Representations from the Chamber of Shipping (CoS) - request for navigational simulations.	(MS-LOT, 2022)	In August 2022, following the second hazard workshop, the CoS contacted the Applicant to strongly recommend that a navigational simulation exercise be undertaken for the Project. The Applicant responded in September 2022 providing its justification for not undertaking this, including the substantial change to the extent of the Proposed Development array area and provision of the designed in measures that will be set out in the risk assessment.	COS/ADVICE/SN/19.08.22 SSE/RESPONSE/COS/SN/28.09.22
Aviation, Military and Communications	Civil Airport Patterns and Procedures Request that the Applicant scope this impact into the EIA.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (para 5.13.3) Email Exchanges (various)	In 2022 Scoping Opinion, MS-LOT did not agree with the Applicant's proposal to scope out potential impacts on civil airport patterns and procedures, due to the presence of obstacles (hereafter 'civil airport patterns'). The Applicant commissioned an independent report to evidence that there is no risk of impacts which has been reviewed by the CAA who subsequently confirmed that the decision to scope out this impact was appropriate.	Further detail set out in section 3.10 of this document.
Seascape, landscape and visual	(SLVIA) study area	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) East Lothian Council response to Scoping	East Lothian Council were uncertain about the 60 km limit to the SLVIA study area, however NatureScot (in their Scoping Response to MS-LOT) advised that a 60 km radius study area was appropriate for the proposed development. A 60 km radius study area was adopted on the basis of this advice and the findings of the SLVIA, undertaken within volume 2, chapter 15 of the Offshore EIA Report, demonstrate that significant effects will not occur beyond this 60 km study area.	-





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References	
Seascape, landscape and visual	Selection of viewpoints Additional viewpoints	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022)	been included in the Offshore EIA Report (Viewpoint 21).	Volume 2, chapter 15 (section 15.11) of the Offshore EIA Report and Figure 15.41 (Viewpoint 21), Figure	
		East Lothian Council Response to Scoping 12 January 2022	Scottish Borders Council requested consideration of an additional viewpoint from Ewelairs Hill, in the Lammermuir Hills, which has been included in the Offshore EIA Report (Viewpoint 22)	15.42 (Viewpoint 22) and Figure 15.43 (Viewpoint 23).	
		NatureScot Response to Scoping 7 December 2021 and email. To: NatureScot. From: The Applicant. Re: CNS REN OSWF Berwick Bank – Pre application 12 January 2022	NatureScot requested that a full assessment of the effects on the view from Isle of May should be undertaken, which has been included in the Offshore EIA Report (Viewpoint 23). In January 2022, the Applicant requested that a wireline only view would be provided from Isle of May due to the unpredictability of weather conditions and potential difficulties regarding transport to the island during survey period (winter 2021/2022). The Applicant wrote to NatureScot January 2022 to advise we consider that judgement that viewpoint photography taken from the Fife coastline provides sufficient information to give an understanding of the Proposed Development's visual context, that photographs from the Isle of May are not required and a robust assessment can be undertaken using wirelines. The Applicant considers that a robust and proportional assessment has been undertaken for Isle of May Viewpoint.		
Seascape, landscape and visual	Cumulative effects	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) NatureScot response to Scoping (07/12/2021)	NatureScot advised that agreement should be sought form the relevant local authorities as to which onshore wind farm developments are most appropriate to be considered within the cumulative assessment. The Applicant did not undertake further discussion with local authorities because the key authorities provided clear feedback in their Scoping Responses, including Scottish Borders Council who highlighted the main clusters of onshore wind farm development in the Lammermuir Hills (Crystal Rig and Aikengall) and around Penmanshiel and Coldingham Moors (Drone Hill, Penmansheil and Quixwood Moor). The Applicant also undertook an extensive cumulative wind farm search (in line with guidance) as part of the assessment, which are identified in Table 15.42 of the Offshore EIA chapters (volume 2, chapter 15). The approach to inclusion of Seagreen 1 (114 turbines) forming part of the baseline, in accordance with the GLVIA3 guidance was discussed via email in August 2022. MS-LOT confirmed they are largely content with the approach outlined by the Applicant.	and 15.12) and Table 15.42 of the	
Cultural Heritage	Category B and C listed buildings Request for consideration of Category B and C listed building in the Offshore	January 2022 gory	The Applicant's position is that Category B and C listed building should be scoped out of the EIA as per the approach taken for the consented wind farms in the area and other projects in Scottish waters. The Applicant's approach is in line with current guidance (e.g. Planning Advice Note 1/2013: Environmental Impact Assessment, which espouses a proportionate approach that focusses on significant environmental effects). The guidance provided by Historical	Further detail set out in section 3.12 of this document.	
E	EIA Report.		Environment Scotland (HES) in The EIA Handbook and elsewhere Handbook (HES & Scottish Natural Heritage 2018, 63), has Category B and C Listed Buildings as of regional and local importance, respectively. On 29 April, and 25 May, 2022, the Applicant emailed the ELC and set out its justification to take an alternative approach to the position adopted by MS-LOT at scoping, but has received no response.	SSE/ELC/25.03.22 SSE/ELC/29.04.22	
Infrastructure and other users	Onshore traffic assessments from Offshore EIA Report	(MS-LOT, 2022) paragraph 5.17.1.	that the EIA should assess potential impact increased Heavy Goods Vehicles (HGVs) on trunk roads as a result offshore construction. The Applicant subsequently engaged with TS who confirmed (1 April 2022) that they we content to scope out the requirement on the basis that the Applicant had committed to producing Construction Traffic Management Plan post consent.	Commitment included in volume 3, appendix 6.3 (Enhancement, Mitigation and Monitoring Commitments)	
				SSE/TS/16.02.22 TS/SSE/01.04.22	
Offshore Socio- Economics and Tourism	Consultation strategy Request for further engagement with communities and local industries.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) with reference to MAU Scoping representations (2021)	Additional consultation has been undertaken as detailed in section 3.14of this document. The findings from these community engagement events are set out fully within the PAC Report. Issues raised during these community engagement events relating to socio-economics and tourism have been considered within the Offshore EIA chapter. Consultation with key stakeholders and the local community will continue as the Project progresses.	Further detail set out in section 3.14 of this document. PAC Report	





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
		MSLOT/MAU/SIA.04.04.22		BWMEETING/25.02.22
		SSE/SIA/04.03.22 BWMEETING/12.04.22		SSE/SIA/04.03.22
				MSLOT/MAU/SIA.04.04.33
Offshore Socio- Economics and Tourism	Scope of Socio-Economics Assessment Request that the Applicant consider a wider range of social impacts.	Requirement to address broader range of social and economic impacts, and	The approach and methodology for the socioeconomics chapter has been refined and enhanced based on the Scoping Advice to ensure community engagement has been included as part of the approach to socio-economics EIA. The datasets/reports specifically referred to by MAU have been considered to inform the socio-economic assessment of effects. The Applicant has further drawn on existing community consultation, including review of stakeholder, engagement documentation and logs. The Applicant also made provisions for further engagement with the community, through additional pre-planning application public consultation events.	Further detail set out in section 3.14 of this document.
		undertaking primary data collection, including stakeholder engagement, to inform the analysis. Further consultation on the socioeconomics assessment directed.		The findings from the community engagement events are set out fully within the PAC Report.
		Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (Para 5.18.1)		BWMEETING/25.02.22
		MAU Representations		SSE/SIA/04.03.22
		Biweekly MS/NS call 25 February 2022		MSLOT/MAU/SIA.04.04.33
		Clarifications: 04 March 2022		
		Written responses from MAU: 04 April 2022.		
Offshore Socio- Economics and	Sale of fish and supply line impacts Request that the Applicant assess potential impacts on sale of fish and supply lines.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (Para 5.18.3).	As for commercial fisheries, above. The commercial fisheries assessment (volume 2, chapter 12) considers impacts on commercial fisheries from reduced access to, or enhanced competition within fishing grounds. The commercial fisheries assessment did not identify any significant likely significant effects on fishers related to a loss of access to fishing grounds. It is therefore the Applicant's position that commercial fisheries will not likely significantly be affected, which negates the need for an assessment of effects on supply lines and socioeconomics.	Further detail set out in section 3.8.2 of this document.
Tourism		Impacts on sale of fish and the supply chain should be assessed as part of the		BWMEETING/25.02.22
		socio-economic assessment. There may be a requirement for further discussion between MS-LOT.		MSLOT/MAU/SIA.04.04.33
		MS-LOT's written response (4 April 2022) to the Applicant's request (by email on 4 March 2022) for clarification. Also discussions at the biweekly call of 25 February 2022 and further discussions with the Applicant's socioeconomic topic experts.		
Offshore Socio- Economics and Tourism	Impacts on socioeconomics offshore and onshore	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022)	The onshore and offshore chapters are separate. However, the onshore EIA will be submitted alongside the offshore EIA. These draw on a single technical report which sets out the combined, and component economic impacts. The CEA (Tier 1) also considers both combined onshore and offshore socio-economic effects.	Further detail set out section 3.14 of this document.
	Offshore and onshore activities and structures must be considered together.	Clarification call with MS-LOT – March 2022		





Category	Торіс	Source of Scoping/Post-scoping Advice	Discussion	Relevant Section of Audit Document and Supporting References
Water Quality	Scope and presentation of assessments Request to consider water quality impacts and Water Framework Directive within the Offshore EIA Report.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) Biweekly MS/NS call 25 February 2022	Request clarified with MS-LOT and water quality chapter and WFD Report now provided in the Offshore EIA Report (volume 2, chapter 20 and volume 2, appendix 19)	Non contentious and not discussed further in this Audit Document. See volume 2, chapter 2 and volume 2, appendix 19
Inter-related Effects	Ecosystems approach to inter- related effects assessment Consequences across key trophic levels (positive or negative) of a potential changes (e.g. in prey distribution and abundance on top predator interests) and how this may influence population level impacts.	Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) SNCB comments from Ornithology Road Map Meeting 4 - 2 February 2022	The Applicant has developed an approach, which takes into account SNBC comments and the reference materials highlighted. A bespoke Offshore EIA Report chapter is provided for the consideration of inter-related effects and ecosystem assessment which refers to a literature review the Applicant has undertaken to ensure reference to contemporary research and guidance.	See volume 2, chapter 20 and volume 3, appendix 20.
Major Accidents and Disasters	Scope Request for assessment of the likely significant effects deriving from the vulnerability of the Proposed Development to major accidents and disasters.	Berwick Bank Wind Farm Scoping Opinion Biweekly MS/NS call 25 February 2022	Major Accidents and Disasters chapter provided in the Offshore EIA Report (volume 2, chapter 21).	Non contentious and not discussed further. See volume 2, chapter 21 BWMEETING/25.02.22
Climate Change	There are no post-scoping communications or developments to include in the Audit Document			





DETAIL ON POST-SCOPING DISCUSSIONS 3.

3.1. GENERAL/OVERARCHING

3.1.1 CAMBOIS CONNECTION

- In the 2022 Scoping Opinion the Scottish Ministers view plans for an additional offshore cable corridor 10. (known in October 2022 as the 'Cambois connection') as a necessary and integral part of the Proposed Development, Accordingly, the Applicant was advised to submit an Offshore EIA Report (and coinciding Application) for the Proposed Development which included the Cambois connection (see paragraph 2.4.1).
- 11. In subsequent face-to-face meetings with MS-LOT and via a letter dated 4 April 2022, the Applicant provided detailed information to MS-LOT on the offshore transmission assets for the Proposed Development to support its position that the additional cable is not an integral, necessary part of the Proposed Development. In June 2022, MS-LOT confirmed by return letter, with reference to the clarifications provided, that Scottish Ministers understand that the additional cable (Cambois connection) is **not** an integral, necessary part of the Proposed Development. However, MS-LOT did advise that the Applicant must provide a sufficient CEA of the additional cable route within the Offshore EIA Report.
- 12. Applications for the necessary consents for the Cambois connection (including marine licenses) will be applied for separately. The Cambois connection has been considered as a cumulative project within the CEAs reported within the Offshore EIA Report. CEAs are based on information in the Cambois connection Scoping Report (SSER, 2022e), published in November 2022.

3.1.2 CUMULATIVE ASSESSMENT OF SEAGREEN PROJECTS

- 13. During the bi-weekly call (between the Applicant, MS-LOT and NatureScot) on 11 Aug 2022, MS-LOT and NatureScot did not agree with the Applicant's proposed approach to the consideration of Seagreen's 150 consented wind turbines within the CEA. As the section 36 (s.36) consents for the component projects of Seagreen are under Seagreen Alpha and Bravo, MS-LOT and NatureScot proposed that the infrastructure be split across both consents (i.e. up to 75 wind turbines in each). The Applicant proposed that it should consider Seagreen 1 (114 turbines) and Seagreen Project 1A (36 wind turbines) separately as the component projects comprising Seagreen are progressing under different timeframes. The Applicant thereafter set out its proposed approach in an email to MS-LOT and NatureScot on 24 August 2022 as follows:-
 - Seagreen 1 114 wind turbines with export cables. Currently under construction (fully operational by the time the Proposed Development starts construction);
 - Seagreen Project 1A 36 wind turbines. Due to commence construction as early as 2023 (potential temporal overlap with the construction phase of the Proposed Development; and
 - Seagreen 1A Export Cable Corridor export cable for Seagreen Project 1A. Covered by a separate marine licence.
- MS-LOT confirmed a general contentment with the proposed approach by email on 24 August 2022. 14. However, MS-LOT emphasised the need for the Applicant to clearly articulate which elements will be assessed under what 'name' within the Proposed Development Application. The Applicant has therefore undertaken the CEA allocating 114 and 36 wind turbines to the respective Seagreen projects (Seagreen 1 and Seagreen 1A Project) and provided clear exposition in the introduction chapter (volume 1, chapter 1) of the Offshore EIA Report.

In its email of 24 August 2022, MS-LOT further highlighted the Seagreen Offshore Wind Farm Piling 15 Strategy. As this is relevant to the underwater noise assessments, this is addressed in section 3.6

3.1.3 DIGITAL REPORTS

16. In the 2022 Scoping Opinion, MS-LOT advised further discussion and agreement with Marine Scotland on the approach to digitisation for the EIA Report(s). The Applicant responded by opening a consultation on the template for the digital EIA. The template was shared with stakeholders for comment between 3 May 2022 to 31 May 2022. This consultation resulted in two sets of comments from NatureScot (on 5 May 2022 and 31 May 2022) which have been actioned to improve usability. The scope of the documents being digitised has also been extended since the 2022 Scoping Opinion to include the HRA reports and a readaloud mode addition for the EIA.

3.1.4 MITIGATION AND MONITORING

- In the 2022 Scoping Opinion, MS-LOT suggested that any embedded mitigation relied on should be clearly 17. and accurately explained in detail within the Offshore EIA Report. The likely efficacy of the mitigation proposed should be explained with reference to residual effects. To address this request, the Applicant has developed the following outline plans that will be submitted with the Application:-
 - volume 4, appendix 22: Environmental Management Plan (EMP);
 - volume 4, appendix 22, annex A Marine Pollution Contingency Plan (MPCP);
 - volume 4, appendix 22, annex B: Invasive Non-Native Species Management Plan (INNSMP);
 - volume 4, appendix 22, annex C: Scour Protection Management Plan (SCMP);
 - volume 4, appendix 23, Marine Mammal Mitigation Protocol (MMMP);
 - volume 4, appendix 24: Fisheries Management and Mitigation Strategy (FMMS);
 - volume 4, appendix 25: Navi Safety and Vessel Management Plan (NSVMP); and
 - volume 4, appendix 26, Aid to Navigation Management Plan (ANMP).
- The Applicant will provide the requested Cable Plan, Code of Construction Practice (CoCP), 18. Decommissioning Plan, Piling Strategy, Cable Specification and Installation Plan when sufficient information on detailed design and construction methods is available post-consent. The Pollution Prevention Plan is considered to be covered by the EMP (volume 4, appendix 22).
- With respect to mitigation to reduce significant adverse effects, where this has been identified in chapters, 19. the efficacy of these measures are discussed in detail. For example volume 2, chapter 10 provides a detailed discussion on Acoustic Deterrent Devices.
- MS-LOT further specifies that the Offshore EIA Report identifies and describes any proposed monitoring 20. of significant adverse effects and how the results of such monitoring would be utilised to inform any necessary remedial actions.
- 21. In most instances where commitments to monitoring have been made (e.g. for physical processes, benthic ecology and diadromous fish), the Applicant has not done so in response to a finding of significant adverse effects. Therefore, no mitigation has been proposed in view of significant adverse effects that would require monitoring to demonstrate or review its efficacy and, the requirement for adaptive management does not apply. As above, where mitigation has been applied in topic chapters a discussion as to its efficacy is provided in topic chapters.
- 22. For offshore ornithology, detailed monitoring commitments will be agreed post consent at the Forth and Tay Regional Advisory Group - Ornithology (FTRAG-O) meetings and included in the Project Environmental Monitoring Plan (PEMP). Further details are included within volume 3, appendix 6.3.





3.2. PHYSICAL PROCESSES

3.2.1 ISSUES RAISED AT ROAD MAP MEETINGS

- 23. The physical process topic group completed a Road Map Process which involves one Road Map Meeting (Road Map Meeting 3) which took place after the 2022 Scoping Opinion was published. The Applicant has identified five key issues raised, substantially from the following advice issued by email to the Applicant subsequent to Road Map Meeting 3:
 - 20 April 2022: NatureScot and JNCC joint advice to the Applicant following Road Map Meeting 3;
 - 25 August 2022: Applicant's response to joint advice received 20 April 2022; and
 - 16 September 2022: further joint advice from NatureScot/the JNCC in response to the Applicant's email of 25 August.
- The key post-scoping issues for physical processes concern:-24.
 - advice on data presentation, data limitations and potential secondary scour;
 - further discussion on hydrodynamic/hydro-sedimentary modelling (requested in 2022 Scoping Opinion);
 - comments on the scope of the Firth of Forth Banks Complex MPA Assessment;
 - issues around the potential re-exposure of cables and beach lowering; and
 - evidence to support the assessment of sand waves in particular in relation to sand wave recovery.
- 25. Item 1 and 2 are considered to be satisfied by discussions at Road Map Meeting 3 and with reference to comments in NatureScot and JNCC joint advice of 16 September 2022. This indicated the information was useful subject to key issues 4 and 5. Item 3 is addressed in the Berwick Bank Wind Farm Marine Protected Area Assessment (SSER, 2022b) as confirmed (without prejudice) in NatureScot and JNCC's joint advice regarding the review of the draft MPA Report. Key issues 4 and 5 are addressed below in section 3.2.3 and 3.2.2 respectively.

3.2.2 SAND WAVE RECOVERY

- 26. Email exchanges between the Applicant and Road Map Meeting attendees (20 April 2022, 25 August 2022 and 16 September 2022) audit discussions around a request that the Applicant provide evidence that the sand waves are active, therefore able to dynamically reform either in-situ or by migration. Also that consideration is also given to the risk of a trenched cable being re-exposed due to the dynamics of migrating sand waves.
- 27. The Applicant explains in its response of 25 August 2022, that the current modelling study was not designed or intended to examine the detailed sand wave mobility and longer-term morphology. Further, that modelling to examine the potential for changes in sand wave mobility and migration studies usually involve a combination of multiple geophysical surveys (i.e. current and historic) recorded over a reasonably long period. The Applicant was able to provide evidence for other industries that suggests that sand based sediments would be expected to occur gradually over a period of several years. Based on this expectation and geophysical survey data sand wave recovery is considered likely to occur and no significant effects are predicted in the EIA. Notwithstanding, the Applicant has made a commitment to monitor sand wave recovery following seabed clearance activities, with stakeholder agreement and address the limited data available for this area of research.

3.2.3 POTENTIAL RE-EXPOSURE OF CABLE

- 28. In the 2022 Scoping Opinion and subsequently in Road Map Meetings, MS-LOT has raised queries over the design decisions for cable burial particularly through areas of sand waves/mega ripples and whether at installation or in response to future re-exposure could disrupt the hydrodynamics that underpin the MPA features.
- 29. The Applicant advised that further detailed designed work and a CBRA is required to confirm the extent of cable burial and the requirement and locations for additional cable protection. This will include consideration of installation of cables through seabed forms and the requirement for seabed preparation activities including sand wave clearance which may be required to mitigate the risk of cable exposures and further cables burial activities or use of cable protection. Furthermore, the potential disruption to hydrodynamics resulting from the Proposed Development including cable protection has been included in chapter 7 (volume 2) of the Offshore EIA Report.

3.3. BENTHIC SUBTIDAL AND INTERTIDAL ECOLOGY

3.3.1 CUMULATIVE EFFECTS ASSESSMENT (SEAGREEN PROJECT 1A)

- 30. Applicant sought advice on its approach to the CEA with Seagreen and again by email on 1 August 2022. The Applicant initially proposed to assume a habitat loss/disturbance footprint that is 25% of the total habitat loss/disturbance footprint Seagreen reported in the Seagreen EIA (Seagreen Wind Energy, 2012). This was considered conservative and defendable on the basis the 36 wind turbines comprising Seagreen Project 1A represent 24% of the total 150 wind turbines consented for Seagreen.
- MS-LOT and NatureScot confirmed initial reservations about this allocation in an email dated 19 August 31. 2022 stating that neither agree with the Applicant's proposed approach to use 25% as a proportional value. This is on the basis Seagreen 1 and Project 1A do not align with offshore permissions granted which cover these projects: they are both split across separate marine licences and s36 consents for Seagreen Alpha and s36 for Seagreen Bravo (which both cover up to 75 wind turbines respectively). The Applicant was advised that information required to inform the CEA is presented in the Seagreen in the original EIA.
- 32. The Applicant has undertaken a quantified CEA of Seagreen 1A Project based on the footprint areas available in the Seagreen 1A Project Construction Method Statement¹ (Seagreen Wind Energy, 2020) and Appendix G4: Detailed worst case scenarios for Benthic and Intertidal Ecology² provided with the Environmental Statement (Volume III) for Seagreen 1A Project (Seagreen Wind Energy, 2012).
- 33. the chapters of the Offshore EIA Report.

3.3.2 CABLE AND SCOUR PROTECTION

34. and scour protection. Where protective material cannot be avoided, MS-LOT advised that a more targeted

Berwick Bank Wind Farm



During the bi-weekly meeting of 14 July 2022 between the Applicant, MS-LOT and NatureScot, the

The Applicant adapted its intended approach in view of post-scoping advice and this is well evidenced in

In the 2022 Scoping Opinion, MS-LOT highlighted the need for more detail to be included regarding cable

¹ construction method statement 4.pdf (marine.gov.scot)



method of placement is recommended. This advice was iterated in emailed advice received following Road Map Meeting 3. NatureScot further gueried the basis (evidence informing) the 15% cable protection value.

- 35. With respect to cable and scour protection, the Applicant has provided as much information as it is possible to do at this stage of development of the Proposed Development and details are provided as part of the PDE to inform the EIA. The Applicant will undertake further design work which will allow quantification of cable protection requirements in certain areas based on known seabed conditions (although contingency will still be required for unforeseen events which require cable protection to be in place). Final locations, quantities, types and installation methods will be submitted to MS-LOT for approval post consent.
- 36. The 15% cable protection assumption has taken recent project experience into account where a greater % of cable protection may be required compared to initial assessments. This has resulted in an increase from 10% in earlier iterations of the PDE. Therefore, a precautionary approach has been undertaken in respect to making sure adequate cable protection is assessed and the requirement for further cable protection installation above and beyond what is assessed in the Offshore EIA Report is minimised.

3.3.3 DRILLING FLUIDS/EFFLUENT AND DRILL CUTTINGS

- 37. In the 2022 Scoping Opinion, MS-LOT advised that the impact of drilling fluids/effluent and drill cuttings being dispersed into the water column/onto the seabed (construction phase) is not currently considered and will need to be addressed. Otherwise, the Applicant should confirm there will not be any such releases, or there are control methods in place to prevent release.
- It is the Applicant's position that use of drilling fluids that are on the PLONOR list (Poses Little or No Risk), 38. which is controlled and maintained by CEFAS (The Centre for Environment, Fisheries and Aquaculture Science). The Offshore EIA Report been updated to account for this additional information. The following designed in measures have further been added to the Offshore EIA Report to support the assessment in volume 2, chapter 8:-
 - approximately 10 m to 15 m before exit the mud pumps that circulate the bentonite drilling fluid are switched off, the drill head advances in a 'dry' state to exit point; and
 - utilise bentonite drilling fluid that is CEFAS and PLONOR rated.

3.3.4 INVASIVE NON-NATIVE SPECIES MONITORING

- 39. In the 2022 Scoping Opinion, Marine Scotland Science (MSS) advised that the introduction of non-native species may occur at any phase of the Proposed Development and requires consideration for all phases. As the wind farm has a 35 year lifespan, the operation and maintenance phase has arguably the longest time frame for non-native species to colonise the hard substrates. The need for strategic monitoring to understand the impact of hard structure colonisation was further raised in advice related to Road Map Meeting 2. MSS advise that this could be confirmed by routine monitoring of foundation structures, particularly in the splash zone.
- The Applicant confirms that this risk is being considered across all phases of the Proposed Development. 40. Notwithstanding a finding of no significant adverse impacts, the Applicant has made a commitment to engage with MSS, NatureScot and other relevant key stakeholders to identify and deliver proportionate measures for contributing to strategic monitoring to understand the impact of hard structure colonisation and change in community structure and local species diversity in the immediate vicinity of hard structures.

3.3.5 KEY ISSUES FROM ROAD MAP MEETINGS

41. The benthic and intertidal ecology topic group completed a Road Map Process, which comprised of four Road Map Meetings. Road Map Meeting 4 concerned the MPA Assessment for the Proposed Development

Berwick Bank Wind Farm

(see section 3.4). Therefore, only Road Map Meeting 3 is relevant to post-scoping discussions. The following emails exchanges occurred subsequent to Road Map Meeting 3:

- SNCB/RMM3/BEN/17.05.22;
- SSE/RMM3/BEN/25/.08.22; and
- SNCB/RMM4/BEN//16.09.22
- 42. The advice pertained mostly to the MPA Assessment (SSE, 2022b) (addressed in section 3.4) and physical processes (addressed in section 3.23.5). The 16 September advice [SNCB/RMM4/BEN//16.09.22] implies that no key issues for the benthic and internal ecology are outstanding at the conclusion of the Road Map Process. The Road Map Document (volume 3, appendix 8.1) documents the actions taken by the Applicant in response to post-scoping advice.

3.4. MARINE PROTECTED AREA ASSESSMENT

- 43. Since the 2022 Scoping Opinion, a number of key issues have been the subject of discussions regarding the MPA Assessment for the Firth of Forth Banks Complex ncMPA. These are audited in volume 3, appendix 8.1 and headline issues discussed include (but are not limited to) discussions over:-
 - quantification of impacts to the 'ocean quahog aggregations' feature;
 - terminology regarding impacts to habitats/protected features for "permanent/long term impacts;
 - the need for transparency in how the maximum design scenario has been calculated:
 - early consideration of Equivalent Environmental Benefit;
 - comments on presentation and scope; and
 - strategic benthic monitoring and future monitoring.
- 44. The basis of post-scoping discussions was a copy of the draft Marine Protected Area (MPA) Assessment that was shared with MS-LOT, NatureScot and the JNCC on 4 May 2022, followed by a dedicated MPA Road Map Meeting was thereby held (31 May 2022) to discuss feedback and various email exchanges.
- At the MPA Road Map Meeting on 26 May 2022, NatureScot and the JNCC stated on a without prejudice 45. basis, the current direction of travel of the MPA Assessment would mean that the Conservation Objectives of the MPA are unlikely to be hindered. On 01 September 2022, NatureScot advised by email that it and the JNCC were content with how comments will be addressed in the final MPA Assessment Report and the Offshore EIA Report. On 4 October 2022, Marine Scotland confirmed it has reviewed the minutes for the MPA Road Map Meeting and has no further comment to make in addition to those made by NatureScot regards the MPA Assessment.
- 46. The Applicant has further made a commitment to engaging in discussions with MSS and the SNCBs post consent to identify opportunities for contributing to proportionate and appropriate strategic monitoring of temporary habitat disturbance to sensitive features of the FFBC MPA features (e.g. ocean guahog). It is therefore considered that all comments raised after the publication of the 2022 Scoping Opinion have been addressed. Accordingly, there are no post-scoping communications or developments to include in the Audit Document.

3.5. FISH AND SHELLFISH ECOLOGY

3.5.1 EFFECTIVENESS OF SOFT-START PILIING

In the 2022 Scoping Opinion (see paragraph 5.8.16), MS-LOT advised the Applicant to consider SNCB 47. advice made in representation regarding the potential effectiveness of ramp-up and soft-start piling and further, the need to instead consider the timings for carrying out works





48. It is the Applicant position that soft starts are considered effective mitigation to minimise risk of injury. With respect to effectiveness of soft starts for fish species, in the paper provided by stakeholders (i.e. Harding et al., 2016) the experiments failed to produce physiological or behavioural responses in Atlantic salmon when subjected to noise similar to piling. However, the noise levels tested were estimated at <160 dB re 1 µPa Root Mean Square (RMS), far below the level at which injury or behavioural disturbance would be expected for Atlantic salmon and other fish species. At elevated noise levels in close proximity to piling, strong avoidance reactions would be observed and therefore soft starts are considered effective mitigation to minimise risk of injury. In any case, the underwater noise assessments for the Proposed Development indicate that neither seasonal restrictions nor sound abatement measures are necessary.

3.5.2 STRATEGIC MONITORING

49. On 17 May 2022 opportunities were discussed by the Applicant at Road Map Meeting 3 on the strategic monitoring of sandeels and deployment of listening stations for fish species (i.e. particularly diadromous fish, but also potentially marine species). The Applicant has committed to engaging in discussions with Marine Scotland and the SNCBs post consent to identify opportunities for contributing to proportionate and appropriate strategic monitoring of diadromous fish species. This may include research priorities identified by ScotMER steering group.

3.5.3 ISSUES FROM ROAD MAP MEETINGS

- 50. The fish and shellfish topic group topic group completed a Road Map Process, which comprised of three Road Map Meetings, three of which took place after the 2022 Scoping Opinion was published. Road Map Meeting Four concerned the Marine Protected Area Assessment for the Proposed Development.
- There are no post-scoping communications or developments to include in the Audit Document. 51.

3.6. MARINE MAMMALS

3.6.1 CONVERSION FACTORS

- 52. The most notable topic of post-scoping discussions has concerned the appropriate conversion factors to apply to the underwater noise modelling and related chapter assessments of effects. In the 2022 Scoping Opinion, MS-LOT advised the Applicant to model a range of conversion factors (1%, 4% and 10%) (para 5.9.10) and provide justification for the most appropriate conversion factor to take forward to full assessment. Numerous and detailed discussions have taken place subsequently involving the Applicant, MSS and NatureScot. These are audited in the chapter (volume 2, chapter 10), the noise modelling (volume 3, appendix 10.2) and the Marine Mammals Road Map Document (volume 2, appendix 10.3).
- 53. It is the Applicant's position that all requested conversion factors within requested range have been modelled (1%, 4% and 10%) with results provided in the Offshore EIA Report. The requested justification for the most appropriate conversion factor is provided. A late clarification of the Scoping Advice established that instantaneous Permanent Threshold Shift (PTS) impact ranges are calculated using the highest hammer energy for 1%, 4% and 10% constant conversion factors. The Applicant has based these ranges on 1% or 4% reducing conversion factor (which ever results in the most conservative outcome). This is not materially different from the Scoping Advice. As the conversion factors applied result in larger ranges, the Applicant remains confident that intentions of the Scoping Advice are satisfied.
- A clarification of the advice (16 September 2022) states that the request was for instantaneous PTS impact 54. ranges to be determined using the highest hammer energy for constant conversion factor 1%, 4% and 10%. On the basis of this clarification, the results for constant conversion factor (4% and 10%) for SPLpk

Berwick Bank Wind Farm

have been added to the EIA assessment alongside the other results. The most conservative of the outcomes has been used in the assessment.

3.6.2 UXO CLEARANCE

- In the 2022 Scoping Opinion, with regard to UXO clearance, the Scottish Ministers advise that the 55. assessment must include a worst case of high order detonation in terms of impact and mitigation, unless there is robust supporting evidence that can be presented to show the consistent performance of the preferred low order or deflagration method. The Applicant has complied with this aspect and has presented outcomes in volume 2, chapter 10.7.
- In an email dated 30 September 2022 [SNCB/RMM4/MM//30.09.22], NatureScot advised that scare 56. charges should not be employed for marine mammal mitigation on the basis these can introduce significant noise into the environment (Robinson et al., 2022), but there is a lack of evidence showing that they enhance protection for marine mammal purposes. NatureScot further advised that the use of low noise alternatives (to high order detonation) should make scare charges redundant. However, mitigation should be designed to protect in the event of a high order detonation. NatureScot stated that it does not recommend the complete removal of scare charges for depths that currently restrict the use of noise abatement methods, but that they are used at charge sizes suitable for fish mortality mitigation.
- 57. The Applicant continues to consider the use of scare charges as appropriate and precedented and the Applicant has not re-modelled at this point in the programme (or undertake an assessment of UXO clearance without use of scare charges). The Applicant acknowledges the feedback from stakeholders will look to further explore these points post-application or post-consent once further information becomes available as to the size of UXOs.

3.6.3 SEAGREEN PILING STRATEGY FOR CEA

- In an email dated 24 August 202, MS-LOT highlighted, in the context of CEA, the Seagreen Offshore Wind 58. Farm Piling Strategy which details the 36 wind turbines within the Seagreen Alpha and Bravo Offshore Wind Farms to be piled, rather than using suction bucket technology. On the basis these are the same 36 wind turbines subject to the current section 36 variation application that will be taken forward at a later construction date, MS-LOT advise that the different foundation technology is taken into consideration when undertaking the CEA.
- 59. The CEA reported in the Marine Mammal chapter of the Offshore EIA (volume 2, chapter 10) is based on the maximum design scenario (i.e. whichever result in the greater potential for cumulative effects between the original and optimised designs). For example, harbour porpoise, bottlenose dolphin and white-beaked dolphin assessments are based on the Seagreen Offshore Wind Farm Piling Strategy (as this approach predicted larger number of individuals potentially affected than the original Seagreen EIA (2012). However, for minke whale, harbour seal and grey seal the original EIA was applied.
- 60. The Applicant provides information for the maximum design scenario in each instance and for all relevant receptor groups.

3.6.4 INJURY RANGES

- In an email dated 30 September 2022 [SNCB/RMM4/MM//30.09.22] 22 MS-LOT advised that injury ranges 61. should be based on risk of instantaneous injury and use SPLpk as a precaution with the mitigation zones based on the worst outcome, which is SPLpk at max hammer.
- 62. The Applicant provides information for the maximum design scenario in each instance and for all relevant receptor groups.





3.7. OFFSHORE AND INTERTIDAL ECOLOGY

3.7.1 COLLISION RISK MODELLING

- 63. The Applicant has for the most part adopted the advice on ornithological assessment parameters advised in the 2022 Scoping Opinion for the purposes of conducting an assessment of collision risk for ornithology for the EIA. Nevertheless, there are some parameters advised in the Scoping Opinion which the Applicant considers to be over-precautionary and a departure from standard advice/practice. With regard to collision risk modelling, the 2022 Scoping Opinion requires the use of monthly maximum bird densities as opposed to mean monthly bird densities, which was the Applicant's position, based upon the approach taken in all recent UK offshore wind farm assessments. The Applicant queried the Scoping Opinion advice, following which MS-LOT confirmed their Scoping Opinion advice must be followed.
- The Applicant considers this element of the 2022 Scoping Opinion to be over-precautionary and a 64. departure from standard advice/practice. As such, the Applicant determined to undertake a 'dual assessment' approach of the collision risk posed by the proposed Development:
 - The 'Scoping Approach'; and
 - The 'Developer Approach'.
- 65. With respect to estimating collision risk, the two approaches differ only in their use of input monthly density estimates of flying birds of the assessed species within the proposed Development.
- 66. The Scoping Approach is based on the Scoping Consultation responses from NatureScot and Marine Scotland Science which advised the use of monthly maximum density of relevant seabird species within the proposed Development Array area in the CRMs.
- 67. However, guidance on the use of the CRM suggests that model predictions should be based upon the mean monthly densities of flying birds estimated within the Proposed Development array area and therefore the Developer Approach also presents these results. Both assessments are presented in volume 3, appendix 11.3. In addition, further details of the Developer Approach and Scoping Approach are also presented in volume 3, appendix 11.3.

3.7.2 DISPLACEMENT/BARRIER EFFECTS

- 68. With regard to the assessment of displacement and barrier effects on offshore ornithology for the EIA, there are again some parameters advised in the 2022 Scoping Opinion which the Applicant considers to be over-precautionary and a departure from standard advice/practice. As such, the Applicant has presented an assessment of likely significant effects based on:
 - The Scoping Opinion Approach (noting that in some cases this is further split out to reflect advice given); and
 - The Developer Approach.
- 69. Volume 3, appendix 11.4, annex G presents the evidence base for the Developer Approach for the displacement assessment, including a review of scientific literature, to identify and justify any instances where this diverges from the Scoping Opinion Approach.

3.7.3 APPORTIONING METHODS

70. Representations to the Scoping Opinion from Natural England and Nature Scot respectively give conflicting advice for the method of apportioning guillemot to the Flamborough and Filey Coast SPA. Natural England advise that common guillemot from the Flamborough and Filey Coast SPA should be screened in for

Berwick Bank Wind Farm

potential impacts during the non-breeding season. Their advice states that "Whilst Furness (2015) indicates that non-breeding individuals are likely to stay relatively close to their breeding colony in the nonbreeding season, there is limited empirical evidence currently exists to support this, to quantify the extent over which this operates, and whether it applies to the same extent for all colonies." Natural England therefore request that the traditional approach of apportioning birds to the relevant SPA using the Biologically Defined Minimum Population Scale (BDMPS) populations as prescribed by Furness (2015) to assess the potential impacts on Flamborough and Filey Coast SPA guillemot in the non-breeding season.

- This advice is counter to that provided by NatureScot and Marine Scotland Science (MSS) in their 71. consultation responses of 7 and 16 December 2021, in which they advise that the breeding season meanmaximum (+1 Standard Deviation (SD)) foraging range should be used for apportioning non-breeding common guillemot to relevant SPAs. MSS suggested in their response that further discussion is required around this point.
- 72. Applicant sought clarity from MS-LOT and their advisors on the differing advice received on apportioning impacts on non-breeding common guillemot.
- 73. Further written advice from NatureScot was issued via email on 18 May 2022. Within this, NatureScot identify that further empirical evidence of non-breeding guillemot and razorbill distributions has been published since the Scoping Opinion was issued (Buckingham et al. 2022) which "indicate that while guillemot from the Isle of May disperse in the moult period immediately following the breeding season to Northern Scotland, during the winter period birds use core areas located in the vicinity of their breeding colony. Razorbill are distributed around the coast of Scotland in the moult period and in central North Sea during the mid-winter period. This is also borne out by observations at breeding colonies over the winter period when guillemot more frequently return to the colony from October onwards, the length and frequency of appearance at the colonies increasing as the winter progresses. Razorbill being largely absent from colonies until much closer to the breeding period. This implies that guillemot are present in areas not so far from their breeding colony through most of the non-breeding season." NatureScot go on to advise that while the approach based on the BDMPS as per Furness et al. (2015) is suitable for razorbill, an approach based on a smaller scale 'regional' population is more suitable for guillemot. NatureScot state that "given the evidence provided by Buckingham et al. (2022), we remain of the view, that assessment of nonbreeding season impacts on guillemot should be undertaken using a regional population based on meanmaximum foraging range plus 1SD and do not support the inclusion of Flamborough and Filey Coast SPA based on the distance from the Berwick Bank development and in the absence of any tracking evidence."
- 74. In light of this evidence, The Applicant proposed to follow recent advice from NatureScot and sought agreement that Natural England are content with this approach. Natural England replied to say if Berwick Bank OWF intends to follow the NatureScot advice wholesale, it would nevertheless be useful if the Environmental Statement could include the impact values for non-breeding Guillemot from FFC SPA based on the BDMPS apportioning approach. Alternatively, this could be provided separately to Natural England. This would avoid the need for offshore wind farm developers in the English North Sea and/or Natural England to carry out separate apportioning work for inclusion in relevant in-combination assessments. It was subsequently agreed with stakeholders that this assessment would be provided separately.

3.7.4 DISPLACEMENT MATRIX APPROACHES

75. The Applicant's proposed approach was to use the Displacement Matrix using the SNCB 2017 interim displacement advice note and if possible, to use SeabORD for guillemot, razorbill, puffin and kittiwake in the chick-rearing period where tracking data are available. During Ornithology Road Map Meeting 4 the Applicant highlighted issues in terms of how the SeabORD model is parameterised in relation to the prey base. Currently the model is only parameterised for four species from only a few colonies, so extending it to run it in its full form for these four species across a wider range of SPA colonies would need a lot of



Following receipt of the 2022 Scoping Opinion, a meeting was held on the 10 May 2022, in which the



input from the model developers, at UKCEH. However, it is also the case that the full model is currently under review, as part of its incorporation into the Cumulative Effects Framework (CEF) project. It was questioned whether a simplified version of SeabORD could be used, which was investigated. The Applicant was granted access to the underlying SeabORD R-code in June 2022, with the aim of undertaking sensitivity analysis of the model (volume 3, appendix 11.8, annex a).

- The position with regards the use of SeabORD was detailed in the 2022 Scoping Opinion. The Scottish 76. Ministers have considered the scale of the Proposed Development and the sensitivity of the outer Forth for seabird species and do not consider the matrix approach to be sufficient for most of the affected species. The Scottish Ministers advise that, taking into account current knowledge and methods of assessment, the use of SeabORD is likely to be required to enable them to reach a reasoned conclusion on the significant effects of the Proposed Development on the environment.
- Acknowledging the practical difficulties associated with running SeabORD, it was agreed that the 77. 'simplified' SeabORD model would be used and provided for context, with distance decay method used and assuming a uniform prey distribution. SeabORD analysis was provided for context noting that SSE has significant concerns about the outputs and suggesting that given the uncertainty of the outputs, it is given limited, if any, weight. The SeabORD outputs are presented in Annex D of the Displacement Technical Report, volume 3, appendix 11.4 and the Applicant's review of seabORD including a sensitivity analysis, presented in volume 3, appendix 11.4, annex H.

3.7.5 USE OF MRSEA-DERIVED DENSITY ESTIMATES

- 78. The Applicant has been engaging with the MRSea model but overall have found it very difficult to operate for this scale of project. In some instances, it has taken 5-7 days to run a model scenario, with issues over the model crashing or errors which aren't evident until the end of the run. Issues have been noted with MRSea overestimating densities when modelling gaps in survey data (density hot spots noted where the gaps in surveys are). Due to ongoing issues with the model, The Applicant has used design-based density figures in the Collision Risk Modelling (CRM) and displacement assessment, with MRSea outputs presented for context in volume 3, appendix 11.1, annex L.
- 79. Significant issues still remain with the use of MRSea. During Ornithology Road Map Meeting 3 consultees acknowledged the attempts to resolve the issue and the programme difficulties this has created. In order to inform further advice and agreement on the use of densities derived from design-based methods, The Applicant provided written reports on MRSea issues to further highlight issues, including a comparison with design-based abundance results, and supporting the use of design based estimates. Where it has been possible to generate MRSea, outputs, they are presented within Annex L to the Baseline Technical Appendix (volume 3, appendix 11.1) but MRSea abundance estimates are not used in the assessment for the reasons outlined in the Baseline Technical Appendix (volume 3, appendix 11.1).

3.7.6 MIGRATORY WATERBIRDS COLLISION REPORT

- 80. During LSE Screening, 40 species of migratory waterbirds associated with 17 designated sites were screened in for further analysis regarding potential collision risk and/or barrier effects, as detailed in Berwick Bank Offshore Wind Farm Habitats Regulation Appraisal (HRA) Stage 1 Screening Report (EOR0766 Rev 04).
- 81. Guidance was obtained from NatureScot to consider the data, outcomes and approaches detailed within the "Strategic assessment of collision risk of Scottish offshore wind farms to migrating birds" (WWT Consulting, 2014), with priority given to consider a qualitative approach to assessment due to known data and knowledge constraints for several of the species screened in. The quantitative results presented within the MS Strategic Assessment are no longer accurate as a result of design changes for the offshore wind

Berwick Bank Wind Farm

farms considered within that report during their development and consenting processes. These changes are incorporated within the approach outlined in the RIAA to ensure that the outcomes presented are more representative of the current scale of offshore wind farms present along the Scottish east coast.

- 82. It was noted in the guidance from NatureScot that some species (nine) that are gualifying features of the designated sites screened in were not included within the MS Strategic Assessment. Additional methodological work for these species was, therefore, developed to allow similar qualitative summaries to be included within the RIAA for the nine species noted.
- 83. Outcomes for designated species are presented in the RIAA, Part 3 Report for each site identified within the HRA Screening Report, with summaries on potential collision risk and extent of potential barrier effects.

3.7.7 GANNET TRACKING DATA

- 84. Within the Scoping Opinion (5.10.5) the Scottish Ministers highlighted the NatureScot representation and MSS advice regarding gannet displacement and barrier effects and suggested further discussion and agreement as part of the Developer's Road Map process. During Road Map 6 the Applicant proposed to use available GPS tracking data to provide contextual data to help understand the level of potential barrier and displacement effects that gannet from the Forth Islands SPA may experience, with regard to age & sex of birds and taking account other Forth & Tay developments.
- 85. It was highlighted that the Applicant initially only received permission to use 2010-2012 data, so suggested summarising information from more recent published papers. Since then, further datasets from 2015-2019 were made available.
- 86. Data were collated from GPS tags deployed on adult gannets annually during the breeding season on the Bass Rock from 2010 to 2019. These data were compiled through BirdLife International's seabirdtracking.org database and received from Keith Hamer and Jude Lane from Leeds University. More recent data were not included as they were provided in their raw form and not processed to a suitable point for inclusion in the current analysis. The results are presented in volume 3, appendix 11.4, annex E.

3.8. COMMERCIAL FISHERIES

3.8.1 NEW GUIDANCE FOR ASSESSING FISHERIES DISPLACEMENT

- 87. In the 2022 Scoping Opinion, MS-LOT refer to good practice guidance for assessing fisheries displacement that should be considered, once published (para 5.11,1). On 15 July 2022, MS-LOT advised the Applicant that the 'Good Practice Guidance for Assessing Fisheries Displacement' had recently been published and provided a hyperlink to the guidance available on the Scottish Government website.
- 88. The Applicant has reviewed the published guidance with the intention to include aspects as necessary in the Offshore EIA Commercial Fisheries chapter. The Applicant found that the guidance does not vary substantially from the draft guidance available prior and further, contains no explicit directions/approach or methods that would change the current approach to fisheries displacement assessments within EIA. It is therefore the Applicant's position that a compliant fisheries displacement assessment has been carried out.

3.8.2 ASSESSMENT OF IMPACTS ON SALE OF FISH AND SUPPLY LINES

89. In the 2022 Scoping Opinion, MS-LOT advises that impacts on sales of fish and the supply chain should be assessed as part of the socio-economic/commercial fisheries assessment. Further, that there may be a requirement for further discussion between MS-LOT and Marine Scotland Science as to whether this





assessment (or other aspects relating to commercial fisheries) should sit within the Offshore EIA Report or in a separate document/appendix."

- 90. Since the publication of the 2022 Scoping Opinion, the Applicant has engaged in multiple discussions with Marine Scotland and MAU to clarify the nature of this request. On 4 March 2022, the Applicant sought clarification via email from MS-LOT. Noting the lack of available precedent and guidance on this topic and the unique precedent this request has set for EIA, the Applicant sought to establish the level of detail anticipated. Clarifications were provided on 4 April 2022, where the requirement for the assessment was reiterated and detailed advice from Marine Scotland was received on 25 February 2022. The Applicant was advised that MAU are developing a socio-economic toolkit, which could help (these have not been made available). Further, it is noted that, MAU did "not wish to specify the methodology or data to be used as it is for the developer to consider what is needed." At the biweekly MS/NS call on 25 February 2022 MS-LOT mentioned that the potential impact was picked up by MAU and an assessment is required, as MS-LOT expect the 2022 Scoping Opinion to be followed.
- 91 Through its various communications on this issue, the requirement for further discussion is considered by the Applicant to be satisfied. The Applicant was not able to fully comply with this request but has ascertained no likely impact on supply chain. The justification for this approach is two-fold:
 - in the absence of an established assessment framework, or any precedent or guidance any such assessment would be complex and unreliable, such that it would be meaningless; and
 - as the evidence indicates commercial fisheries will not likely be significantly affected, this negates the need for an assessment of the associated supply lines and socioeconomic effects.
- 92. Given the social, economic and environmental variations that could influence the outcomes, any attempt to at an integrated assessment of supply chains is expected to be complex and unreliable. The information required for the analysis (e.g. the number and diversity of relevant fisheries, their supply chains and how resilience to unknown influences) would, if it existed, be widely dispersed and uneven. It is the Applicant's position that any such assessment would require the development of a complex assessment framework to process the data, and account for unpredictable factors such as human responses to change, environmental variations and external supply chain disruptions. In the absence of such a framework, any assessment would be so unreliable as to be meaningless.
- 93. Further, MAU has clarified (4 April 2022) that "if it is likely that commercial fisheries will be affected by the development then the socio-economic impacts should be included in the assessment". The commercial fisheries assessment (volume 2, chapter 12) considers impacts on commercial fisheries from reduced access to, or enhanced competition within fishing grounds. The commercial fisheries assessment did not identify any likely significant effects on fishers related to a loss of access to fishing grounds. It is therefore the Applicant's position that commercial fisheries will not likely be affected. With no significant impacts at source, there would be no significant manifestation of effects later in the supply chain.

3.9. SHIPPING AND NAVIGATION

94. Following the boundary revisions announced in June 2022, the Applicant hosted a second hazard (consultation) workshop. Other than by the UK Chambers of Shipping (addressed directly) no concerns were raised. Therefore, the boundary revision is considered to have mitigated concerns raised previously. Accordingly, there are no post-scoping communications or developments to include in the Audit Document.

3.10. AVIATION, MILITARY AND COMMUNICATIONS

3.10.1 CIVIL AIRPORT PATTERNS AND PROCEDURES

- 95. In 2022 Scoping Opinion, MS-LOT did not agree with the Applicant's proposal to scope out potential impacts on civil airport patterns and procedures, due to the presence of obstacles (para 5.13.3) (hereafter 'civil airport patterns'). This took into account the November 2021 Scoping representation from the relevant authority - National Air Traffic Service (NATS). The Applicant was advised to assess the impacts in the Offshore EIA Report and further, seek to engage with the Civil Aviation Authority (CAA) prior to the submission of the Offshore EIA Report.
- 96. The nearest civil airports are Dundee, Aberdeen and Edinburgh, which are approximately 36 nm, 46 nm and 57 nm respectively from the nearest aspect of the Proposed Development boundary. In view of these distances, it has remained the Applicant's position that it is extremely unlikely that any impact on civil airport patterns and procedures could occur. In an email exchange with the Applicant on 9 May 2022, NATS confirmed that it had not raised concerns about civil airport patterns in its scoping submission (and they had none) [SSE/NATS/AVI/09.05.22].
- 97. From May through July 2022, the Applicant exchanged emails with MS-LOT to ascertain if MS-LOT had chosen to diverge from NATs position (and continue to advise the Applicant to scope in civil airport patterns. On 7 July 2022, MS-LOT provided an interim recommendation that the Applicant justify within the Offshore EIA Report, the reasons (based on the available evidence) to scope out these impacts [SSE/MS-LOT/AVI/07.07.22]. This was followed by MS-LOT's formal advice on 22 August 2022, whereby MS-LOT confirmed that the position adopted in the Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) (and also the 2020 Berwick Bank Scoping Opinion (MS-LOT, 2021)) remains unchanged [MS-LOT/AVI/22.08.22]. The lack of representation from the CAA and lack of sufficient evidence provided the basis for this position.
- 98. MS-LOT further confirmed that if the Applicant were to take a different approach from the position adopted in the Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022), then the reasoning behind any discrepancy must be clearly evidenced within the Offshore EIA Report along with relevant correspondence supporting this position from NATS and the CAA.
- 99. In September 2022, the Applicant emailed the CAA to request its comment on civil airport patterns. Concurrently, the Applicant commissioned an independent assessment of the potential for impacts on Instrument Flight Procedures (IFPs) at Aberdeen, Edinburgh and Dundee Airports. An assessment was undertaken and reported by Osprey Consulting Services Limited (Osprey), a CAA approved agent. This report (titled 'High-level Safeguarding of Instrument Flight Procedures') (the Osprey Report) concludes that the Proposed Development is not anticipated to have any impact on the published IFPs at Aberdeen and Edinburgh and Dundee Airports.
- 100. The Osprey Report was provided to the CAA for review. In October 2022, the CAA responded in writing to agree that civil airport patterns should be scoped out.

3.11. SEASCAPE, LANDSCAPE, VISUAL RESOURCES

101. All relevant points regarding SVLIA assessment are addressed in Table 2.1.





3.12. CULTURAL HERITAGE

3.12.1 CATEGORY B AND C LISTED BUILDINGS

- 102. In 2022 Scoping Opinion, MS-LOT advised (with reference to the East Lothian Council's (ELC) scoping representation of 24 January 2021 that it may not be possible to scope out the majority of Category B and C listings (which are considered of national importance as National Designations) - some listings may need to be assessed and the Applicant should identify these [para 5.16.3].
- 103. On April 25, 2022, the Applicant emailed the ELC and set out its justification to take an alternative approach to the position adopted by MS-LOT at scoping. The Applicant's position is that Category B and C listed building should be scoped out of the EIA as per the approach taken for the consented wind farms in the area and other projects in Scottish waters. The Applicant's approach is in line with current guidance (e.g. Planning Advice Note 1/2013: Environmental Impact Assessment, which espouses a proportionate approach that focusses on significant environmental effects). The guidance provided by Historical Environment Scotland (HES) in The EIA Handbook and elsewhere Handbook (HES & Scottish Natural Heritage 2018, 63), has Category B and C Listed Buildings as of regional and local importance, respectively.
- 104. The Applicant further cited the distance of the Proposed Development array area from the East Lothian coastline (for which Met Office data indicates visibility frequency of 28.5%), the low to medium sensitivity of the receptors and that a requirement to screen 7,615 Category B and C Listed Buildings in the Cultural Heritage study area would be contrary to the promoted aim of a proportionate EIA. At the time of Application in October 2022, no response has been received from the ELC.
- 105. On 25 May 2022, the Applicant sent further email to the ELC, restating the case made previously. At the time of finalising this document in November 2022, no response has been received.
- 106. The Applicant has chosen to take an alternative approach to the position MS-LOT has adopted in the Berwick Bank Wind Farm Scoping Opinion (MS-LOT, 2022) and has scoped out Category B and C listings from the Offshore EIA Report. The Applicant has provided the reasoning behind this to the ELC directly and within the Offshore EIA Report.

3.13. INFRASTRUCTURE AND OTHER USERS

107. All relevant points regarding Infrastructure and other users assessment are addressed in Table 2.1.

3.14. OFFSHORE SOCIO-ECONOMICS AND TOURISM

3.14.1 ADDITIONAL IMPACTS AND COMMUNITY ENGAGEMENT

- 108. In the 2022 Scoping Opinion, MS-LOT advised that the current stance (relying on desktop study and not undertaking site specific surveys) is not sufficient and primary data must be collected, including engagement with communities and local industries.
- 109. The Applicant therefore undertook a further round of consultation involving multiple community councils with potential interest in the various local study areas we are considering. The consultation involved, 5x1 hour virtual workshops related to key locations/sectors (Invergordon, Aberdeen/Montrose, Firth of Forth Rosvth. Burntisland, Methil, Leith, Dundee, A week of workshops that ran from 10 - 16 March 2022 and a 'wash up' workshop on 18 March for those unable attend invited session.

Berwick Bank Wind Farm

3.14.2 ADDITIONAL DATA SETS

- 110. In 2022 Scoping Opinion, MS-LOT also advised that the Applicant to undertake further work to identify (then assess) socio-economic impacts with reference to the MAU representations which call for:
 - a wider range of potential impacts than described in the Scoping Report,
 - delivered using a wider range of socio-economic methodologies;
 - local and regional impacts to be acknowledged as well as different 'epicentres of impact':
 - review of interactions with other topic groups (e.g. impacts on visual amenity, commercial fisheries, shipping and navigation, and cultural heritage);
 - consideration of displacement, substitution impact and additionality;
 - greater clarity required on methods to assess impacts on wider range of socio economic receptors
 - consideration of additional datasets and reports; and
 - use of both qualitative and quantitative social research methodologies.
- 111. The MAU Representations broadly align themselves with guidance on Socio-Economic Impact Assessments for Offshore Renewable Developments to be published by Marine Scotland. As of November 2022, the Guidance from Marine Scotland was still awaiting Ministerial sign-off and publication and there was no timescale known for its release. In the course of its communications to clarify the primary data collection requirements, the Applicant understands the request to be a novel one; the Applicant is being asked to cover a broader range of issues and a wider range of socio-economic methodologies than previous socio-economic assessments and is one of the first developers to be asked to do so.
- 112. guidance (or socio-economic toolkits mentioned not been made available). Despite various communications, the Applicant has not managed clarify the primary data collection requirements, or if its proposed strategy will satisfy the scope of the socio-economics assessment that consultees have requested that is well beyond what has been done in prior examples.
 - 25 February 2022, Applicant seeks clarification on the primary data collection requirements and consultation aspects mentioned in the 2022 Scoping Opinion;
 - activities and requests confirmation as to whether this was sufficient; and
 - 04 April 2022, the MAU provided written advice in response to the queries raised and referred back to their detailed responses provided at scoping and the new guidance to be published shortly.
- 113. The range of impacts considered within the socio-economics chapter is aligned to established practice. Notwithstanding, the Applicant has responded to the Scoping Advice, noting in the absence of specific methodologies, the desire to get coverage of community voices, and potentially tourism related consultees through stakeholder engagement with communities and industries, to inform the baseline analysis. The approach and methodology for the socioeconomics chapter has been refined and enhanced based on the scoping responses to ensure community engagement has been included as part of approach to socioeconomics. The datasets/reports specifically referred to by MAU have been considered to inform the socioeconomic assessment of effects. The Applicant has supplemented the desk review with primary data collection through stakeholder consultation. Additional pre-planning application public consultation events were arranged to engage community members. A brief summary of stakeholder engagement activities is set out below:
 - Invitation to a range of stakeholders to participate in one-to-one consultation discussions with chapter authors:
 - Scotland and sub-regional economic development organisations sector leads:
 - other colleagues) in the areas that have been identified as potential epicentres of impact;



Whilst there is clear focus on evolving and developing socio-economic impact assessments, the new

04 March 2022 The Applicant submits 'clarification questions' and a summary of stakeholder engagement

Local authorities - economic development, tourism and housing officers (with open invite to engage



- Community councils in the areas that have been identified as potential epicentres of impact;
- Tourism and recreation representative organisations (e.g. RYA Scotland); and
- A two week consultation window was provided with respondents able to select a time convenient to them/their organisation.
- A further consultation period is being opened focused on community councils as a result of low take up of previous invitation. Consultation discussions covered a range of topics relevant to the consultee, including:
 - Offshore renewables sector activity and capacity: Local strengths and weaknesses:
 - Local labour market and supply chain capacity to absorb impact and initiatives to support offshore renewables sector development;
 - Socio-economic and tourism effects of existing/previous offshore energy schemes including unintended/unexpected consequences;
 - Potential impacts and capacity on housing, accommodation, local services and community cohesion; and
 - Potential impacts on tourism and recreation activity and its associated economic value.

3.14.3 SEPARATION OF OFFSHORE AND ONSHORE COMPONENTS

- In 2022 Scoping Opinion, MS-LOT advise that the socio-economic impacts from offshore and onshore 114. activities and structures must be considered together to ensure links and interactions can be identified (para 5.18.3). This accords with advice that MAU provided which also advises that the onshore EIA should be submitted alongside the offshore EIA.
- 115. The Applicant has considered the socio-economic aspects of the Project (both offshore and onshore aspects) in two separate chapters of the Offshore and Onshore EIA Reports, respectively. These chapters have been submitted concurrently within the offshore and onshore EIAs. As there draw on a single technical report which sets out the combined, and component socio-economic impacts and because the CEA (Tier 1) also considers both combined onshore and offshore socio-economic effects it is the Applicant's position that it has compiled with scoping and post-scoping advice.

3.15. WATER QUALITY

3.15.1 WATER QUALITY CHAPTER AND WFD ASSESSMENT

- 116. In the 2022 Scoping Opinion, MS-LOT described the omission of a water quality chapter (or any identified requirement for water quality) from the Berwick Bank Wind Farm Offshore Scoping Report (SSER, 2021a) as "a significant omission" (section 3.5). The Applicant was advised to consider water quality within the Offshore EIA Report and provide information for any Water Framework Directive (WFD) considerations, highlighting WFD guidance from the UK (UK Clearing the Waters), although not specifying that this guidance must be followed (or a specific WFD assessment undertaken)
- 117. At a bi-weekly meeting on 25 Feb 2022, the Applicant sought clarification from MS-LOT on the requirement and whether this was for a formal WFD assessment, and as to the nature of the EIA water quality assessment. On 31 March 2022, MS-LOT confirmed that either a bespoke chapter, or sign-posted amalgamation of sections from other chapters would be acceptable. Further, that MS-LOT will consider WFD when reviewing the submitted information which should address Scottish Waterbodies for cable and associated works up to 3nm and beyond.

118. The Applicant has selected to provide a bespoke water quality chapter within the Offshore EIA Report (volume 2, chapter 20) and WFD report for Scottish Waterbodies (volume 3, appendix 19) as part of the Application which meets the specified scope.

3.16. INTER-RELATED EFFECTS

- 119. In the 2022 Scoping Opinion, MS-LOT advises the Application that an 'ecosystems approach' is required that describes changes in prey species and whole ecosystem effects are identified resulting from influences such as changes in hydrodynamics and sediment movement impact on the sediment and benthic communities (including from the clearance of potential UXOs) and disturbances in the intertidal and nearshore and INNS. MS-LOT advise further discussion and agreement on an ecosystem approach is required.
- 120. Options for assessing ecosystem-level impacts were discussed during Ornithology Road Map Meeting 5. It was agreed with stakeholders at this meeting, that established approaches to ecosystem assessment are currently lacking and further, that quantitative modelling was not appropriate to address these questions. Rather a literature review, focussing on seabirds, their prey and climate change effects would be provided. The Applicant proposed the inclusion of an 'Interrelated Effects' chapter in the Offshore EIA Report, to be supplemented with a literature review focussing on seabirds, their prey species. These documents are provided as volume 2, chapter 20 and volume 3, appendix 20.
- 121. The Ecosystem Approach assessment is presented in volume 2, chapter 20 and aims to provide a holistic overview of ecosystem level impacts drawing from a range of topics. Key prey species (and potential impacts across key trophic levels) have been assessed throughout these documents, which have been structured to answer each of these questions raised by NatureScot during Ornithology Road Map Meeting 5. This includes positive or negative effects on prey species, including changes in prey distribution.

3.17. MAJOR ACCIDENTS AND DISASTERS

- MS-LOT states that the Offshore EIA Report must include a description and assessment of the likely 122. significant effects deriving from the vulnerability of the Proposed Development to major accidents and disasters.
- 123. The Applicant has selected to provide a bespoke major accidents and disaster chapter within the Offshore EIA Report (volume 2, chapter 21) as part of the Application which meets the specified scope.

3.18. CLIMATE EFFECTS

124. In the 2022 Scoping Opinion, MS-LOT advise the MSS December (2021) advice regarding to the evaluation of the loss of carbon sequestrated into the sediment within the footprint of the Proposed Development must be fully addressed in the Offshore EIA Report. As described in Table 2.1, an evaluation of the loss of carbon sequestrated into the sediment within the footprint of the Proposed Development has been undertaken and is included in the Effects on Climate Assessment (see volume 3, appendix 21).

3.19. MARINE ARCHAEOLOGY

The Marine Archaeology Technical Report (MATR) and Written Scheme of Investigation (WSI), which 125. includes a protocol of Archaeological Discoveries (PAD). were shared with Scottish Borders Council (SBC), Historic Environment Scotland (HES) and East Lothian Council Archaeology Service (ELC).in November 2021. In the 2022 Scoping Opinion (see para 5.14.2), MS-LOT reported that it is content with regard to the study area and baseline information. This was supported by the representations from Fife Council, HES





and SBC. With regard to the study area baseline information, method statements and procedures referred to MS-LOT agreed, with the support of Fife Council, HES and the SBC that Marine Archaeology could be scoped out of the EIA.

- 126. Subsequently, the Berwick Bank Wind Farm boundary was revised and the Proposed Development array area was reduced by approximately 20 percent. Accordingly, the MATR and WSI have been updated to account for the location of anomalies and known archaeological assets relative to a revised marine archaeology study area that corresponds with the new Proposed Development boundaries. The updated WSI is available in the Berwick Bank Wind Farm Offshore EIA Report (at volume 4, appendix 22).
- 127. The updated MATR is provided as an 'accompanying document' to the Application to ensure that the archaeological baseline that corresponds to the WSI is available to consultees. The updated MATR and WSI and PAD do not report any updates to marine archaeology baseline for the revised marine archaeology study area that might warrant changes to the general methodology and procedures in the WSI and the fundamental conclusions are unchanged. The Applicant's responses to feedback received during consultation are reported in the updated reports. The updates accord with advice the advice provided which includes the need for clear reference within the Offshore EIA Report as to where the information on the onshore works can be found, updates to the Responsibilities and Communications section, edits to the protocol for the further recovery and recording of any archaeological information and making these available to the archaeological record and recommendations for multibeam scanning and making survey.
- 128. All comments raised after the publication of the 2022 Scoping Opinion have been actioned in the marine archaeology Report and WSI and PAD. Accordingly, there are no post-scoping communications or developments to include in the Audit Document.





3.20. REFERENCES

Seagreen Wind Energy Ltd (2020) Seagreen 1A Project Construction Method Statement. Available here: <u>construction_method_statement_4.pdf (marine.gov.scot)</u> Accessed on: 23 September 2022

Seagreen Wind Energy Ltd, (2019). Seagreen Alpha and Bravo Offshore Wind Farms Environmental Impact Assessment Report. Available here: Optimised Application 2018 Documents | SeagreenWindEnergy. Accessed on: 23 September 2022

Seagreen Wind Energy (2012). *Appendix G4: Detailed Worst Case Scenarios for Benthic and Intertidal Ecology*. Within Environmental Statement (Volume III) for Seagreen 1A Project (Seagreen Wind Energy, 2012). Available at: <u>marine.gov.scot/sites/default/files/appendix_g4.pdf</u>. Accessed on: 23 December 2022

SSE Renewables (SSER) (2021a) *Berwick Bank Wind Farm Offshore Scoping Report*. Available at: <u>BERWICK BANK</u> <u>WIND FARM Offshore Scoping Report - Introduction (berwickbank-eia.com)</u>. Accessed on: 23 September 2022

SSE Renewables (SSER) (2022b). Marine Protected Area Assessment Report.

SSE Renewables (SSER) (2022d) Pre-Application Consultation (PAC) Report.

SSE Renewables (SSER) (2022e). Cambois connection Scoping Report.

Marine Scotland Licensing Operations Team (MS-LOT) (2022) *Scoping Opinion for Berwick Bank Offshore Wind Farm 2022*. Available here: <u>scoping opinion 8.pdf (marine.gov.scot)</u>. Accessed on: 23 September 2022





Table 3.1: **Relevant Audit Document and Supporting References**

Торіс	Description	Audit Document Reference
Bi-weekly meeting	Meeting note for bi-weekly meeting of 25 Feb 2022 Bi-weekly Meeting (Applicant/MS-LOT/NatureScot - Various topics	BWMEETING/25.02.22
Bi-weekly meeting	Meeting note for bi-weekly meeting of 28 July 2022 Bi-weekly Meeting (Applicant/MS-LOT/NatureScot - Various topics	BWMEETING/28.07.22
Bi-weekly meeting	Meeting note for bi-weekly meeting of 11 Aug 2022 Bi-weekly Meeting (Applicant/MS-LOT/NatureScot) - Various topics	BWMEETING/11.08.22
Bi-weekly meeting	Meeting note for bi-weekly meeting of 12 April 2022 Bi-weekly Meeting (Applicant/MS-LOT/NatureScot - Various topics	BWMEETING/12.04.22
Bi-weekly meeting	Meeting note for bi-weekly meeting of 05 May April 2022 Bi-weekly Meeting (Applicant/MS-LOT/NatureScot - Various topics	BWMEETING/05.05.22
Cambois connection	4 April 2022. Letter. To: MS-LOT. From: The Applicant. Re: Additional cable route	SSE/LETTER/04.04.22
Cambois connection	12 June 2022. Letter. From: MS-LOT. To: The Applicant. Additional cable route	MS-LOT/LETTER/12.06.22
Cultural Heritage	25 March 2022. Email. To: East Lothian Council. From: The Applicant. Category B and C Listed Buildings	SSE/ELC/25.03.22
Cultural Heritage	29 April 2022. Email. To: East Lothian Council. From: the Applicant.	SSE/ELC/29.04.22
Digital EIA	25 May 2022. Email. From NatureScot. To: The Applicant Consultation Response	NS/25.05.22
Digital EIA	31 May 2022. Email. From NatureScot. To: The Applicant - consultation	NS/31.05.22
CEA/Seagreen	24 August 2022. Email From MS-LOT. To: The Applicant - agreement	MSLOT/CEA/24.08.22
MPA Assessment	31 May 2022 MPA Road Map Meeting 4 and associated minutes	MEETING/RMM4/MPA/31.05.22
MPA Assessment	04 May 2022. Email. From: The Applicant. To MS-LOT, NS, MSS, JNCC share draft MPA Assessment Report and key guestions	SSE/RMM4/MPA/04.05.22
MPA Assessment	17 May 2022. From: NatureScot/JNCC. To: The Applicant. Regarding draft MPA Assessment Initial	SNCB/RMM4/MPA/17.05.22
MPA Assessment	26 May 2022. From: NatureScot/JNCC. To: The Applicant. Regarding draft MPA Assessment Initial answers to Applicant's directed questions	SNCB//RMM4/MPA 26.05.22
MPA Assessment	30 June 2022. Email. From: NatureScot. To: The Applicant: Provision of EMF studies	SNCB/RMM4/MPA/30.06.22
MPA Assessment	26 August 2022. Email. From: The Applicant To: NatureScot/MS-LOT/JNCC.	SSE//RMM4/MPA/26.08.22
MPA Assessment	01 September 2022. Email. From NatureScot. To: The Applicant. Provides NatureScot/JNCC joint advice	SNCB//RMM4/MPA/01.09.22
Marine Mammals	04 February 2022 Email. From: The Applicant To: NatureScot/MS-LOT. The Applicant shared Marine Mammal Technical Report	SSE//MMTR//MM/04.02.22
Marine Mammals	08 March 2022 Email. To: The Applicant. From NatureScot - NatureScot to clarify comments regarding grey seal:	SNCB//MMGS//MM/08.03.22
Marine Mammals	06 December 2021. Email. From: The Applicant. To: NatureScot - clarifications IAMMWG (2021) population estimates for white-beaked dolphin and minke what	e SSE//MMPE//MM//06.12.21
Marine Mammals	17 March 2022. Email. To: Applicant. From: NatureScot and MS- approach to estimating bottlenose dolphin coastal densities	MSLOT/RMM4//MM/17.03.22
Marine Mammals	07 March 2022. Email. From NatureScot. To: The Applicant. Advice to use of JNCC maximum population estimates for the breeding populations	Marine Mammals
Marine Mammals	27 July 2022 - Road Map Meeting 4 and associated minutes	MEETING/RMM4/MM/27.07.22
Marine Mammals	9 August 2022. Email. To: The Applicant. From NatureScot - Conversion Factors	SNCB/RMM4/MM/9.08.22
Marine Mammals	10 August 2022 Email. From: The Applicant. To NatureScot SSE's approach to estimating bottlenose dolphin coastal densities	SSE/RMM4/MM/10.08.22
Marine Mammals	31 August 2022. Email. From: The Applicant To: NatureScot/MS-LOT. advice including clarification to its advice on the use of conversion factors.	SNCB//RMM4/MM//31.08.22
Marine Mammals	08 September 2022. Email. From MS-LOT. To: The Applicant. clarifications on conversion factors	SNCB/RMM4/MM//08.09.22
Marine Mammal	12 September 2022: Meeting notes from marine Mammal Road Map Meeting 4: Mitigation and CEA	MS-LOT/MINUTES/MM/12.09.22
Marine Mammals	30 September 2022: Email. From: NatureScot. To: The Applicant. NatureScot advice, UXO mitigation, iPCoD, monitoring	SNCB/RMM4/MM//30.09.22
Marine Mammals	4 October 2022. Email. From MS-LOT. To: The Applicant. Conversion Factors and injury ranges	MSLOT/RMM4//MM/04.10.22
Benthic, Physical Processes	07 Mar 2022: MPA Road Map Meeting 3 and associated minutes	MEETING/RMM3/BEN/07.03.22
Benthic, Physical Processes	29 March 2022. Email From: NatureScot. To: The Applicant. Joint advice with JNCC following Road Map Meeting	SNCB/RMM3/BEN//29/.03.22
Benthic, Physical Processes	17 May 2022. Email From: NatureScot. To: The Applicant. Benthic, Fish, Physical Processes RMM3 Minutes/, Road Map Tracker/direction to these questions.	SNCB/RMM3/BEN/17.05.22
Benthic, Physical Processes	20 April 2022. Email. From: NatureScot/JNCC. To: The Applicant. Advice on Physical Processes modelling, sand waves re-exposure of cables.	SNCB/RMM4/BEN//20.04.22
Benthic, Physical Processes	As 19 July 2022. Email. From: NatureScot/JNCC. To: The Applicant. Advice reiterating commitment to sand wave monitoring as important	SNCB/RMM4/BEN//25.04.22
Benthic, Physical Processes	25 August 2022. Email. From: The Applicant To: NatureScot/MS-LOT/MSS. Response to advice of 20 April 2022	SSE/RMM3/BEN/25/.08.22
Benthic, Physical Processes	16 September 2022. Email. From: NatureScot. To: The Applicant. NatureScot/JNCC advice modelling, sand waves re-exposure of cables "	SNCB/RMM4/BEN//16.09.22
nfrastructure and Other Sea Jsers	Letter to Transport Scotland requesting agreement to scope out assessment of onshore transport impacts along with a commitment to a licence condition to produce a Construction Traffic Management Plan.	SSE/TS/16.02.22
nfrastructure and Other Sea Jsers	Email from Transport Scotland confirming that they are content to scope out traffic and transport assessment from offshore construction subject to the condition to require a Construction Traffic Management Plan.	TS/SSE/01.04.22



