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**SCOTTISH MINISTERS ASSESSMENT OF THE PROJECT'S
IMPLICATIONS FOR DESIGNATED SPECIAL AREAS OF
CONSERVATION AND SPECIAL PROTECTION AREAS IN VIEW OF
THE SITES' CONSERVATION OBJECTIVES.**

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT
1989 AND FOR MARINE LICENCES UNDER THE MARINE (SCOTLAND) ACT
2010 AND THE MARINE AND COASTAL ACCESS ACT 2009 FOR THE
CONSTRUCTION AND OPERATION OF THE BERWICK BANK WIND FARM

SITE DETAILS: CENTRAL NORTH SEA, APPROXIMATELY 47.6KM FROM THE
EAST LOTHIAN COASTLINE AND 37.8KM FROM THE SCOTTISH BORDERS
COASTLINE IN THE OUTER FIRTH OF FORTH.

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Glossary of Terms

AA	Appropriate Assessment
AEOSI	Adverse Effect on Site Integrity
BBWFL	Berwick Bank Offshore Wind Farm Limited
BDMPS	Biologically Defined Minimum Population Size
CGR	Counterfactual Growth Rate
CPS	Counterfactual of Population Size
CRM	Collision Risk Modelling
dB	Decibels
EIA	Environmental Impact Assessment
GW	Gigawatt
HPAI	Highly Pathogenic Avian Influenza
HRA	Habitats Regulations Appraisal
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
iPCoD	interim Population Consequences of Disturbance
JNCC	Joint Nature Conservation Committee
KJ	Kilojoule
km	Kilometres
LAT	Lowest Astronomical Tide
m	Metres
MD-SEDD	Marine Directorate – Science, Evidence, Data & Digital
OEC	Offshore Export Cable
OFFSAB	Outer Firth of Forth and St Andrews Bay Complex
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
PTS	Permanent Threshold Shift
PVA	Population Viability Analysis
RIAA	Report to Inform the Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
Scoping Opinion	Scoping opinion issued to BBWFL on 4 February 2022
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
UXO	Unexploded Ordnance
WTG	Wind Turbine Generator

SECTION 1: BACKGROUND

1 AA conclusion

1.1 This AA concludes that there will be no AEOSI on the Berwickshire and North Northumberland Coast SAC, Firth of Tay and Eden Estuary SAC, Isle of May SAC, Moray Firth SAC, Southern North Sea SAC, Cameron Reservoir SPA, Copinsay SPA, Coquet Island SPA, Din Moss – Hoselaw Loch SPA, Fair Isle SPA, Fala Flow SPA, Fetlar SPA, Firth of Forth SPA, Firth of Tay and Eden Estuary SPA, Foula SPA, Gladhouse Reservoir SPA, Greenlaw Moor SPA, Holburn Lake and Moss SPA, Hoy SPA, Loch Leven SPA, Loch of Kinnordy SPA, Lindisfarne SPA, Montrose Basin SPA, North Rona and Sula Sgeir SPA, Northumbria Coast SPA, Noss SPA, Slamannan Plateau SPA, South Tayside Goose Roosts SPA, Sule Skerry and Sule Stack SPA, Ythan Estuary, Sands of Forvie and Meikle Loch SPA and Westwater SPA from Berwick Bank Wind Farm either alone or in combination with other plans or projects, providing that the conditions set out in Section 6 are complied with.

1.2 The Scottish Ministers consider that the most up to date and best scientific advice available has been used in reaching the conclusion that Berwick Bank Wind Farm will not adversely affect the integrity of the above sites and is satisfied that no reasonable scientific doubt remains.

1.3 However, the AA concludes that there will be an AEOSI from Berwick Bank Wind Farm alone or in combination with other plans or projects, based on Scoping Approach B for the following breeding (or non-breeding) features and SPAs:

Alone:

- Kittiwake for Forth Islands, Fowlsheugh, OFFSAB breeding and non-breeding and St Abb's Head to Fast Castle SPAs;
- Guillemot for Forth Islands, Fowlsheugh, OFFSAB breeding and non-breeding and St Abb's Head to Fast Castle SPAs;
- Razorbill for St Abb's Head to Fast Castle SPA; and
- Seabird assemblage qualifiers for Farne Islands (kittiwake), Forth Islands (guillemot, kittiwake), Fowlsheugh (guillemot, kittiwake), breeding OFFSAB (guillemot, kittiwake), non-breeding OFFSAB (guillemot, kittiwake) and St Abb's Head to Fast Castle (guillemot, kittiwake, razorbill) SPAs.

In-combination:

- Kittiwake for Buchan Ness to Collieston Coast, East Caithness Cliffs, Flamborough and Filey Coast, North Caithness Cliffs and Troup, Pennan and Lion's Heads;

- Gannet for Forth Islands and OFFSAB breeding SPA;
- Puffin for Forth Islands and OFFSAB breeding SPAs;
- Razorbill for East Caithness Cliffs, Flamborough and Filey Coast, Fowlsheugh and Troup, Pennan and Lion's Heads SPAs; and
- Seabird assemblage qualifiers for Buchan Ness to Collieston Coast (kittiwake), East Caithness Cliffs (kittiwake, razorbill), Forth Islands (gannet, puffin), Fowlsheugh (razorbill), North Caithness Cliffs (kittiwake), OFFSAB breeding (gannet, puffin) and Troup, Pennan and Lion's Heads (kittiwake, razorbill) SPAs.

1.4 Further, the AA was unable to conclude beyond reasonable scientific doubt that there will be no AEOSI from Berwick Bank Wind Farm alone or in combination with other plans or projects, based on Scoping Approach B for the following features and SPAs:

Alone:

- Guillemot for Farne Islands SPA;
- Kittiwake for West Westray SPA;
- Razorbill for Forth Islands; and
- Seabird assemblage qualifiers for Forth Islands (razorbill) and West Westray (kittiwake) SPAs.

In-combination:

- Gannet for Hermaness, Saxa Vord and Valla Field SPA;
- Razorbill for OFFSAB (non-breeding) SPA; and
- Seabird assemblage for Hermaness, Saxa Vord and Valla Field SPA (gannet) and OFFSAB non-breeding (razorbill)

1.5 The Scottish Ministers therefore conclude that Berwick Bank Wind Farm can only be consented if a derogation case is agreed under regulation 49 of the Conservation (Natural Habitats, &c.) Regulations 1994 and regulation 29 of the Conservation of Offshore Marine Habitats and Species Regulations 2017.

2 Introduction

2.1 This is a record of the AA undertaken by the Scottish Ministers in regards to the BBWFL proposal to construct and operate an offshore generating station and associated transmission infrastructure located approximately 47.6 km from the East Lothian coastline and 37.8 km from the Scottish Border coastline ("the Berwick Bank Wind Farm"), comprising up to 307 WTGs with a combined maximum generating output of 4.1 GW as required under regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 and regulation 28 of the Conservation of Offshore Marine Habitats and Species Regulations 2017 (together, "the Habitats Regulations"). The Scottish Ministers, as the

'competent authority' under the Habitats Regulations, can only agree to a project after they are satisfied that the project will not adversely affect the integrity of any European site (SACs or SPAs), either alone or in combination with other plans or projects. If AEOSI is identified, or the AA is unable to conclude no AEOSI, then a competent authority can only agree to a project if the requirements of the derogation provisions in the Habitats Regulations are met. The derogation process is not part of the AA and, given the conclusions of the AA, will be considered separately in other documentation relating to the application for Berwick Bank Wind Farm.

2.2 NatureScot, operating name of Scottish Natural Heritage, and Natural England have been consulted in accordance with Regulation 48(3) of the Conservation (Natural Habitats, &c.) Regulations 1994 and Regulation 28(4) of the Conservation of Offshore Marine Habitats and Species Regulations 2017.

3 Details of proposed project

3.1 BBWFL has submitted three separate marine licence applications in respect of the generating station and the transmission works under part 4 of the Marine and Coastal Access Act 2009 and part 4 of the Marine (Scotland) Act 2010. In addition, BBWFL has submitted an application for section 36 consent under the Electricity Act 1989 in respect of the Berwick Bank Wind Farm. A full description of the Berwick Bank Wind Farm can be found in [volume 1, chapter 3](#) of the EIA Report as submitted on 9 December 2022. The section 36 consent and marine licences applied for are for an operational period of 35 years.

3.2 BBWFL proposes to construct and operate a large-scale offshore wind farm and associated infrastructure located in the outer Firth of Forth approximately 47.6km from the East Lothian coastline and 37.8km from the Scottish Borders coastline. The Berwick Bank Wind Farm will consist of a maximum of 307 WTGs with a combined maximum generating output of around 4.1GW. See Table 1 for the physical parameters of the WTGs. The WTG foundations will comprise either suction caisson jacket or piled jacket design. In addition to the WTGs, up to 10 OSPs are proposed to be installed on either suction caisson jacket or piled jacket foundations and 8 OECs comprising a maximum length of 872km are proposed which will run from the OSPs to the landfall point at Skateraw Harbour, East Lothian. The Berwick Bank Wind Farm is proposed to cover an area of 1,178.1km squared to include the wind farm array area and export cable corridor.

Table 1: Summary of the physical parameters of the WTGs based on the maximum design scenario for the Berwick Bank Wind Farm

Design Envelope Parameter	Berwick Bank Wind Farm
---------------------------	------------------------

Maximum number of WTGs	307
Maximum hub height (above LAT))	200 m
Minimum blade tip height (above LAT)	37 m
Maximum blade tip height (above LAT)	355 m
Maximum rotor diameter for smallest WTG option	222 m
Maximum rotor diameter	310 m
Maximum number of blades	3
Maximum spacing between WTGs	4,650 m
Minimum spacing between WTGs	1,000 m
Foundation options (WTGs and OSPs)	Piled jacket or suction caisson jacket
Maximum number of legs per jacket (WTGs)	4
Maximum number of pin piles per leg (WTGs)	2

3.3 Pin-pile and suction caisson jacket foundations are considered the most appropriate foundation and substructure options for the WTGs and OSPs. Both options are assessed in [volume 1, chapter 3](#) of the EIA Report. The final selection will be based on various technical, environmental and economic factors (including, but not limited to, water depth, whole life economics and compatibility with WTGs).

3.4 Where substructures have piled foundations, the following design envelope parameters for piling activities have been assessed:

Table 2: Piling parameters (WTG jacket substructure)

Design Parameter	Maximum Design Envelope
Drilling/ piling events (per WTG)	8
Maximum seabed penetration depth	80 m
Maximum diameter of pin piles	5.5 m
Maximum energy capacity of hammer	4,000 kJ

3.5 OSPs will be located on substructures as outlined above and the applications consider a range of maximum design parameters which are dependent upon the final electrical design for the Berwick Bank Wind Farm. Table 3 and 4 below provide a summary in respect of piled jacket and suction caisson jacket as assessed in the EIA Report.

Table 3: Piling parameters (OSP)

Electrical design options	Piled jacket foundation (OSP)				
	Option A		Option B		HVDC Option
	<i>HVAC</i>	<i>HVDC</i>	<i>HVAC</i>	<i>HVDC</i>	
Maximum number of OSPs	8	2	5	2	5
Maximum height of topside structure (above LAT)	45 m	65 m	50 m	65 m	80 m
Maximum number of piled jacket platforms	8	2	5	2	5
Maximum number of legs per jacket (OSP)	6	8	8	8	8
Maximum number of pin piles per piled jacket platform (OSP)	24	32	32	32	32
Maximum diameter of pin piles	3 m	4 m	3.5 m	4 m	4 m
Maximum energy capacity of hammer	4,000 kJ	4,000 kJ	4,000 kJ	4,000 kJ	4,000 kJ

Table 4: Suction caisson parameters (OSP)

Electrical design options	Suction caisson jacket foundation (OSP)				
	Option A		Option B		HVDC Option
	<i>HVAC</i>	<i>HVDC</i>	<i>HVAC</i>	<i>HVDC</i>	
Maximum number of OSPs	8	2	5	2	5
Maximum height of topside structure (above LAT)	45 m	65 m	50 m	65 m	80 m
Maximum number of suction caisson platforms	8	2	5	2	5

Maximum number of legs per jacket	6	8	8	8	8
Maximum suction caisson diameter	15 m	15 m	15 m	15 m	15 m
Maximum suction caisson penetration depth	15 m	15 m	15 m	15 m	15 m

3.6 Berwick Bank Wind Farm will require inter array cabling to connect the WTGs to the OSPs, interconnector cabling to connect the OSPs and up to eight OECs. The cables will be buried where possible and protected (e.g. rock placement or concrete mattresses) where burial is not feasible. Cables will be buried using one or a combination of methods including jetting, trenching and ploughing. Table 5 provides a summary of the design envelope parameters as assessed in the EIA Report.

Table 5: Design envelope parameters for cables

	Maximum total cable length	Maximum cable burial depth
Inter-array cables	1,225 km	3 m
Interconnector cables	94 km	3 m
OEC	872 km (per cable)	3 m

3.7 It is currently planned that the construction of Berwick Bank Wind Farm will commence in 2025 and end in 2033 – a period of approximately 8 years. Table 6 below provides an overview of the anticipated duration of the main construction activities.

Table 6: Main construction activities and anticipated durations

Activity	Anticipated duration
Site preparation works	The duration of the construction phase commencing Q1 2025 and ending Q1 2033
Landfall installation	15 months
WTG substructure installation	4 years and 6 months across two campaigns
OSP platform installation	3 years across two campaigns
Inter-array cable installation	5 years across two campaigns
OEC installation	2 years and one month
WTG installation	3 years across two campaigns
Completion and snagging	5 years across two campaigns

3.8 Figure 1 provides a chart detailing the Berwick Bank Wind Farm area, including the OEC corridor.

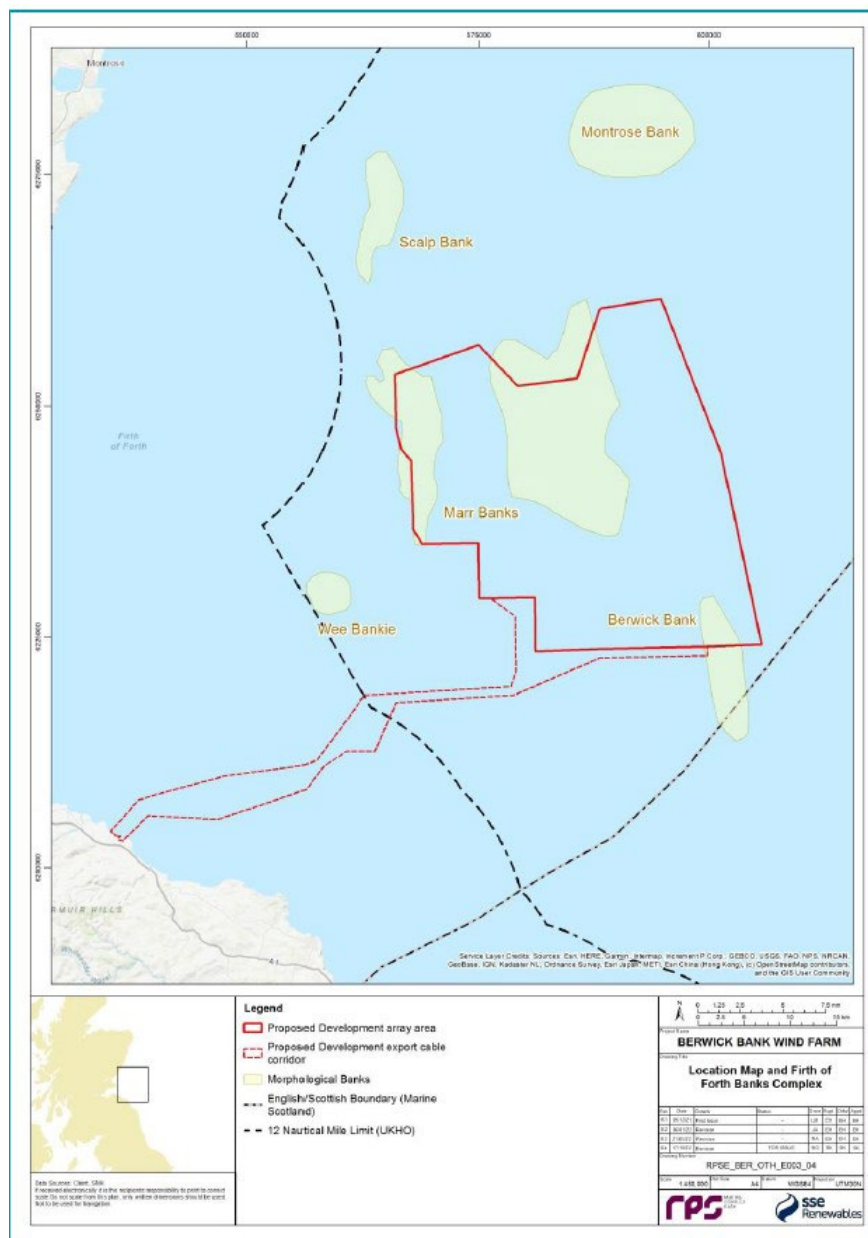


Figure 1: Chart of Berwick Bank Wind Farm area and offshore export cable corridor

Source: The EIA Report – [Volume 1, Chapter 3](#)

4 Consultation

4.1 NatureScot, Natural England and RSPB Scotland were consulted on 22 December 2022. NatureScot responded on 21 February 2023 (in relation to non-ornithological receptors) and on 31 March 2023 (in relation to ornithological receptors). Natural England and RSPB Scotland responded on 6 April 2023 and 31 March 2023, respectively.

- 4.2 NatureScot provided further clarification to its advice on 25 May 2023 and advised that an AA was not required in relation to diadromous fish designated features of SACs identified in the Berwick Bank Wind Farm RIAA.
- 4.3 Following consultation, BBWFL were required to submit additional information in respect of its applications for Berwick Bank Wind Farm. An addendum to the EIA and HRA was issued for consultation on 18 August 2023. NatureScot, Natural England and RSPB Scotland responded to this on 3 October 2023, 24 October 2023 and 27 October 2023, respectively. NatureScot submitted an additional response to the supplementary information package, submitted as part of the additional information, on 27 October 2023. In addition, NatureScot provided a further clarification response with regard to the OFFSAB SPA on 19 December 2023. NatureScot was asked for advice on SPAs where a likely significant effect had been identified but where there was no indication of AEOSI on 27 February 2024. A response was provided on 18 March 2024. NatureScot was asked for clarification on its advice regarding the seabird assemblage feature of the West Westray SPA on 29 April 2024 and responded on 30 April 2024. NatureScot was asked for clarification of its advice on the non-breeding razorbill qualifying feature of OFFSAB SPA on 7 May 2024 and provided responses on 14 May 2024, 24 May 2024 and 7 June 2024. NatureScot was asked for clarification regarding the approach to seabird assemblages on 30 July 2024 and responded on 31 July 2024, 7 August 2024 and 8 August 2024.
- 4.4 NatureScot and Natural England were both further consulted on the AA on 2 July 2024 and 30 April 2025 and responded on 10 July 2024 and 7 May 2025, respectively.

5 Summary of consultation responses

- 5.1 The main points raised by each of the respondents that included HRA specific comments are summarised below. Copies of all consultation responses received by the Scottish Ministers can be accessed [here](#).
- 5.2 Where conclusions varied between the statutory consultees (NatureScot/Natural England) and RSPB Scotland, additional text is included in the relevant species/SPA sections below. Otherwise only statements from NatureScot, for Scottish SPAs and Natural England for English SPAs are included for each individual species and SPA combination.
- 5.3 A summary table is included below with respect to the responses on ornithology from all of the consultees (Table 7).

Table 7: SPA interest features for which Scottish Ministers (AA), BBWFL (based on the Scoping Approaches), NatureScot, Natural England and RSPB Scotland advised an AEOSI from either Berwick Bank Wind Farm alone or in combination with other Forth & Tay OWFs and/or UK North Sea OWFs. A question mark is listed where AEOSI is not concluded but cannot be ruled out.

Species	SPA	Alone					In-combination				
		AA	BBWFL	NatureScot	Natural England	RSPB Scotland	AA	BBWFL	NatureScot	Natural England	RSPB Scotland
Kittiwake	Buchan Ness to Collieston Coast						Y	Y	Y		Y
	East Caithness Cliffs						Y	Y	Y		Y
	Forth Islands	Y		Y		Y	Y		Y		Y
	Fowlsheugh	Y		Y		Y	Y		Y		Y
	North Caithness Cliffs						Y	Y	Y		Y
	OFFSAB (breeding)	Y		Y			Y		Y		
	OFFSAB (non-breeding)	Y	Y	Y			Y	Y	Y		
	St Abb's Head to Fast Castle	Y	Y	Y		Y	Y	Y	Y		Y
	Troup, Pennan and Lion's Heads						Y	Y	Y		Y
	West Westray	?		?			Y	Y	Y		Y
Flamborough and Filey Coast						Y	Y		Y	Y	
Guillemot	Forth Islands	Y	Y	Y		Y	Y	Y	Y		Y
	Fowlsheugh	Y	Y	Y		Y	Y	Y	Y		Y
	OFFSAB (breeding)	Y		Y			Y		Y		
	OFFSAB (non-breeding)	Y	Y	Y			Y	Y	Y		
	St Abb's Head to Fast Castle	Y	Y	Y		Y	Y	Y	Y		Y
	Farne Islands	?			Y		?				
	Flamborough and Filey Coast									?	
Razorbill	East Caithness Cliffs						Y	Y	Y		
	Forth Islands	?		?		Y	Y	Y	Y		Y
	Fowlsheugh						Y	Y	Y		Y
	OFFSAB (non-breeding)						?		?		
	St Abb's Head to Fast Castle	Y		Y			Y	Y	Y		Y
	Troup, Pennan and Lion's Heads						Y		Y		
Flamborough and Filey Coast						Y			Y		
Puffin	Forth Islands					Y	Y	Y	Y		Y
	North Caithness Cliffs										Y
	OFFSAB (breeding)						Y		Y		
Gannet	Forth Islands					Y	Y		Y		Y
	Hermaness, Saxa Vord & Valla Field						?		?		Y
	OFFSAB (breeding)						Y		Y		
Breeding seabird assemblage	Buchan Ness to Collieston Coast						Y	Y	Y		Y
	East Caithness Cliffs						Y	Y	Y		
	Forth Islands	Y		Y			Y		Y		
	Fowlsheugh	Y		Y			Y	Y	Y		
	Hermaness, Saxa Vord & Valla Field						?		?		
	North Caithness Cliffs						Y	Y	Y		
	OFFSAB (breeding)	Y		Y			Y		Y		
	OFFSAB (non-breeding)	Y	Y	Y			Y	Y	Y		
	St Abb's Head to Fast Castle	Y	Y	Y			Y	Y	Y		
	Troup, Pennan and Lion's Heads						Y		Y		
West Westray	?		?			Y		Y			
Farne Islands	Y			Y		Y	Y				

5.4 NatureScot

Annex 1 Habitats

- 5.4.1 In its response dated 21 February 2023, NatureScot agreed with the approach adopted in the RIAA that Berwick Bank Wind Farm would not have an AEOSI on the Berwickshire and North Northumberland Coast SAC with regard to Annex 1 Habitat qualifying interests.

Diadromous Fish

- 5.4.2 Based on advice provided at the pre-application stage, the RIAA considered that there would be a likely significant effect on the diadromous fish qualifying interests of the River Dee SAC, River South Esk SAC, River Tay SAC, River Teith SAC, River Tweed SAC and Tweed Estuary SAC. The RIAA identified the following impact pathways: temporary subtidal habitat loss/disturbance, increased suspended sediment concentrations and deposition, underwater noise and vibration, long term subtidal habitat loss, electro-magnetic fields and colonisation of foundations, scour protection and cable protection. Whilst NatureScot considered that these impact pathways had been correctly identified, it could not advise on which sites or qualifying features would be impacted.
- 5.4.3 NatureScot advised that due to the extremely limited knowledge of distribution and behaviour of these species in the marine environment, it was unable to advise on connectivity and therefore impacts to populations within natal rivers from Berwick Bank Wind Farm or apportioning back to natal SAC sites. NatureScot advised therefore that it was unable to carry out an assessment on diadromous fish to the level required under the Habitats Regulations. NatureScot advised that from an EIA perspective, based on the information provided in the RIAA and EIA Report, it considered that Berwick Bank Wind Farm was unlikely to have significant adverse effects either alone or cumulatively on diadromous fish. The Scottish Ministers agree with NatureScot and these sites and species have therefore not been carried forward for assessment in the AA. The effects and consideration of any appropriate mitigation will however be considered further within the EIA decision notice.

Ornithology

- 5.4.4 NatureScot advised AEOSI for multiple features of Scottish SPAs from the Berwick Bank Wind Farm alone and in combination with other OWFs at Forth & Tay and UK North Sea spatial scales. NatureScot agreed with the

conclusions of the RIAA submitted by BBWLF for some sites, however it disagreed with the RIAA regarding others and concluded AEOSI or was unable to conclude no AEOSI for some qualifying features.

- 5.4.5 NatureScot submitted a response on 31 March 2023 as regards the ornithological interests of the Buchan Ness to Collieston Coast SPA, East Caithness Cliffs SPA, Forth Islands SPA, Fowlsheugh SPA, Hermaness, Saxa Vord and Valla Field SPA, North Caithness Cliffs SPA, OFFSAB SPA, St Abb's Head to Fast Castle SPA, Troup Pennan and Lion's Heads SPA and West Westray SPA listed in section 7.2 and considered in the RIAA.
- 5.4.6 NatureScot advised that key sites and species assessed within the RIAA have been significantly affected by HPAI and as such NatureScot's assessment of impacts is therefore more precautionary for those species which are known to have been significantly impacted.
- 5.4.7 NatureScot also advised that the magnitude of impacts predicted is due to the extremely high densities of birds found within the Berwick Bank Wind Farm area. NatureScot advised that the impacts predicted are an order of magnitude greater, and across more species than any other offshore wind farm application in Scotland. NatureScot further advised in its response to the supplementary information package, submitted as part of the additional information, on 27 October 2023, that because the Berwick Bank Wind Farm array site is notably larger than any other wind farm developments suggested or approved in the Forth region or Scottish waters, the population estimates for the development site relative to other development in the same area should be considered when interpreting density figures. In this response, NatureScot presented a table demonstrating the greater proportion of the biogeographic population encompassed by Berwick Bank Wind Farm compared to Seagreen Alpha and Bravo, Neart na Gaoithe and Inch Cape, for guillemot, kittiwake and gannet (puffin and razorbill not presented).
- 5.4.8 NatureScot concluded there will be an AEOSI or were unable to conclude no AEOSI for the following SPAs and qualifying features, either alone or in combination with consented Forth & Tay windfarm projects and/or wind farms located elsewhere in the North Sea as a result of displacement effects (guillemot, razorbill and puffin) or combined displacement and collision mortality:

Alone:

- Forth Islands SPA – guillemot;
- Fowlsheugh SPA – guillemot
- St Abb's Head to Fast Castle SPA - guillemot, kittiwake and breeding seabird assemblage;

In combination:

- Buchan Ness to Collieston Coast SPA – kittiwake and breeding seabird assemblage;
- East Caithness Cliff SPA – kittiwake, razorbill and breeding seabird assemblage;
- Forth Islands SPA – guillemot, kittiwake puffin and razorbill breeding seabird assemblage;
- Fowlsheugh SPA – guillemot, razorbill, kittiwake and breeding seabird assemblage;
- North Caithness Cliffs SPA – kittiwake and breeding seabird assemblage;
- OFFSAB SPA – non-breeding guillemot, kittiwake and seabird assemblage;
- St Abb's Head to Fast Castle SPA – guillemot, kittiwake, razorbill and breeding seabird assemblage;
- Troup, Pennan and Lion's Heads SPA – kittiwake;
- West Westray SPA – kittiwake.

5.4.9 In addition, NatureScot disagreed with the conclusions of the RIAA and found that Berwick Bank Wind Farm would have an AEOSI, or were unable to conclude no AEOSI alone and/or in combination with consented Forth & Tay windfarm projects and/or wind farms located elsewhere in the North Sea, with respect to the following qualifying interests:

Alone:

- Forth Islands SPA – kittiwake, razorbill and breeding seabird assemblage;
- Fowlsheugh SPA – kittiwake and breeding seabird assemblage;
- OFFSAB SPA – breeding guillemot, kittiwake and breeding seabird assemblage;
- St Abb's Head to Fast Castle SPA – razorbill;
- West Westray SPA – kittiwake and breeding seabird assemblage;

In combination:

- Forth Islands SPA – gannet;
- Hermaness, Saxa Vord and Valla Field SPA – gannet and breeding seabird assemblage;
- OFFSAB SPA – breeding gannet, guillemot, kittiwake, puffin and breeding seabird assemblage; and non-breeding razorbill

- Troup, Pennan and Lion's Heads SPA – razorbill and breeding seabird assemblage;
- West Westray SPA – breeding seabird assemblage;

5.4.10 In its advice on the Ornithology Impact Assessment (31 March 2023), NatureScot highlighted that for the OFFSAB SPA insufficient information was provided within the application documentation to ascertain no AEOSI. This was with respect to those features sensitive to disturbance effects from construction and operational vessel activity alone, and in combination with consented Forth & Tay windfarms.

5.4.11 NatureScot clarified its advice (18 and 23 May 2023) on which of the protected features of the OFFSAB SPA the assessment should consider. This included: common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, Slavonian grebe and shag. NatureScot confirmed that great northern diver was not required to be assessed since it is not a qualifying feature of this SPA nor a component of any assemblage feature of the SPA.

5.4.12 Additional information was provided by BBWFL on 4 August 2023 and NatureScot provided a further response on 3 October 2023 to be considered in conjunction with its previous response. In its response dated 3 October 2023, NatureScot concluded that if the Berwick Bank Wind Farm is carried out strictly in accordance with the mitigation described in its response then the Berwick Bank Wind Farm will not adversely affect the integrity of the OFFSAB SPA for the additional nine species listed above (see section 18.1 for more details). NatureScot also advised that avoiding the increase in vessel traffic within the SPA by utilising transit routes outwith the SPA, is likely sufficient to avoid an AEOSI.

5.4.13 NatureScot assumed the additional information was reflective of the level of vessel traffic within the OFFSAB SPA however requested confirmation from BBWFL of this assumption. BBWFL provided clarification of this on 23 November 2023 and NatureScot provided a further response on 19 December 2023. NatureScot concluded that the advice provided in its response of 3 October 2023 remained valid.

5.4.14 In consideration of impacts on migratory waterbird SPAs, NatureScot agreed with the RIAA that there will be no AEOSI with respect to the waterbird qualifying features of the following SPAs:

- Firth of Forth SPA;
- Montrose Basin SPA;
- Firth of Tay and Eden Estuary SPA;
- Ythan Estuary, Sands of Forvie and Meikle Loch SPA;

- Cameron Reservoir SPA;
- Greenlaw Moor SPA;
- Loch of Kinnordy SPA;
- Din Moss - Hoselaw Loch SPA;
- Fala Flow SPA;
- Loch Leven SPA;
- Gladhouse Reservoir SPA;
- South Tayside Goose Roosts SPA;
- Westwater SPA; and
- Slamannan Plateau SPA.

5.4.15 On 18 March 2024, NatureScot provided further advice regarding the species and SPAs considered by BBWFL in Table 3.1, Part 3 of the RIAA that had not been considered in its previous advice detailed above. In all cases, NatureScot agreed with the RIAA that there would be a likely significant effect but that there would be no AEOSI.

Marine Mammals

5.4.16 In its response dated 21 February 2023, NatureScot agreed with the RIAA that Berwick Bank Wind Farm would have a likely significant effect on the marine mammal qualifying interests of the Berwickshire and North Northumberland Coast SAC, Firth of Tay and Eden Estuary SAC, Isle of May SAC and Moray Firth SAC. NatureScot considered that Berwick Bank Wind Farm would not impact the harbour porpoise qualifying interest of the Southern North Sea SAC, however, advised that Natural England advice be sought in this regard.

5.4.17 NatureScot concluded that there would be no AEOSI on any classified SAC with marine mammal qualifying interests, with the exception of the harbour seal qualifying interest of the Firth of Tay and Eden Estuary SAC. NatureScot noted that it was unable to provide final advice in respect of this protected site or the in-combination effects for any of the designated sites without additional information from BBWFL on the modelling approach and assessments undertaken within the RIAA.

5.4.18 Additional information was provided by BBWFL on 4 August 2023 and NatureScot provided a further response on 3 October 2023 to be considered in conjunction with its previous response. NatureScot advised that the additional information provided clarification on the modelling approach and assessments undertaken and agreed with the conclusions of the RIAA that there would be no AEOSI on any classified SAC with marine mammal qualifying interests.

5.5 Natural England

Ornithology

- 5.5.1 In its response to the consultation dated 6 April 2023, Natural England agreed with the conclusions of the RIAA such that Berwick Bank Wind Farm, in combination with other projects, would have an AEOSI on the kittiwake qualifying interest of the Flamborough and Filey Coast SPA. Natural England further agreed with the RIAA's findings that adverse effects of Berwick Bank Wind Farm alone and in combination could be ruled out in respect of gannet and the seabird assemblage interests of the Flamborough and Filey Coast SPA. However, in its consultation response of 7 May 2025, Natural England stated that if their preferred methodology had been adopted, guillemot at Flamborough and Filey Coast SPA would have been assessed for non-breeding impacts and as such it is likely that AEOSI in-combination could not have been ruled out. However, given the number of other impacted guillemot SPAs and the likely severity of impacts on those SPAs with breeding season connectivity, Natural England considered that the level of compensation already required for breeding season impacts on guillemot at multiple SPAs means that the level of compensation already required would address the non-breeding season effects at this site.
- 5.5.2 Natural England disagreed with the conclusions of the RIAA regarding the razorbill qualifying interest of the Flamborough and Filey Coast SPA and advised that impacts are already at a level where adverse effects cannot be ruled out. As such, when assessing Berwick Bank Wind Farm in combination with other projects, Natural England conclude AEOSI.
- 5.5.3 Furthermore, Natural England disagreed with the conclusions of the RIAA and advised that it could not exclude AEOSI in respect to the guillemot and seabird assemblage (kittiwake, guillemot and puffin) qualifying interests of the Farne Islands SPA when considering Berwick Bank Wind Farm alone. In reaching its conclusion, Natural England noted that BBWFL failed to assess displacement impacts occurring during construction and decommissioning stages of the Berwick Bank Wind Farm. Natural England concluded that impacts on guillemot, razorbill, puffin, and gannet would likely be higher than those predicted in the RIAA. In its response of 7 May 2025, Natural England highlighted that several additional aspects of the assessment likely resulted in underestimation, not just failure to consider construction and decommissioning, and in some cases, overestimation (see section 9.7.1).
- 5.5.4 Natural England further advised that displacement impacts for non-breeding puffin should have been assessed, in which case impacts would likely be greater than those concluded in the RIAA. In respect of the Coquet Island SPA,

Natural England agreed that Berwick Bank Wind Farm would have no AEOSI on its qualifying interests.

5.5.5 In its response dated 24 October 2023, Natural England confirmed it had no comments in relation to the additional information and referred back to its response dated 6 April 2023.

5.5.6 In its response to the Appropriate Assessment dated 7 May 2025, Natural England advised that the estimated effects of Berwick Bank Wind Farm are very large. Natural England highlighted that due to the different methodologies advocated by Natural England, in some instances it considers the presented impact levels to be underestimates. However, with the exception of guillemot at Flamborough and Filey Coast SPA (see section 5.5.1), Natural England does not consider that this underestimation would affect the conclusions of the Appropriate Assessment.

Diadromous Fish

5.5.7 Natural England agreed with the RIAA that Berwick Bank Wind Farm is unlikely to have an AEOSI on any English SACs in relation to diadromous fish qualifying interests.

Marine Mammals

5.5.8 Natural England advised that the Berwick Bank Wind Farm could be excluded from having a significant effect on marine mammal qualifying interests of any classified English SACs on the basis that mitigation measures and JNCC guidelines ('Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise (2010)') are followed by Berwick Bank Wind Farm. As the conclusion of no significant effect is based on mitigation, for the avoidance of doubt, the Southern North Sea SAC and Berwickshire and North Northumberland Coast SAC are taken forward for assessment in the AA.

5.6 RSPB Scotland

Ornithology

5.6.1 In its response to the consultation dated 31 March 2023, RSPB Scotland advised that the location of Berwick Bank Wind Farm would cause serious and irreparable harm to biodiversity, including pressure on species impacted by HPAI. RSPB Scotland concluded that AEOSI for Berwick Bank Wind Farm alone cannot be ruled out for the following sites and species:

- Forth Islands SPA, Fowlsheugh SPA and St Abbs to Fast Castle SPA, kittiwake;
- Forth Islands SPA, Fowlsheugh SPA and St Abbs to Fast Castle SPA, guillemot;
- Forth Islands SPA, razorbill;
- Forth Islands SPA, puffin;
- Forth Islands SPA; gannet; and
- OFFSAB SPA; breeding seabirds.

5.6.2 RSPB Scotland concluded that AEOSI for Berwick Bank Wind Farm in combination with other North Sea wind farms cannot be ruled out for the following sites and species:

- Forth Islands SPA, Fowlsheugh SPA, St Abbs to Fast Castle SPA, Troup, Pennan and Lion's Heads SPA, East Caithness Cliffs SPA, North Caithness Cliffs SPA, West Westray SPA, Buchan Ness to Collision Coast SPA, Flamborough and Filey Coast SPA and Farne Islands SPA, kittiwake;
- Forth Islands SPA, Fowlsheugh SPA and St Abbs to Fast Castle SPA, guillemot;
- Forth Islands SPA, Fowlsheugh and St Abbs to Fast Castle SPA; razorbill;
- Forth Islands SPA and North Caithness Cliffs SPA, puffin;
- Forth Islands SPA and Hermaness, Saxa Vord and Valla Field SPA, gannet; and
- OFFSAB SPA, breeding seabirds.

5.6.3 RSPB Scotland acknowledged BBWFL's conclusion that the potential for AEOSI cannot be excluded for four different species at eight different SPAs. However, based on its own analysis and its consideration of the status of Scottish seabirds, RSPB Scotland also concluded that Berwick Bank Wind Farm would have an AEOSI on:

- Forth Islands SPA gannet alone and in combination with other UK North Sea developments
- Hermaness, Saxa Vord and Valla Field SPA gannet in combination with other UK North Sea developments
- North Caithness Cliffs SPA kittiwake and puffin in combination with other UK North Sea developments
- West Westray SPA kittiwake in combination with other UK North Sea developments

- 5.6.4 In addition, and as acknowledged by BBWFL, given the possibility of adverse effects on these breeding seabird SPAs, RSPB Scotland considered potential adverse effects cannot be excluded for the OFFSAB SPA. In its response (27 October 2023) to the additional information provided by BBWFL, RSPB Scotland advised that its position remained unchanged.

SECTION 2: INFORMATION ON EUROPEAN SITES

6 Background information and qualifying interests for the relevant European sites

- 6.1 This section provides links to the NatureScot SiteLink website and Natural England website where the background information on the sites being considered in this assessment is available. The qualifying interests for the sites are listed as are the conservation objectives.
- 6.2 In Scotland, there is an established policy position whereby any named qualifying species of an assemblage feature in an SPA are considered by NatureScot to be protected in their own right, akin to non-assemblage named qualifying species. This is because the SPA conservation objectives are set for individual species rather than the assemblage and therefore should be assessed and impacts concluded at the scale of the individual species. In England, it is the unit of the assemblage as a whole at which the conservation objectives are set and therefore on which advice is provided by Natural England. Accordingly, the AA follows the approach by the respective SNCBs for SPAs in Scotland and England, presenting conclusions for all species listed in the SPA citation in their own right for Scotland (irrespective of qualifying as part of an assemblage or as a named non-assemblage species).

Table 8: Name of European sites affected and relevant link(s)

<p><u>SAC:</u></p> <p><u>Berwickshire and North Northumberland Coast SAC</u></p> <p><u>Firth of Tay and Eden Estuary SAC</u></p> <p><u>Isle of May SAC</u></p> <p><u>Moray Firth SAC</u></p> <p><u>Southern North Sea SAC</u></p> <p><u>SPA:</u></p>
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[Buchan Ness to Collieston Coast SPA](#)

[Cameron Reservoir SPA](#)

[Copinsay SPA](#)

[Coquet Island SPA](#)

[Din Moss – Hoselaw Loch SPA](#)

[East Caithness Cliffs SPA](#)

[Fair Isle SPA](#)

[Fala Flow SPA](#)

[Farne Islands SPA](#)

[Fetlar SPA](#)

[Firth of Forth SPA](#)

[Firth of Tay and Eden Estuary SPA](#)

[Flamborough and Filey Coast SPA](#)

[Forth Islands SPA](#)

[Foula SPA](#)

[Fowlsheugh SPA](#)

[Gladhouse Reservoir SPA](#)

[Greenlaw Moor SPA](#)

[Hermaness, Saxa Vord and Valla Field SPA](#)

[Holburn Lake and Moss SPA](#)

[Hoy SPA](#)

[Lindisfarne SPA](#)

[Loch Leven SPA](#)

[Loch of Kinnordy SPA](#)

[Montrose Basin SPA](#)

[North Caithness Cliffs SPA](#)

[North Rona and Sula Sgeir SPA](#)

[Northumbria Coast SPA](#)

[Noss SPA](#)

[Outer Firth of Forth and St Andrews Bay Complex \(“OFFSAB”\) SPA](#)

[Slamannan Plateau SPA](#)

[South Tayside Goose Roosts SPA](#)

[Sule Skerry and Sule Stack SPA](#)

[St Abb’s Head to Fast Castle SPA](#)

[Troup, Pennan and Lion’s Heads SPA](#)

[Westwater SPA](#)

[West Westray SPA](#)

[Ythan Estuary, Sands of Forvie and Meikle Loch SPA](#)

Table 9: Qualifying Interests

Berwickshire and North Northumberland Coast SAC

- Grey seal (*Halichoerus grypus*)
- Large shallow inlets and bays
- Mudflats and sandflats not covered by seawater at low tide
- Reefs
- Submerged or partially submerged sea caves

Firth of Tay and Eden Estuary SAC

- Estuaries
- Harbour (or common) seal (*Phoca vitulina*)
- Intertidal mudflats and sandflats
- Subtidal sandbanks

Isle of May SAC

- Grey seal (*Halichoerus grypus*)
- Reefs

Moray Firth SAC

- Bottlenose dolphin (*Tursiops truncatus*)
- Subtidal sandbanks

Southern North Sea SAC

- Harbour porpoise (*Phocoena phocoena*)

Buchan Ness to Collieston Coast SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Guillemot (*Uria aalge*), breeding*
- Herring gull (*Larus argentatus*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding*
- Shag (*Phalacrocorax aristotelis*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Cameron Reservoir SPA

- Pink-footed goose (*Anser brachyrhynchus*), non-breeding

Copinsay SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Great black-backed gull (*Larus marinus*), breeding*
- Guillemot (*Uria aalge*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Coquet Island SPA

- Arctic tern (*Sterna paradisae*), breeding
- Common tern (*Sterna hirundo*), breeding
- Roseate tern (*Sterna dougalli*), breeding
- Sandwich tern (*Sterna sandvicensis*), breeding
- Seabird assemblage, breeding

Din Moss – Hoselaw Loch SPA

- Greylag goose (*Anser anser*), non-breeding
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding

East Caithness Cliffs SPA

- Cormorant (*Phalacrocorax carbo*), breeding*
- Fulmar (*Fulmarus glacialis*), breeding*
- Great black-backed gull (*Larus marinus*), breeding*
- Guillemot (*Uria aalge*), breeding
- Herring gull (*Larus argentatus*), breeding
- Kittiwake (*Rissa tridactyla*), breeding
- Peregrine (*Falco peregrinus*), breeding
- Razorbill (*Alca torda*), breeding
- Shag (*Phalacrocorax aristotelis*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Fair Isle SPA

- Arctic skua (*Stercorarius parasiticus*), breeding*
- Arctic tern (*Sterna paradisaea*), breeding
- Fair Isle wren (*Troglodytes troglodytes fridariensis*), breeding
- Fulmar (*Fulmarus glacialis*), breeding*
- Gannet (*Morus bassanus*), breeding*
- Great skua (*Stercorarius skua*), breeding*
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Puffin (*Fratercula arctica*), breeding*
- Razorbill (*Alca torda*), breeding*
- Shag (*Phalacrocorax aristotelis*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Fala Flow SPA

- Pink-footed goose (*Anser brachyrhynchus*), non-breeding

Farne Islands SPA

- Sandwich tern (*Sterna sandvicensis*), breeding
- Roseate tern (*Sterna dougallii*), breeding
- Common tern (*Sterna hirundo*), breeding
- Arctic tern (*Sterna paradisaea*), breeding
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Shag (*Phalacrocorax aristotelis*), breeding*

- Cormorant (*Phalacrocorax carbo*), breeding*
- Puffin (*Fratercula arctica*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Fetlar SPA

- Arctic skua (*Stercorarius parasiticus*), breeding*
- Arctic tern (*Sterna paradisaea*), breeding
- Dunlin (*Calidris alpina schinzii*), breeding
- Fulmar (*Fulmarus glacialis*), breeding*
- Great skua (*Stercorarius skua*), breeding
- Red-necked phalarope (*Phalaropus lobatus*), breeding
- Whimbrel (*Numenius phaeopus*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Firth of Forth SPA

- Bar-tailed godwit (*Limosa lapponica*), non-breeding
- Common scoter (*Melanitta nigra*), non-breeding*
- Cormorant (*Phalacrocorax carbo*), non-breeding*
- Curlew (*Numenius Arquata*), non-breeding*
- Dunlin (*Calidris alpina alpina*), non-breeding*
- Eider (*Somateria mollissima*), non-breeding*
- Golden plover (*Pluvialis apricaria*), non-breeding
- Goldeneye (*Bucephala clangula*), non-breeding*
- Great crested grebe (*Podiceps cristatus*), non-breeding*
- Grey plover (*Pluvialis squatarola*), non-breeding*
- Knot (*Calidris canutus*), non-breeding
- Lapwing (*Vanellus vanellus*), non-breeding*
- Long-tailed duck (*Clangula hyemalis*), non-breeding*
- Mallard (*Anas platyrhynchos*), non-breeding*
- Oystercatcher (*Haematopus ostralegus*), non-breeding*
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Red-breasted merganser (*Mergus serrator*), non-breeding*
- Redshank (*Tringa totanus*), non-breeding
- Red-throated diver (*Gavia stellata*), non-breeding
- Ringed plover (*Charadrius hiaticula*), non-breeding*
- Sandwich tern (*Sterna sandvicensis*), passage
- Scaup (*Aythya marila*), non-breeding*
- Shelduck (*Tadorna tadorna*), non-breeding
- Slavonian grebe (*Podiceps auritus*), non-breeding
- Turnstone (*Arenaria interpres*), non-breeding
- Velvet scoter (*Melanitta fusca*), non-breeding*
- Wigeon (*Anas penelope*), non-breeding*

- Waterfowl assemblage, non-breeding (* indicates assemblage qualifier only)

Firth of Tay and Eden Estuary SPA

- Bar-tailed godwit (*Limosa lapponica*), non-breeding
- Common scoter (*Melanitta nigra*), non-breeding*
- Cormorant (*Phalacrocorax carbo*), non-breeding*
- Dunlin (*Calidris alpina alpina*), non-breeding*
- Eider (*Somateria mollissima*), non-breeding*
- Goldeneye (*Bucephala clangula*), non-breeding*
- Goosander (*Mergus merganser*), non-breeding*
- Grey plover (*Pluvialis squatarola*), non-breeding*
- Greylag goose (*Anser anser*), non-breeding
- Icelandic black-tailed godwit (*Limosa limosa islandica*), non-breeding
- Little tern (*Sternula albifrons*), breeding
- Long-tailed duck (*Clangula hyemalis*), non-breeding*
- Marsh harrier (*Circus aeruginosus*), breeding
- Oystercatcher (*Haematopus ostralegus*), non-breeding*
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Red-breasted merganser (*Mergus serrator*), non-breeding*
- Redshank (*Tringa totanus*), non-breeding
- Sanderling (*Calidris alba*), non-breeding*
- Shelduck (*Tadorna tadorna*), non-breeding
- Velvet scoter (*Melanitta fusca*), non-breeding*
- Waterfowl assemblage, non-breeding (*indicates assemblage qualifier only)

Flamborough and Filey Coast SPA

- Kittiwake (*Rissa tridactyla*), breeding
- Razorbill (*Alca torda*), breeding
- Guillemot (*Uria aalge*), breeding
- Gannet (*Morus bassanus*), breeding
- Fulmar (*Fulmarus glacialis*), breeding*
- Puffin (*Fratercula arctica*), breeding*
- Herring gull (*Larus argentatus*), breeding*
- Shag (*Phalacrocorax aristotelis*), breeding*
- Cormorant (*Phalacrocorax carbo*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Forth Islands SPA

- Arctic tern (*Sterna paradisaea*), breeding

- Common tern (*Sterna hirundo*), breeding
- Cormorant (*Phalacrocorax carbo*), breeding*
- Gannet (*Morus bassanus*), breeding
- Guillemot (*Uria aalge*), breeding*
- Herring gull (*Larus argentatus*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding*
- Lesser black-backed gull (*Larus fuscus*), breeding
- Puffin (*Fratercula arctica*), breeding
- Razorbill (*Alca torda*), breeding*
- Roseate tern (*Sterna dougallii*), breeding
- Sandwich tern (*Sterna sandvicensis*), breeding
- Shag (*Phalacrocorax aristotelis*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Foula SPA

- Arctic skua (*Stercorarius parasiticus*), breeding*
- Arctic tern (*Sterna paradisaea*), breeding
- Fulmar (*Fulmarus glacialis*), breeding*
- Great skua (*Stercorarius skua*), breeding
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Leach's petrel (*Oceanodroma leucorhoa*), breeding
- Puffin (*Fratercula arctica*), breeding
- Razorbill (*Alca torda*), breeding*
- Red-throated diver (*Gavia stellata*), breeding
- Shag (*Phalacrocorax aristotelis*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Fowlsheugh SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Guillemot (*Uria aalge*), breeding
- Herring gull (*Larus argentatus*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding
- Razorbill (*Alca torda*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Gladhouse Reservoir SPA

- Pink-footed goose (*Anser brachyrhynchus*), non-breeding

Greenlaw Moor SPA

- Pink-footed goose (*Anser brachyrhynchus*), non-breeding

Hermaness, Saxa Vord and Valla Field SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Gannet (*Morus bassana*), breeding
- Great skua (*Catharacta skua*), breeding
- Guillemot (*Uria aalge*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding*
- Puffin (*Fratercula arctica*), breeding
- Red-throated diver (*Gavia stellata*), breeding
- Shag (*Phalacrocorax aristotelis*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Holburn Lake and Moss SPA

- Greylag goose (*Anser anser*), non-breeding

Hoy SPA

- Arctic skua (*Stercorarius parasiticus*), breeding*
- Fulmar (*Fulmarus glacialis*), breeding*
- Great black-backed gull (*Larus marinus*), breeding*
- Great skua (*Catharacta skua*), breeding
- Guillemot (*Uria aalge*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding*
- Peregrine (*Falco peregrinus*), breeding
- Puffin (*Fratercula arctica*), breeding*
- Red-throated diver (*Gavia stellata*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Lindisfarne SPA

- Bar-tailed godwit (*Limosa lapponica*), non-breeding*
- Common scoter (*Melanitta nigra*), non-breeding*
- Dunlin (*Calidris alpina alpina*), non-breeding*
- Eider (*Somateria mollissima*), non-breeding*
- Golden plover (*Pluvialis apricaria*), non-breeding*
- Grey plover (*Pluvialis squatarola*), non-breeding*
- Greylag goose (*Anser anser*), non-breeding*
- Light-bellied brent goose (*Branta bernicla hrota*), non-breeding*
- Little tern (*Sterna albifrons*), breeding
- Long-tailed duck (*Clangula hyemalis*), non-breeding*
- Red-breasted merganser (*Mergus serrator*), non-breeding*
- Redshank (*Tringa totanus*), non-breeding*
- Ringed plover (*Charadrius hiaticula*), non-breeding*
- Roseate tern (*Sterna dougallii*), breeding
- Sanderling (*Calidris alba*), non-breeding*

- Shelduck (*Tadorna tadorna*), non-breeding*
- Whooper swan (*Cygnus cygnus*), non-breeding*
- Wigeon (*Anas penelope*), non-breeding*
- Waterbird assemblage, non-breeding (*indicates main feature and assemblage qualifier)

Loch Leven SPA

- Cormorant (*Phalacrocorax carbo*), non-breeding*
- Gadwall (*Anas strepera*), non-breeding*
- Goldeneye (*Bucephala clangula*), non-breeding*
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Pochard (*Aythya ferina*), non-breeding*
- Shoveler (*Anas clypeata*), non-breeding
- Teal (*Anas crecca*), non-breeding*
- Tufted duck (*Aythya fuligula*), non-breeding*
- Whooper swan (*Cygnus cygnus*), non-breeding
- Waterfowl assemblage, non-breeding (* indicates assemblage qualifier only)

Loch of Kinnordy SPA

- Greylag goose (*Anser anser*), non-breeding
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding

Montrose Basin SPA

- Dunlin (*Calidris alpina alpina*), non-breeding*
- Eider (*Somateria mollissima*), non-breeding*
- Greylag goose (*Anser anser*), non-breeding
- Knot (*Calidris canutus*), non-breeding*
- Oystercatcher (*Haematopus ostralegus*), non-breeding*
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Redshank (*Tringa totanus*), non-breeding
- Shelduck (*Tadorna tadorna*), non-breeding*
- Wigeon (*Anas penelope*), non-breeding*
- Waterfowl assemblage, non-breeding (* indicates assemblage qualifier only)

North Caithness Cliffs SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Peregrine (*Falco peregrinus*), breeding
- Puffin (*Fratercula arctica*), breeding*

- Razorbill (*Alca torda*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

North Rona and Sula Sgeir SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Gannet (*Morus bassanus*), breeding
- Great black-backed gull (*Larus marinus*), breeding*
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Leach's petrel (*Oceanodroma leucorhoa*), breeding
- Puffin (*Fratercula arctica*), breeding*
- Razorbill (*Alca torda*), breeding*
- Storm petrel (*Hydrobates pelagicus*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Northumbria Coast SPA

- Arctic tern (*Sterna paradisaea*), breeding
- Little tern (*Sterna albifrons*), breeding
- Purple sandpiper (*Calidris maritima*), non-breeding
- Turnstone (*Arenaria interpres*), non-breeding

Noss SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Gannet (*Morus bassanus*), breeding
- Great skua (*Catharacta skua*), breeding
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Puffin (*Fratercula arctica*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

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

- Arctic tern (*Sterna paradisaea*), breeding
- Black-headed gull (*Chroicocephalus ridibundus*), non-breeding*
- Common gull (*Larus canus*), non-breeding*
- Common scoter (*Melanitta nigra*), non-breeding
- Common tern (*Sterna hirundo*), breeding
- Eider (*Somateria mollissima*), non-breeding
- Gannet (*Morus bassanus*), breeding
- Goldeneye (*Bucephala clangula*), non-breeding
- Guillemot (*Uria aalge*), breeding* and non-breeding
- Herring gull (*Larus argentatus*), breeding* and non-breeding*
- Kittiwake (*Rissa tridactyla*), breeding* and non-breeding*

- Little gull (*Hydrocoloeus minutus*), non-breeding*
- Long-tailed duck (*Clangula hyemalis*), non-breeding
- Manx shearwater (*Puffinus puffinus*), breeding
- Puffin (*Fratercula arctica*), breeding*
- Razorbill (*Alca torda*), non-breeding
- Red-breasted merganser (*Mergus serrator*), non-breeding
- Red-throated diver (*Gavia stellata*), non-breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)
- Seabird assemblage, non-breeding (* indicates assemblage qualifier only)
- Shag (*Phalacrocorax aristotelis*), breeding and non-breeding*
- Slavonian grebe (*Podiceps auritus*), non-breeding
- Velvet scoter (*Melanitta fusca*), non-breeding
- Waterfowl assemblage, non-breeding (* indicates assemblage qualifier only)

Slamannan Plateau SPA

- Taiga bean goose (*Anser fabalis fabalis*), non-breeding

South Tayside Goose Roosts SPA

- Greylag goose (*Anser anser*), non-breeding
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Wigeon (*Anas penelope*), breeding
- Waterfowl assemblage, non-breeding

St Abb's Head to Fast Castle SPA

- Guillemot (*Uria aalge*), breeding*
- Herring gull (*Larus argentatus*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding*
- Razorbill (*Alca torda*), breeding*
- Shag (*Phalacrocorax aristotelis*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Sule Skerry and Sule Stack SPA

- Gannet (*Morus bassanus*), breeding
- Guillemot (*Uria aalge*), breeding*
- Leach's petrel (*Oceanodroma leucorhoa*), breeding
- Puffin (*Fratercula arctica*), breeding
- Shag (*Phalacrocorax aristotelis*), breeding*
- Storm petrel (*Hydrobates pelagicus*), breeding
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Troup, Pennan and Lion's Heads SPA

- Fulmar (*Fulmarus glacialis*), breeding*
- Guillemot (*Uria aalge*), breeding
- Herring gull (*Larus argentatus*), breeding*
- Kittiwake (*Rissa tridactyla*), breeding
- Razorbill (*Alca torda*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Westwater SPA

- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Waterfowl assemblage, non-breeding

West Westray SPA

- Arctic skua (*Stercorarius parasiticus*), breeding*
- Arctic tern (*Sterna paradisaea*), breeding
- Fulmar (*Fulmarus glacialis*), breeding*
- Guillemot (*Uria aalge*), breeding
- Kittiwake (*Rissa tridactyla*), breeding*
- Razorbill (*Alca torda*), breeding*
- Seabird assemblage, breeding (* indicates assemblage qualifier only)

Ythan Estuary, Sands of Forvie and Meikle Loch SPA

- Common tern (*Sterna hirundo*), breeding
- Eider (*Somateria mollissima*), non-breeding
- Lapwing (*Vanellus vanellus*), non-breeding
- Little tern (*Sternula albifrons*), breeding
- Pink-footed goose (*Anser brachyrhynchus*), non-breeding
- Redshank (*Tringa totanus*), non-breeding
- Sandwich tern (*Sterna sandvicensis*), breeding
- Waterfowl assemblage, non-breeding

Table 10: Conservation objectives

Berwickshire and North Northumberland Coast SAC

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features").

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to

achieving the Favourable Conservation Status of its qualifying features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of the qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of the qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of each of the qualifying species
- the distribution of qualifying species within the site

Firth of Tay and Eden Estuary SAC

For Estuaries, Intertidal Mudflats and Sandflats; and Subtidal Sandbanks:

To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying habitats that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

For Harbour (or Common) Seal:

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

- No significant disturbance of the species

Isle of May SAC

For Reefs:

To avoid deterioration of the qualifying habitat (listed above) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying habitat that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

For Grey Seal:

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Moray Firth SAC

1. To ensure that the qualifying features of Moray Firth SAC are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.

2. To ensure that the integrity of Moray Firth SAC is maintained or restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature.

For Subtidal Sandbanks:

- 2a. Extent and distribution of the habitat within the site.
- 2b. Structure and function of the habitat and the supporting environment on which it relies.
- 2c. Distribution and viability of typical species of the habitat.

For Bottlenose Dolphin:

- 2a. The population of bottlenose dolphin is a viable component of the site.
- 2b. The distribution of bottlenose dolphin throughout the site is maintained by avoiding significant disturbance.
- 2c. The supporting habitats and processes relevant to bottlenose dolphin and the availability of prey for bottlenose dolphin are maintained.

Southern North Sea SAC

Ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining favourable conservation status for harbour porpoise in UK waters. In the context of natural change, this will be achieved by ensuring that:

- Harbour porpoise is a viable component of the site.
- There is no significant disturbance of the species.
- The condition of supporting habitats and processes, and the availability of prey is maintained.

Cameron Reservoir SPA, Din Moss – Hoselaw Loch SPA, Fala Flow SPA, Firth of Forth SPA, Firth of Tay and Eden Estuary SAC, Fowlsheugh SPA, Gladhouse Reservoir SPA, Greenlaw Moor SPA, Hermaness, Saxa Vord and Valla Field SPA, Holburn Lake and Moss SPA, Loch Leven SPA, Loch of Kinnordy SPA, Montrose Basin SPA, Hoy SPA, Slamannan Plateau, South Tayside Goose Roosts SPA, Sule Skerry and Sule Stack SPA, Copinsay SPA, Fair Isle SPA, Fetlar SPA, North Rona and Sula Sgeir SPA, Noss SPA, Buchan Ness to Collieston Coast SPA, East Caithness Cliffs SPA, Forth Islands SPA, North Caithness Cliffs SPA, St Abb's Head to Fast Castle SPA, Troup, Pennan and Lion's Heads SPA, West Westray SPA, Westwater SPA, Ythan Estuary, Sands of Forvie and Meikle Loch SPA

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Coquet Island SPA and Flamborough and Filey Coast SPA

Ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The populations of each of the qualifying features
- The distribution of qualifying features within the site

Farne Islands SPA, Lindisfarne SPA, Northumbria Coast SPA

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and
- The distribution of the qualifying features within the site.

Foula SPA (draft conservation objectives)

1. To ensure that the qualifying features of Foula SPA and the Seas off Foula SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.

2. To ensure that the integrity of Foula SPA and the Seas off Foula SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:

2a. The populations of the qualifying features are viable components of Foula SPA and Seas off Foula SPA.

2b. The distributions of the qualifying features throughout Foula SPA and Seas off Foula SPA are maintained by avoiding significant disturbance of the species.

2c. The supporting habitats and processes relevant to qualifying features and their prey/food resources are maintained, or where appropriate restored, at Foula SPA and Seas off Foula SPA.

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

1. To ensure that the qualifying features of the Outer Firth of Forth and St Andrews Bay Complex SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.

2. To ensure that the integrity of the Outer Firth of Forth and St Andrews Bay Complex SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:

2a. The populations of qualifying features are viable components of the site.

2b. The distributions of the qualifying features throughout the site are maintained by avoiding significant disturbance of the species.

2c. The supporting habitats and processes relevant to the qualifying features and their prey/food resources are maintained, or where appropriate restored, at the Outer Firth of Forth and St Andrews Bay Complex SPA.

SECTION 3: ASSESSMENT IN RELATION TO THE HABITATS REGULATIONS

7 Requirement for AA

7.1 *Is the project directly connected with or necessary to the conservation management of the site(s)?*

7.1.1 The project is not directly connected with or necessary to the conservation management of the sites.

7.2 *Is the project likely to have a significant effect on the qualifying interest(s)?*

7.2.1 In its response, dated 21 February 2023, NatureScot advised that Berwick Bank Wind Farm is likely to have a significant effect on the following qualifying interests of the following SACs as a result of disturbance through noise generating activities associated with Berwick Bank Wind Farm:

Berwickshire and North Northumberland Coast SAC

- Grey seal

Firth of Tay and Eden Estuary SAC

- Harbour seal

Isle of May SAC

- Grey seal

Moray Firth SAC

- Bottlenose dolphin

7.2.2 In its response dated 21 February 2023, NatureScot advised that it agreed with the conclusions of the RIAA regarding impacts to the habitat qualifying interests of the Berwickshire and North Northumberland Coast SAC. The RIAA concluded that Berwick Bank Wind Farm is likely to have a significant effect on the mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, reefs and submerged or partially submerged sea caves of the Berwickshire and North Northumberland Coast SAC as a result of increases to suspended sediment concentrations and sediment deposition.

7.2.3 In addition, in its response dated 18 March 2024, NatureScot advised that it agreed with the table 3.1 of part 3 of the RIAA that Berwick Bank Wind Farm is likely to have a significant effect on the following SPAs and qualifying interests as a result of displacement effects or combined displacement and collision mortality:

Buchan Ness to Collieston Coast SPA

- Kittiwake (breeding)*
- Guillemot (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Cameron Reservoir SPA

- Pink-footed goose (non-breeding)

Copinsay SPA

- Kittiwake (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Din Moss – Hoselaw Loch SPA

- Pink-footed goose (non-breeding)
- Greylag goose (non-breeding)

East Caithness Cliffs SPA

- Kittiwake (breeding)
- Razorbill (breeding)
- Seabird assemblage (breeding)

Fair Isle SPA

- Gannet (breeding)*
- Seabird assemblage (breeding) (* indicated assemblage qualifier only)

Fala Flow SPA

- Pink-footed goose (non-breeding)

Fetlar SPA

- Great skua (breeding)
- Seabird assemblage (breeding)

Firth of Forth SPA

- Bar-tailed godwit (non-breeding)
- Common scoter (non-breeding)*
- Cormorant (non-breeding)*
- Curlew (non-breeding)*
- Dunlin (non-breeding)*
- Eider (non-breeding)*
- Golden plover (non-breeding)
- Goldeneye (non-breeding)*
- Great crested grebe (non-breeding)*
- Grey plover (non-breeding)*
- Knot (non-breeding)
- Lapwing (non-breeding)*
- Long-tailed duck (non-breeding)*
- Mallard (non-breeding)*
- Oystercatcher (non-breeding)*
- Pink-footed goose (non-breeding)
- Red-breasted merganser (non-breeding)*
- Red-throated diver (non-breeding)
- Redshank (non-breeding)
- Ringed plover (non-breeding)*
- Sandwich tern (passage)
- Scaup (non-breeding)*
- Shelduck (non-breeding)
- Slavonian grebe (non-breeding)
- Turnstone (non-breeding)
- Velvet scoter (non-breeding)*

- Wigeon (non-breeding)*
- Waterfowl assemblage (non-breeding) (* indicates assemblage qualifier only)

Firth of Tay and Eden Estuary SPA

- Bar-tailed godwit (non-breeding)
- Common scoter (non-breeding)*
- Cormorant (non-breeding)*
- Dunlin (non-breeding)*
- Eider (non-breeding)*
- Goldeneye (non-breeding)*
- Goosander (non-breeding)*
- Grey plover (non-breeding)*
- Greylag goose (non-breeding)
- Icelandic black-tailed godwit (non-breeding)
- Long-tailed duck (non-breeding)*
- Oystercatcher (non-breeding)*
- Pink-footed goose (non-breeding)
- Red-breasted merganser (non-breeding)*
- Redshank (non-breeding)
- Sanderling (non-breeding)*
- Shelduck (non-breeding)
- Velvet scoter (non-breeding)*
- Waterfowl assemblage (non-breeding) (*indicates assemblage qualifier only)

Forth Islands SPA

- Kittiwake (breeding)*
- Herring gull (breeding)*
- Lesser black-backed gull (breeding)
- Common tern (breeding)
- Artic tern (breeding)
- Guillemot (breeding)*
- Razorbill (breeding)*
- Puffin (breeding)
- Gannet (breeding)
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Foula SPA

- Great skua (breeding)
- Seabird assemblage (breeding)

Fowlsheugh SPA

- Kittiwake (breeding)
- Herring gull (breeding)*
- Guillemot (breeding)
- Razorbill (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Gladhouse Reservoir SPA

- Pink-footed goose (non-breeding)

Greenlaw Moor SPA

- Pink-footed goose (non-breeding)

Hermaness, Saxa Vord and Valla Field SPA

- Gannet (breeding)
- Seabird assemblage (breeding)

Hoy SPA

- Kittiwake (breeding)*
- Great skua (breeding)
- Puffin (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Loch Leven SPA

- Cormorant (non-breeding)*
- Gadwall (non-breeding)*
- Goldeneye (non-breeding)*
- Pink-footed goose (non-breeding)
- Pochard (non-breeding)*
- Shoveler (non-breeding)
- Teal (non-breeding)*
- Tufted duck (non-breeding)*
- Whooper swan (non-breeding)
- Waterfowl assemblage (non-breeding) (* indicates assemblage qualifier only)

Loch of Kinnordy SPA

- Pink-footed goose (non-breeding)
- Greylag goose (non-breeding)

Montrose Basin SPA

- Dunlin (non-breeding)*

- Eider (non-breeding)*
- Greylag goose (non-breeding)
- Knot (non-breeding)*
- Oystercatcher (non-breeding)*
- Pink-footed goose (non-breeding)*
- Redshank (non-breeding)
- Shelduck (non-breeding)*
- Wigeon (non-breeding)* (* indicates assemblage qualifier only)

North Caithness Cliffs SPA

- Kittiwake (breeding)*
- Puffin (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

North Rona and Sula Sgeir SPA

- Gannet (breeding)
- Seabird assemblage (breeding)

Noss SPA

- Gannet (breeding)
- Seabird assemblage (breeding)

OFFSAB SPA

Non-breeding Waterfowl

- Eider
- Velvet scoter
- Long-tailed duck
- Goldeneye
- Red-breasted merganser
- Red-throated diver
- Slavonian grebe
- Waterfowl assemblage

Breeding Seabirds

- Kittiwake
- Herring gull
- Common tern
- Arctic tern
- Guillemot
- Puffin
- Manx shearwater

- Gannet
- Shag
- Seabird assemblage

Non-breeding Seabirds

- Kittiwake
- Black-headed gull
- Little gull
- Common gull
- Herring gull
- Guillemot
- Razorbill
- Shag
- Seabird assemblage

Slamannan Plateau SPA

- Taiga bean goose (non-breeding)

South Tayside Goose Roosts SPA

- Pink-footed goose (non-breeding)
- Greylag goose (non-breeding)
- Wigeon (non-breeding)
- Waterfowl assemblage (non-breeding)

St Abb's Head to Fast Castle SPA

- Kittiwake (breeding)*
- Herring gull (breeding)*
- Guillemot (breeding)*
- Razorbill (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Sule Skerry and Sule Stack SPA

- Gannet (breeding)
- Seabird assemblage (breeding)

Troup Pennan and Lion's Heads SPA

- Kittiwake (breeding)*
- Guillemot (breeding)
- Razorbill (breeding)*
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Westwater SPA

- Pink-footed goose (non-breeding)
- Waterfowl assemblage (non-breeding)

West Westray SPA

- Kittiwake (breeding)
- Seabird assemblage (breeding)

Ythan Estuary, Sands of Forvie and Meikle Loch SPA

- Eider (non-breeding)
- Lapwing (non-breeding)
- Pink-footed goose (non-breeding)
- Redshank (non-breeding)
- Waterfowl assemblage (non-breeding)

7.2.4 In its response, dated 6 April 2023, Natural England advised that it agreed with the RIAA that the Berwick Bank Wind Farm is likely to have a significant effect on the following qualifying interests of the following SACs and SPAs for the reasons given above for the Scottish sites:

Southern North Sea SAC

- Harbour porpoise

Coquet Island SPA

- Kittiwake (breeding) *
- Lesser black-backed gull (breeding)*
- Puffin (breeding) *
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Farne Islands SPA

- Kittiwake (breeding)*
- Guillemot (breeding)
- Puffin (breeding) *
- Lesser black-backed gull (breeding) *
- Herring gull (breeding) *
- Razorbill (breeding) *
- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

Flamborough and Filey Coast SPA

- Kittiwake (breeding)
- Razorbill (breeding)
- Puffin (breeding)*
- Gannet (breeding)
- Guillemot (breeding)†

- Seabird assemblage (breeding) (* indicates assemblage qualifier only)

†Natural England consultation response 7 May 2025

Holburn Lake and Moss SPA

- Greylag goose (non-breeding)

Lindisfarne SPA

- Bar-tailed godwit (non-breeding)
- Common scoter (non-breeding)
- Dunlin (non-breeding)
- Eider (non-breeding)
- Golden plover (non-breeding)
- Grey plover (non-breeding)
- Greylag goose (non-breeding)
- Light-bellied brent goose (non-breeding)
- Long-tailed duck (non-breeding)
- Red-breasted merganser (non-breeding)
- Redshank (non-breeding)
- Ringed plover (non-breeding)
- Sanderling (non-breeding)
- Shelduck (non-breeding)
- Whooper swan (non-breeding)
- Wigeon (non-breeding)
- Waterfowl assemblage (non-breeding)

Northumbria Coast SPA

- Purple sandpiper (non-breeding)
- Turnstone (non-breeding)

7.2.5 The Scottish Ministers agree with NatureScot and Natural England's advice and have therefore carried out this AA.

SECTION 4: APPROPRIATE ASSESSMENT OF THE IMPLICATIONS FOR SPAS IN VIEW OF THE SITES CONSERVATION OBJECTIVES

8 Background

8.1.1 The AA aligns with the conclusion of NatureScot that there are high levels of impact from the project, particularly for kittiwake, guillemot, razorbill, puffin, and gannet on several Scottish SPAs both alone and in combination with other

plans or projects. The impacts are of a magnitude greater than those seen previously in offshore wind assessments due to the high number of birds present in the Berwick Bank Wind Farm area.

- 8.1.2 The AA has considered the application documentation, the contextual supporting documents e.g., those provided during the 'Roadmap' process, the Scoping Opinion and consultee representations, particularly those of NatureScot, Natural England, RSPB Scotland and advice from MD-SEDD (previously Marine Scotland Science ("MSS")). The Scoping Approach describes a general assessment methodology undertaken by BBWFL which broadly follows recommendations made in the Scoping Opinion. The Scoping Approach collectively involves a general methodology that varies in parameterisation of displacement mortality rates, with this variation reported as Scoping Approach A and Scoping Approach B (see section 9.2.1 for more detail). The AA relies upon evaluation of the general Scoping Approach (A and B) and subsequent outputs from the assessment, however conclusions are delivered with consideration of Scoping Approach B and the associated metrics. Counterfactual of Population Size ("CPS"), which is the ratio of the predicted impacted population size to that of the predicted population size in the absence of the Berwick Bank Wind Farm, at the end of the 35 year operating period e.g. if the CPS returned a value of 0.5, that would indicate a 50% reduction in the population size predicted as a result of the Berwick Bank Wind Farm. The Counterfactual Growth Rate ("CGR"), the ratio of the growth rate of an impacted versus unimpacted population where a value of 0.5 indicates a 50% reduction in growth rate, is also presented and provides additional context.
- 8.1.3 BBWFL presented its Developer Approach for assessment in the application documentation, indicating it considers aspects of the general Scoping Approach to have varied from similar assessments and in its opinion to be overly precautionary. Multiple approaches which deviate from the general Scoping Approach are presented in technical reports but only the methodology and results presented in the RIAA termed the 'Developer Approach' have been considered in the AA alongside the Scoping Approach. The advice from NatureScot and MD-SEDD was that the maximum monthly input densities recommended during the scoping process and used in Scoping Approach A and B collision risk modelling are appropriate. During the scoping process it was considered by NatureScot that, given two surveys were undertaken per month, the maximum value for that month should be used. MD-SEDD considered that use of mean densities applied by BBWFL in the Developer Approach would not adequately account for variation in the baseline densities given the use of the deterministic model (see section 9.3.1) which does not provide the same measure of confidence as the stochastic collision method. The AA also considers the displacement metrics recommended during the

scoping process and subsequently presented in Scoping Approaches A and B to be the appropriate metric of assessment. This approach provides a range of values to inform conclusions, of particular use in the context of species where HPAI or other mass mortality population impacts are likely to be a relevant consideration, but their impacts are uncertain.

9 Information on approaches and methods used to inform the AA

9.1 This section summarises key components of the assessment methodologies and any variation in the approach taken by BBWFL from that advised, and the implications of this variation. NatureScot consider the Scoping Approaches of the application predominantly to be in keeping with recommendations made during the Scoping and Roadmap processes. The AA relies upon the Scoping Approach (A and B) presented in the application documentation. This approach applies the best available scientific evidence, methods and guidance available during assessment, and a proportionate level of precaution. For example, methodologically in the application of maximum densities when using the deterministic population model, and given the level of impacts in the context of conservation objectives and the HPAI outbreaks. Where conclusions of AEOSI or unable to conclude no AEOSI are made, the values of Scoping Approach B are the concluded values of impact. This higher impact estimate originates from parameters and approaches recommended in the Scoping Opinion and captures appropriate precaution in concluding on predicted impacts. Scoping Approach A and B adhere to advice and recommendations provided to BBWFL by NatureScot and Scottish Ministers. More detail on this evaluation is given below.

9.2 Developer Approach and Scoping Approach A and B

9.2.1 In the Scoping Opinion (4 February 2022), BBWFL was advised on the approach to use when undertaking the ornithological assessment. BBWFL considered some elements of the Scoping Opinion to be overly precautionary and so presented a dual assessment. The applications included an approach following the Scoping Opinion and another following an approach provided by BBWFL (the 'Developer Approach'). Both 'Scoping Approach A' and 'Scoping Approach B' adhered to the Scoping Opinion, where Scoping Approach A used the lower recommended displacement mortality rate for assessing displacement effects and Scoping Approach B used the higher recommended displacement mortality rate. The Developer Approach generally followed the Scoping Opinion, but with different displacement and mortality rates for assessing displacement (in the Scoping Opinion, two different displacement mortality rates were recommended, e.g. 3% and 5% for auks). The Developer Approach also used mean rather than the maximum monthly density estimates in collision risk modelling advised during scoping (see section 5.4 of the [RIAA](#)). The AA considers that the methods and best evidence available for the

assessment aligns with the Scoping Opinion. The AA supports the rationale for using maximum monthly densities in this assessment. The AA uses the recommended displacement and mortality rates used in Scoping Approach B because this reflects the best available evidence, appropriately accounts for the uncertainties that exist around the mortality rates that might result from displacement from offshore wind farms, and takes a suitably precautionary approach to current uncertainties in the evidence base. Therefore the AA relies on Scoping Approach B throughout.

9.3 Collision risk model used

- 9.3.1 Current NatureScot guidance, [NatureScot Guidance Note 7: Guidance to support Offshore Wind Applications: Marine Ornithology - Advice for assessing collision risk of marine birds](#) advises use of the stochastic CRM (“sCRM”) (Caneco et al. 2022) as well as presenting results from the deterministic model. This guidance, published in January 2023, varies from that recommended in the Scoping Opinion, whereby the deterministic model was recommended as the most appropriate approach to use at the time. At the scoping stage there were no SNCB endorsed avoidance rates to apply to the stochastic model, (see Cook 2021) and therefore any stochastic modelling undertaken by BBWFL was to be presented for comparison only.
- 9.3.2 Natural England guidance also advises use of the sCRM, but in its advice of 7 May 2025, stated that it is content with use of the deterministic model as this was recommended at the Scoping stage.
- 9.3.3 The AA relies upon the deterministic collision risk model, following advice in the Scoping Opinion. BBWFL also provides sCRM modelling outputs, using Bowgen & Cook (2018) avoidance rates and mean-monthly estimates for context. These were not relied upon in the AA because the avoidance rates and seabird densities used by BBWFL in this approach are not those advised by NatureScot. The principal consideration of the AA is therefore the deterministic CRM as presented in Scoping Approach B and Scoping Approach A, see section 9.5.

9.4 Density estimates for use in collision modelling

- 9.4.1 The Scoping Opinion advised use of monthly maximum seabird densities of flying birds within the Berwick Bank Wind Farm Array area (Table 3.4 of the [Ornithology Collision Risk Modelling Technical Report](#)). BBWFL used maximum seabird densities in CRM as part of the general Scoping Approach but used mean seabird densities in its Developer Approach (Table 3.3 of the [Ornithology Collision Risk Modelling Technical Report](#)). BBWFL points to guidance on the use of CRM that suggests mean monthly densities should be

used (Band 2012). BBWFL also notes that mean monthly densities have been used in other recent UK offshore windfarm assessments.

- 9.4.2 Following the issuing of the Scoping Opinion, BBWFL sought clarification on the reasons for the use of maximum densities (email from BBWFL to Scottish Ministers on 9 February 2022). NatureScot responded on 25 February 2022 highlighting that, *'Surveys were flown on a monthly basis across the two-year digital aerial campaign (i.e. Year 1: 2019-2020 and Year 2: 2020-2021 equating to 25 surveys within a 25-month period) such that for each month allocated e.g. July, there will be a density figure derived from each of the two surveys flown for that month, across the two years e.g. Surveys from: 23/07/2019 and 12/07/2020.*

We advised use of the maximum density value from the two allocated surveys. We advise this approach as there are two surveys allocated per month - where a monthly-mean has been used previously this has addressed multiple surveys per month.'

- 9.4.3 MD-SEDD responded on 1 March 2022, setting out its change in position on which densities to use, having previously endorsed mean densities. Mean densities were recommended in the first instance with the use of the sCRM tool. However emerging evidence from Cook (2021) meant that the sCRM could not be used without agreed avoidance rates.
- 9.4.4 In its response on 31 March 2023, NatureScot confirmed this approach, 'As per the Scoping Approach[sic], general, maximum monthly densities were required to address the variation in baseline densities particularly in light of gaps in survey coverage'.
- 9.4.5 The AA relies upon the use of maximum monthly densities as the appropriate metric for use in the deterministic modelling, recommended during the scoping stage. This conclusion is based on the inability of the deterministic collision risk model to capture variation in the baseline and as such precaution remains with the use of maximum densities, following the general Scoping Approach.

9.5 Avoidance rates

- 9.5.1 Avoidance rates recommended in the Scoping Opinion from the *Joint Response from the SNCBs to the Marine Scotland Science Avoidance Rate Review guidance note (2014)* for use in the deterministic CRM (Band 2012) model were used in the Scoping and Developer Approaches presented in the RIAA (see Table 3.6 of the [Ornithology Collision Risk Modelling Technical Report](#)). An avoidance rate of 0.980 was presented by BBWFL as a comparison for gannet following the RSPB Scotland's consultation response.

Additionally, avoidance rates from the Bowgen & Cook (2018) report were also used and presented by BBWFL in additional deterministic and stochastic CRM models (see Table 3.7 of the [Ornithology Collision Risk Modelling Technical Report](#)).

- 9.5.2 After the Scoping Opinion was issued, the recommended avoidance rates in the interim online guidance notes were changed NatureScot (2023), as a result of additional evidence becoming available. These rates are different to the SNCB (2014) avoidance rates (and the Bowgen & Cook 2018 rates). Given assessment methodologies change with emerging evidence, and the need for a consistent approach as the application is finalised, the AA acknowledges that both the general Scoping Approach and the Developer Approach presented in the applications do not reflect current guidance. It is not unusual for guidance to change on timelines that are not synchronous with the application process. However, in reaching its conclusions the AA has taken into consideration the potential for the interim NatureScot (2023) avoidance rates and the recently published joint SNCB avoidance rates (JNCC 2024) to change the estimated collision estimates, and resultant population level impacts. The NatureScot (2023) avoidance rates for kittiwake and gannet both increased from 0.989 to 0.992, and the subsequent joint SNCB avoidance rates (JNCC 2024) changed from 0.992 to 0.9923 potentially reducing estimated collision mortalities. However, this would not change the conclusions of the AA in respect of AEOSI.
- 9.5.3 The AA relies on the Scoping Opinion avoidance rates presented in Scoping Approaches A and B and the Developer Approach presented in the RIAA as the best available evidence see Tables 11 and 12.
- 9.5.4 In its response (6 April 2023), Natural England indicated that the avoidance rates it recommends for kittiwake and gannet were expected to change, with interim guidance in place. Natural England notes that applying these avoidance rates could reduce the collision impacts predicted for kittiwake and gannet.

Table 11: Summary of the collision risk models and parameters used in the Scoping Approach (the same for A and B) and Developer Approach and presented in the RIAA. The deterministic Band model was used in both approaches.

CRM	Scoping Opinion (Feb 2022)	Scoping Approach	Developer Approach
Input density	Max monthly	Max monthly	Mean monthly
Model	Band CRM	Band CRM	Band CRM
Option	Option 2 (basic)	Option 2 (basic)	Option 2 (basic)
Avoidance rate	Kittiwake and gannet: 0.989	Kittiwake and gannet: 0.989	Kittiwake and gannet: 0.989

9.6 Displacement and mortality rates

Table 12: Rates used for displacement assessment for the Scoping Approach A (lower value), B (higher value) and Developer Approach.

Species	Displacement rate	Mortality rate – Breeding season	Mortality rate – Non-breeding season
Scoping Approach			
Guillemot & Razorbill	60%	3% & 5%	1% & 3%
Puffin	60%	3% & 5%	Not assessed
Gannet	70%	1% & 3%	1% & 3%
Kittiwake	30%	1% & 3%	1% & 3%
Developer Approach			
Guillemot & Razorbill	50%	1%	1%
Puffin	50%	1%	Not assessed
Gannet	70%	1%	1%
Kittiwake	30%	2%	Not assessed

9.6.1 The general Scoping Approach used displacement rates of 60%, 70% and 30% for auks (guillemot, razorbill and puffin), gannets and kittiwakes, respectively. Mortality rates of 1% and 3% were assumed for all species, with 5% also assumed for auks during the breeding season. The lower value of mortality rates informed the Scoping Approach A, while the upper value informed Scoping Approach B (see Table 12). The Developer Approach used similar displacement rates (though 50% instead of 60% for auks) but lower mortality rates of 1% for all species except kittiwake (2%) (see Table 3.4, Appendix 11.4: [Ornithology Displacement Technical Report](#)). Note kittiwake were not assessed for displacement in the non-breeding season in the Developer Approach. Higher mortality rates were recommended by NatureScot and MD-SEDD during the scoping process as SeabORD, a tool which utilises biological data to estimate the consequences of displacement and barrier effects from windfarms on seabird productivity and survival rates using individual based models (Searle et al. 2018), suggested mortality due to displacement may be higher than 1% and as such higher rates might be appropriate.

9.6.2 BBWFL raised a concern that macro-avoidance might be overlooked in the assessment presented for gannet and advocate the application of 70% macro avoidance, citing a publication from Natural England as its justification. The AA considers that this publication is based on several studies in which breeding season behavioural responses could not easily be identified in a consistent way, meaning that it could not be concluded that it was appropriate

to apply macro-avoidance for breeding gannet. Further, the data from this publication were predominantly gathered beyond the northern North Sea. BBWFL refers to Cook (2021) as acknowledging the potential for double counting of collision and displacement effects, with the same individuals experiencing both collision and displacement mortality. Searle et al. (2022) also acknowledge the potential for effects to be over-inflated due to double counting but also suggest that unless the effects from OWFs are very large, the likelihood of double counting occurring is extremely low. Searle et al. also highlight that in practice, displacement and collision are very unlikely to be independent – because birds that are susceptible to displacement cannot, by definition, be simultaneously susceptible to collision. We might expect an inverse relationship between the probability of collision and the probability of displacement, and this is likely to further reduce the rate of double counting.

- 9.6.3 The most recent evidence for considering macro-avoidance for gannet in the UK by Natural England (Pavat et al. 2023) does recommend correcting for macro-avoidance in assessments but it is unclear how applicable that evidence is for breeding birds in the northern North Sea. Further evidence is also available from tagged gannets from the Forth Islands SPA showing that behaviour changes with breeding stage and status (Lane et al, 2020). The AA therefore considers that the limitations of the evidence are such that it is not appropriate to apply a macro-avoidance correction, and that the [current joint SNCB guidance \(2022\)](#) should be followed and effects be presented as additive unless sufficient additional evidence to support an alternative approach becomes available.
- 9.6.4 Displacement mortalities are summarised in Table 4.23, Appendix 11.4: [Ornithology Displacement Technical Report](#). BBWFL presented reasons for the use of different mortality rates and displacement rates than those advised in the Scoping Opinion in Appendix 11.4, Annex G: [Evidence and Justification for the Developer Approach](#). However, the AA relies upon the general Scoping Approach displacement rates as they better capture uncertainty of displacement impacts. Comparison of outputs from the matrix approach and SeabORD provides an informative opportunity to consider the biological realism provided by SeabORD, and to interrogate assumptions and limitations in the model, providing additional context when considering displacement effects. The displacement matrix essentially incorporates the same biological uncertainty without any avenue for transparency or ability to test the assumptions and limitations of those biological processes. Natural England notes in its response of 6 April 2023 that it takes a range-based approach to considering displacement impacts, given the limited and contradictory evidence base regarding displacement levels and no empirical information on mortality consequences. The upper limit of the ranges advised for guillemot, razorbill and puffin by Natural England are higher than the upper limit of the

ranges of displacement and mortality rates used in the Scoping Approaches. The AA considers the mortality rates used in the Scoping Approaches to be more applicable to Scottish species and they are relied upon in the assessment.

- 9.6.5 The developer raises a concern that there is limited evidence for consideration of non-breeding kittiwake in displacement assessments. Various studies highlight evidence of displacement of kittiwakes (e.g., Peschko et al 2020, O'Hanlon et al 2023). Crucially, they have been found to show mixed responses - the consequences of the response is likely to vary depending on timing i.e. when centrally placed during the breeding season, which may impact breeding success or potentially during dispersal or migratory movements in non-breeding stages which could impact survival. A key aspect of this is that we are unclear how kittiwake might respond. As such, the AA considers that there is a mixed body of evidence on responses of kittiwake to offshore wind farms, such that some are displaced, and some are not, resulting in both risks of displacement and collision needing assessment across all seasons. The AA therefore considers both collision and displacement effects.
- 9.6.6 The AA relies upon the avoidance rates and the mortality rates set out in the Scoping Opinion and captured in Scoping Approaches A and B presented in the applications as the best available evidence for assessment. The AA does consider the likely reduction in collision mortality relative to updated guidance on avoidance rates for kittiwake and gannet. In the absence of an updated quantitative assessment, this reduction in collision risk was evaluated qualitatively and does not change the conclusions of the assessment in respect of AEOSI.

9.7 Additional consultee comments on methodology

Natural England

- 9.7.1 Natural England highlights in its response dated 6 April 2023 that in some respects its guidance on impact methodologies differs from that of NatureScot:
- Sabbatical rates- the assessment includes the exclusion of sabbatical birds, based on assumptions surrounding the percentage of non-breeding adults in each population. Natural England does not agree with the use of sabbatical rates for excluding sabbatical birds from assessment, nor does it consider the inclusion of sabbatical rates to be appropriate within the apportioning process. Natural England concludes that inclusion of the excluded birds would likely increase predicted impacts for kittiwake, guillemot, razorbill, gannet and puffin.
 - Stable Age apportioning- the assessment has apportioned birds to age classes using stable age structure calculations. Natural England does not

support the use of stable age structure in age apportioning due to uncertainty in immature survival rates and sabbatical rates mentioned above. Natural England advises that, where possible, site-specific ageing data (e.g. from Digital Aerial Surveys) be used to age-apportion birds. Where this data is not available, Natural England advises that all adult-type birds are apportioned as adults. Natural England concludes that following its approach would likely increase predicted impacts for kittiwake, guillemot, razorbill and puffin.

- Displacement rates- the displacement and mortality rates used in the assessment are not as high as the upper bounds of the range that Natural England advises for guillemot, razorbill or puffin (which is up to 10% mortality rate). Natural England notes that using upper range rates advised by Natural England would likely increase the predicted impacts for guillemot, razorbill and puffin.
- Construction displacement- the assessment has not considered displacement during construction or decommissioning. Natural England advises these times should be considered to be half the predicted impacts during operation for assessment. Natural England concludes that consideration of this would likely increase the predicted impacts on guillemot, razorbill, puffin and gannet.
- Displacement- Natural England notes kittiwake have been assessed for displacement impacts. Natural England does not currently advise kittiwake displacement assessment. Natural England notes that excluding displacement to kittiwake would likely reduce the predicted impacts to kittiwake.
- Population Viability Analysis- uncertainty in trends of kittiwake, guillemot, razorbill, gannet and puffin given ongoing impacts of HPAI. Natural England notes there is a need for a precautionary approach when interpreting PVA outputs and predicted population trends.
- Avoidance rates- interim guidance on forthcoming changes to avoidance rates for use in collision risk modelling. Natural England notes that forthcoming avoidance rates would likely reduce predicted impacts to gannet and kittiwake from collision.
- Apportioning- apportioning approaches vary between Natural England and NatureScot. Natural England notes that should the Natural England approach to apportion according to the Biologically Defined Minimum Population Size (“BDMPS”) method (Furness 2015) be applied there would be impacts to the non-breeding guillemot feature of Flamborough and Filey Coast SPA, meaning they cannot rule out AEOSI to guillemot in combination with other projects. Natural England concludes that the risk of in-combination AEOSI is greater for guillemot from the Farne Islands SPA.
- Displacement and puffin: no assessment of displacement has been undertaken for non-breeding puffin. Natural England would advise this be

undertaken and apportioned using BDMPs method. Natural England concludes that following its approach would likely increase predicted impacts on puffin.

- 9.7.2 Natural England highlights that it does not expect BBWFL to undertake a separate impact assessment based on its advice.

NatureScot

- 9.7.3 NatureScot, in its response of 31 March 2023, states it is important to consider the advice from both NatureScot and Natural England in the assessment, but that NatureScot guidance varies from that of Natural England. In NatureScot's opinion, the Natural England approach includes increased precaution through a range of methodological variations such as: inclusion of sabbaticals, use of stable age structure, assessing displacement during construction and differing displacement mortality rates. All of which, NatureScot concludes, could increase predicted impacts.
- 9.7.4 The AA considers Natural England's advice relative to those species and colonies in English waters and the variation in assessment guidance and subsequent precaution in the guidance from Natural England compared to NatureScot. The AA determines that the best available evidence and methodology for this application is detailed within the Scoping Approaches, which is used to conclude on those qualifying features of English SPAs (see sections 9.5 and 9.6 in particular for more detail).

RSPB Scotland

- 9.7.5 RSPB Scotland considers the Scoping Approaches to be a better reflection of the likely impact of the proposed Berwick Bank Wind Farm (compared to the Developer Approach). However, RSPB Scotland highlights that it does not agree with the 98.9% avoidance rate used for gannet as it is based on the non-breeding season and in its opinion, it does not reflect behaviours during the breeding season. RSPB Scotland advocates the use of 98% avoidance rate for gannet during the breeding season. RSPB Scotland welcomed that a 98% avoidance rate has been presented for collision estimates in the EIA, Volume 2, Chapter 11, Appendix 11.3, noting these have not been taken forward to any conclusion of AEOSI. The use of lower avoidance rates would likely increase predicted collision mortality for gannet.

9.8 Outer Firth of Forth and St Andrew's Bay Complex SPA

- 9.8.1 The OFFSAB SPA is a marine SPA, designated as functionally linked to multiple breeding colony features of other SPAs, and is designated for non-breeding seabird features.

9.8.2 The following SPAs are considered functionally linked to the OFFSAB SPA: Forth Islands SPA, St Abb's Head to Fast Castle SPA, Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA and Troup, Pennan and Lion's Heads SPA. NatureScot advised (31 March 2023) that features of these SPAs that are impacted would also result in impacts on the OFFSAB SPA.

9.8.3 The approach taken in the AA is that a conclusion of AEOSI for an SPA functionally linked to the OFFSAB SPA would also result in AEOSI on the OFFSAB SPA.

10 Contextual information – mass mortality events

10.1.1 In 2021 there was an outbreak of HPAI in wild birds. In 2022 and to a lesser extent 2023 further outbreaks of HPAI impacted many species and colonies of UK seabirds. BBWFL's ornithology assessment was largely undertaken prior to the HPAI outbreak that occurred during the 2022 seabird breeding season. The species affected by HPAI of potential relevance to this AA are gannet, kittiwake, guillemot, and razorbill. In addition to the HPAI outbreak, mass mortality affected several auk species in 2021 and 2022, particularly guillemot but also razorbill. It is unclear what the long-term impacts to populations may be from HPAI and other mass mortality events. However, in its response NatureScot highlighted that the HPAI outbreak necessitates greater precaution in assessment, particularly for the following species and sites:

- Gannet at Forth Islands SPA
- Guillemot, razorbill, and puffin at St Abb's Head to Fast Castle SPA and on the Isle of May (Forth Islands SPA)
- Kittiwake at East Caithness Cliffs SPA

10.1.2 Subsequent to the NatureScot response, a report summarising the results of seabird colony counts undertaken to better understand the impacts of HPAI was published (Tremlett et al. 2024) and indicated additional colonies that might warrant additional precaution when reaching conclusions:

- Gannet at Hermaness, Saxa Vord and Valla Field SPA
- Guillemot at Farne Islands SPA
- Kittiwake at Forth Islands and West Westray SPAs

10.1.3 Natural England, in its advice of 7 May 2025, highlighted that the HPAI outbreak necessitates greater precaution in assessment for gannet, kittiwake, guillemot, razorbill and puffin throughout the English north-east region, but particularly for the following species and sites:

- Kittiwake at Farne Islands SPA

- 10.1.4 Natural England also highlighted that it has no colony counts for Flamborough and Filey Coast SPA for any species other than gannet since the outbreak began, and little data for Coquet Island SPA. Therefore, Natural England has no evidence of the level of impact of HPAI to these colonies.
- 10.1.5 Natural England does not consider these areas of uncertainty to alter the conclusions of the AA with regard to which species will or will not experience AEOSI.
- 10.1.6 The AA concludes that HPAI outbreaks necessitate greater precaution for those species and sites relevant to this assessment as named by NatureScot and those of relevance to this assessment in the Tremlett et al. report. This is because, whilst population numbers may be reduced, the life history of seabirds (slow maturing, low reproduction) means that colonies impacted by pressures such as HPAI may be more sensitive to additional mortality from offshore wind development, exacerbating declines or preventing recovery.

11 In-combination assessment methodology

- 11.1 A review has been carried out of all the projects which currently have an open application or active marine licence, section 36 consent or European Protected Species licence and associated AA which identified a likely significant effect on the qualifying interests of the same designated sites as are affected by Berwick Bank Wind Farm. Projects in English waters identified by BBWFL in the RIAA have also been included.
- 11.2 Construction on the Berwick Bank Wind Farm is not likely to commence until at least 2025 so any licences which expire before this date have been discounted. A number of licences to carry out periodic maintenance dredging and sea deposit of dredged material have also been issued however any impact from these projects will be minor and short term and therefore not have a significant contribution to in-combination effects with the Berwick Bank Wind Farm. There are also a number of active marine licences to deposit fish farms however effects from these projects are also minor and not likely to lead to significant in-combination effects with the Berwick Bank Wind Farm. These dredging, sea deposit and fish farm licences have also all been discounted from the in-combination assessment.
- 11.3 The Scottish Ministers are content that BBWFL considered all of the appropriate wind farm projects within its application. With regard to the additional projects referenced by Natural England in its representation dated 7 May 2025 the Scottish Ministers are content that, under exception of Hornsea 4, they were screened out from quantitative assessment at the application stage by BBWFL due to low data confidence or availability or in respect of Rampion 2 due to the project being outside the 510KM zone of

influence. Hornsea 4 has been included in the in combination assessment for Berwick Bank Wind Farm.

- 11.4 The identified projects have been separated into Forth & Tay wind farms (Table 13), other North Sea wind farms (Table 14) and non-wind farm projects (Table 15)

Table 13: Wind farms in the Forth & Tay area which are considered in the in-combination assessment for Berwick Bank Wind Farm

Inch Cape Offshore Wind Farm	Consented offshore wind farm consisting of a maximum of 72 wind turbines to be installed 15-22km from the Angus coastline. https://marine.gov.scot/ml/inch-cape-offshore-windfarm
Neart na Gaoithe Offshore Wind Farm	Consented offshore wind farm consisting of up to 54 WTGs located 15.5km east of Fife Ness in the Firth of Forth. The project is currently under construction. https://marine.gov.scot/ml/neart-na-gaoithe-offshore-wind-farm-revised-design
Seagreen Alpha and Bravo Offshore Wind Farms	Consented offshore wind farm consisting of up to 150 WTGs with 114 WTGs now operational (known as Phase 1) located approximately 27km off the Angus coastline. https://marine.gov.scot/ml/seagreen-alpha-and-bravo-offshore-wind-farms

Table 14: Wind farms in the wider North Sea area which are considered in the in-combination assessment for Berwick Bank Wind Farm

Beatrice Offshore Wind Farm	Operational wind farm in the outer Moray Firth, 13.5km offshore. The wind farm consists of 84 turbines over an area of 131.5km ² . https://marine.gov.scot/ml/beatrice-offshore-windfarm
Blyth Demo Phase 1	Operational wind farm consisting of 15 turbines
Blyth Demo Phase 2	Consented wind farm consisting of up to 5 floating turbines
Dogger Bank (Creyke Beck) A	Under construction wind farm consisting of up to 200 turbines
Dogger Bank (Creyke Beck) B	Under construction wind farm consisting of up to 200 turbines
Dogger Bank C (Teesside A)	Under construction wind farm with a generating capacity of up to 1,400MW
Dudgeon	Operational wind farm consisting of up to 67 turbines
East Anglia One	Operational wind farm consisting of up to 325 turbines

Appropriate Assessment for Berwick Bank Wind Farm. June 2025.

East Anglia One North	Consented wind farm consisting of up to 67 turbines
East Anglia Two	Consented wind farm consisting of up to 75 turbines
East Anglia Three	Consented wind farm consisting of up to 172 turbines
Forthwind Demonstration Project	Single 20MW test and demonstration turbine and met mast located approximately 1.5km from the shore at Methil in the Firth of Forth. https://marine.gov.scot/ml/forthwind-demonstration-project
Galloper	Operational wind farm consisting of up to 56 turbines
Great Gabbard	Operational wind farm consisting of 140 turbines
Green Volt Offshore Wind Farm	Consented floating wind farm consisting of up to 35 WTGs located approximately 80km off the Aberdeenshire coastline. https://marine.gov.scot/ml/green-volt-offshore-windfarm
Gunfleet Sands I and II	Operational wind farm consisting of up to 30 turbines
Hornsea One	Operational wind farm consisting of up to 120 turbines
Hornsea Project Two	Under construction wind farm consisting of up to 360 turbines
Hornsea Project Three	Consented wind farm consisting of up to 231 turbines
Hornsea Project Four	Submitted wind farm up to 2,600 MW (up to 180 wind turbines)
Humber Gateway	Operational wind farm consisting of up to 83 turbines
Hywind Scotland Pilot Park	Operational wind farm consisting of five 6MW floating wind turbines installed approximately 25km off the coast of Peterhead. https://marine.gov.scot/ml/hywind-scotland-pilot-park
Kentish Flats	Operational wind farm consisting of up to 30 turbines
Kentish Flats Extension	Operational wind farm consisting of up to 17 turbines
Kincardine Offshore Wind Farm	An operational demonstrator floating wind farm consisting of five 9.5MW turbines located about 8 miles of the coast to the south east of Aberdeen. https://marine.gov.scot/ml/kincardine-offshore-windfarm-0
Levenmouth Demonstration Turbine	Construction, operation and decommissioning of a site for the testing of new designs of offshore WTGs with a capacity of up to 7MW at the Fife Energy Park, Methil. One WTG has been installed and is currently operational. https://marine.gov.scot/ml/levenmouth-demonstration-turbine
Lincs	Operational wind farm consisting of up to 75 turbines

Appropriate Assessment for Berwick Bank Wind Farm. June 2025.

London Array	Operational wind farm consisting of up to 175 turbines
Lynn and Inner Dowsing Wind Farms	Operational wind farm consisting of up to 54 turbines
Moray East Offshore Wind Farm	An operational offshore wind farm 22km from Caithness coast. The project is currently under construction and due to be operational by June 2025. https://marine.gov.scot/ml/moray-east-offshore-windfarm
Moray West Offshore Wind Farm	A maximum of 60 WTGs will be installed off the Caithness coast. The project is currently under construction and is due to be operational by June 2025. https://marine.gov.scot/ml/moray-west-offshore-windfarm
Norfolk Boreas Offshore Wind Farm	Consented wind farm consisting of up to 158 turbines
Norfolk Vanguard Offshore Windfarm	Consented wind farm consisting of up to 200 turbines
Race Bank	Operational wind farm consisting of 91 turbines
Scroby Sands	Operational wind farm consisting of 30 turbines
Sheringham Shoal	Operational wind farm consisting of 88 turbines
Sofia Offshore Wind Farm (Teesside B)	Under construction wind farm with a generating capacity of up to 1,400MW
Teesside	Operational wind farm consisting of 27 turbines
Triton Knoll	Operational wind farm consisting of 90 turbines
Westermost Rough	Operational wind farm consisting of 35 turbines
Wind T and D Site	Operational wind farm consisting of 2 turbines

Table 15: Other non-wind farm projects which are considered in the in-combination assessment for Berwick Bank Wind Farm

Eastern Green Link 1	Installation of a subsea HVDC link between Torness in East Lothian and Hawthorn Pit in County Durham. Commencement of works is due to take place in January 2025 with completion to occur in December 2027.
Eastern Green Link 2	Installation of a 436km HVDC cable between Peterhead in Aberdeenshire and Drax in North Yorkshire.

Expansion of Outer Berth, Port of Leith	Construction of a 125m long berth, provision of a hardstanding area, capital dredging of 215,000 wet tonnes of material to be deposited at Narrow Deep B deposit site. Project will take 15 months to complete. https://marine.gov.scot/ml/port-leith-outer-berth
Granton Harbour Redevelopment	Construction of a new 110m sheet piled quay wall. 50m extension of the western breakwater. Creation of a 340 berth marina. Capital dredging of which 154,385m ³ will be taken for land-based disposal, 19,322m ³ will be used in land reclamation and the remaining 86,980m ³ will be deposited at a sea deposit site. https://marine.gov.scot/node/23005
Magallanes ATIR Tidal Turbine	A 1.5MW tidal turbine installed in Berth 1 at the EMEC Fall of Warness site in Orkney. It uses a further four temporary deployment sites around Scapa Bay, Shapinsay Sound and Deerness for maintenance activities. The device is fixed to the seabed using four gravity-based anchors. https://marine.gov.scot/node/24248
Meygen Tidal Turbines	Tidal array in the Inner Sound of the Pentland Firth. Four turbines have been installed. Consent for phase 1b consisting of an additional four turbines has been granted but plans for the remaining 53 turbines have not yet been confirmed. https://marine.gov.scot/ml/meygen-tidal-energy-project
North Coast and Orkney Islands Cable Geophysical Surveys	Surveys of 24 cable routes with a maximum survey area of 240km ² . Surveys are expected to take 360 days over a four year period.
Nova Shetland Tidal Array, Bluemull Sound	Operational tidal turbine array consisting of 6 tidal turbines located in the Bluemull Sound, Shetland just offshore from the Ness of Cullivoe and between the islands of Yell and Unst. The Nova M100 device is a 100kW seabed mounted tidal turbine with a two blade rotor. Decommissioning of 3 of the tidal turbines was completed in October 2023. https://marine.gov.scot/node/23871
Orkney to Mainland Scotland – Cable Installation	Installation of a 53km HVAC cable from Warebeath, Orkney to Dounreay, Caithness within a 200m corridor. Horizontal directional drilling will be used at the landfalls. The cable will be trenched and buried where possible. Where burial cannot be achieved, additional protection will be used.
Shetland to Caithness Cable Installation	Installation of a 254km HVDC cable between Weisdale Voe, Shetland and Noss Head, Caithness within a 200m wide corridor. The cable will be trenched and buried where possible. Where burial cannot be achieved, additional protection will be used.

11.5 Marine licences have also been issued for harbour improvement works at Fair Isle, moorings at Dalgety Bay, sea wall repairs at Valleyfield, Fife, maintenance works at the Kessock bridge, construction of a sea outfall at Spey Bay, slipway repairs at Brough Bay and maintenance works at the Friarton

bridge, however these works are all small scale and any residual impacts will be very localised so will not contribute significantly to in-combination effects with the Berwick Bank Wind Farm and are not considered further.

- 11.6 Where the AA concludes AEOSI or is unable to conclude no AEOSI from Berwick Bank Wind Farm alone, this is the conclusion of the AA for that species/site and before Berwick Bank Wind Farm could be consented, a derogation case would have to be agreed under the Habitats Regulations. In these cases, the in-combination assessment is presented for information only. Where the AA concludes no AEOSI from Berwick Bank Wind Farm alone, the in-combination assessment is considered for the conclusion of the AA. Where the AA then concludes AEOSI or is unable to conclude no AEOSI from Berwick Bank Wind Farm in combination with other projects, the level of impact from Berwick Bank Wind Farm, as presented in Appendix C, is the impact from Berwick Bank Wind Farm alone.

12 Kittiwake

12.1 Mortality summary and PVA outputs

Table 16: SPA population size, estimated adult mortalities assuming Scoping Approach B 3% displacement mortality, and resulting CPS after 35 years for adult

kittiwake from Berwick Bank Wind Farm alone and in combination with other UK

SPA		Population size	Annual adult kittiwake mortalities	Counterfactual of Population Size after 35 years (CPS)
Buchan Ness to Collieston Coast SPA	Alone	22,590	21	0.968
	In-combination	22,590	97.9	0.858
East Caithness Cliffs SPA	Alone	48,920	41.1	0.973
	In-combination	48,920	411.1	0.777
Flamborough and Filey Coast SPA	Alone	91,008	38.1	0.985
	In-combination	91,008	526.2	0.841
Forth Islands SPA	Alone	9,034	43.3	0.869
	In-combination	9,034	89.9	0.737
Fowlsheugh SPA	Alone	26,542	130.5	0.872
	In-combination	26,542	252.4	0.758
North Caithness Cliffs SPA	Alone	7,712	10.2	0.955
	In-combination	7,712	58.7	0.772
St Abbs Head to Fast Castle SPA	Alone	402.2	371.3	0.375
	In-combination	10,904	402.2	0.341
Troup, Pennan and Lion's Heads SPA	Alone	21,232	18.4	0.973
	In-combination	21,232	102.5	0.859
West Westray SPA	Alone	5,486	12.1	0.912
	In-combination	5,486	66.3	0.599

North Sea OWFs.

12.1.1 In their determination of the assessment impact to kittiwake, the Scottish Ministers have considered the methodology undertaken, updated guidance for kittiwake avoidance rates and the impacts of the HPAI pandemic. See section 9 for greater detail. The Scottish Ministers determine that the best available evidence is utilised in the kittiwake assessment relative to displacement (see section 9). The Scottish Ministers also conclude that the updated guidance for

avoidance rates for kittiwake would not change these conclusions in respect of AEOSI as determined under the Scoping Approaches results.

12.2 Buchan Ness to Collieston Coast SPA

12.2.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for kittiwake as a qualifying feature of Buchan Ness to Collieston Coast SPA.

12.2.2 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of Buchan Ness to Collieston Coast SPA.

12.2.3 The Buchan Ness to Collieston Coast SPA kittiwake population size of 22,590 adults used in the applications was taken from the 2019 count (Table 2.6, Appendix, 11.6 [PVA Report](#)).

Table 17: Estimated annual kittiwake mortality Buchan Ness to Collieston Coast SPA from Berwick Bank Wind Farm alone (see Tables 5.133, 5.134 and 5.135: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	2.3	6.8	1.3
	Immatures	0.8	2.5	0.0
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	14.3	14.3	10.1
	Immatures	4.3	4.3	3.0
Total	Adults	16.5	21	11.1
	Immatures	4.9	6.6	3
PVA	CPS	0.975	0.968	0.984
	CGR	0.999	0.999	1.000

12.2.4 The Scoping Approach B Counterfactual Population Size reported for the alone assessment translates as a 3% reduction in population size after 35 years, compared to an unimpacted population.

12.2.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the kittiwake feature of Buchan Ness to Collieston Coast SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 18: Estimated annual mortality at Buchan Ness to Collieston Coast SPA kittiwakes from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.136, 5.137, 5.138 and 5.139: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	3.4	10.2	1.3
		Immatures	1.5	4.4	0
	Collision	Adults	17.5	17.5	13.2
		Immatures	6	6	4.7
	Total	Adults	20.8	27.5	14.2
		Immatures	7.2	10.2	4.7
	PVA	CPS	0.968	0.958	0.978
		CGR	0.999	0.999	0.999
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	8.9	26.6	1.3
		Immatures	4.1	12.4	0
	Collision	Adults	71.3	71.3	67.1
		Immatures	23.1	23.1	21.8
	Total	Adults	80.2	97.9	68.4
		Immatures	27	35.3	21.8
	PVA	CPS	0.883	0.858	0.901
		CGR	0.997	0.996	0.997

12.2.6 The Scoping Approach B Counterfactual Population Size reported for the in-combination with Forth & Tay OWFs assessment translates as a 4% reduction in population size after 35 years, relative to an unimpacted population. The Scottish Ministers agree with the RIAA that there will be no AEOSI for the kittiwake feature of Buchan Ness to Collieston Coast SPA from the Berwick Bank Wind Farm in combination with Forth & Tay OWFs based on Scoping Approach B.

12.2.7 The Scoping Approach B Counterfactual of Population Size reported for the UK North Sea in-combination assessment translates as a 15% reduction in population size, after 35 years, relative to an unimpacted population.

12.2.8 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude AEOSI for the kittiwake feature of Buchan Ness to Collieston Coast SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

12.3 East Caithness Cliffs SPA

12.3.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for kittiwake as a qualifying feature of East Caithness Cliffs SPA.

12.3.2 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of East Caithness Cliffs SPA.

12.3.3 The East Caithness Cliffs SPA kittiwake population size of 48,920 adults, was taken from the 2015 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 19: Estimated annual mortality at East Caithness Cliffs SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.166, 5.167 and 5.168: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	5.2	15.6	0.1
	Immatures	2.6	7.7	0.0
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	25.5	25.5	18.4
	Immatures	12.6	12.6	8.9
Total	Adults	30.7	41.1	18.4

	Immatures	15.2	20.3	8.9
PVA	CPS	0.980	0.973	0.988
	CGR	0.999	0.999	1.000

12.3.4 The Scoping Approach B Counterfactual Population Size reported for the alone assessment translates as a 3% reduction in population size, after 35 years, relative to an unimpacted population.

12.3.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the kittiwake feature of East Caithness Cliffs SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 20: Estimated annual mortality at East Caithness Cliffs SPA kittiwakes from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.169, 5.170 and 5.171: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	59.0	177.0	65.1
		Immatures	16.2	48.6	6.0
	Collision	Adults	234.1	234.1	226.9
		Immatures	80.3	80.3	76.6
	Total	Adults	293.1	411.1	291.9
		Immatures	96.5	128.9	82.6
	PVA	CPS	0.834	0.777	0.838
		CGR	0.995	0.993	0.995

12.3.6 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 23% reduction in population size, after 35 years, compared to an unimpacted population.

12.3.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the kittiwake feature of East Caithness Cliffs SPA from the Berwick Bank**

Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

12.4 Farne Islands SPA

12.4.1 Kittiwake is a named component of the seabird breeding assemblage only and not a feature in its own right so is considered under section 17.4 and not separately here, see rationale in paragraph 6.2.

12.5 Flamborough and Filey Coast SPA

12.5.1 Natural England, in its response dated 7 May 2025, clarified it agreed with the conclusions of the RIAA that there would be no AEOSI on the kittiwake feature of the Flamborough and Filey Coast SPA from Berwick Bank Wind Farm alone.

12.5.2 Natural England, in its response dated 6 April 2023, agreed with the conclusions of the RIAA that there will be AEOSI for Berwick Bank Wind Farm in combination for kittiwake as a qualifying feature of Flamborough and Filey Coast SPA.

12.5.3 The Flamborough and Filey Coast SPA kittiwake population size of 91,008 adults, was taken from the 2017 count (Table 2.6, Appendix 11.6: [PVA Report](#)). This is the largest kittiwake colony in the UK. There is uncertainty about the long-term population trend in the kittiwake population at this SPA but it may have undergone a long-term decline.

Table 21: Estimated annual mortality at Flamborough and Filey Coast SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.185, 5.186 and 5.187: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	4.8	14.5	0.1
	Immatures	2.4	7.2	0.0
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	23.9	23.9	17.1
	Immatures	11.8	11.8	8.3
Total	Adults	28.5	38.1	17.1
	Immatures	14.1	18.9	8.2

PVA	CPS	0.989	0.985	0.994
	CGR	1.000	1.000	1.000

12.5.4 The Scoping Approach B Counterfactual Population Size reported for the alone assessment translates as a 1% reduction in population size, after 35 years, compared to an unimpacted population.

12.5.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the kittiwake feature of Flamborough and Filey Coast SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 22: Estimated annual mortality at Flamborough and Filey Coast SPA kittiwakes from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.188, 5.189 and 5.190: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	24.7	74.1	0.1
		Immatures	12.3	36.9	0.0
	Collision	Adults	452.4	452.4	445.6
		Immatures	73.9	73.9	70.4
	Total	Adults	476.8	526.2	445.6
		Immatures	86.0	110.6	70.3
	PVA	CPS	0.857	0.841	0.868
		CGR	0.996	0.995	0.996

12.5.6 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 16% reduction in population size, after 35 years, compared to an unimpacted population.

12.5.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the kittiwake feature of Flamborough and Filey Coast SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

12.6 Forth Islands SPA

12.6.1 NatureScot, in its response of 31 March 2023 disagreed with the conclusions of the RIAA. NatureScot concluded that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have an AEOSI for kittiwake as a qualifying feature of Forth Islands SPA.

12.6.2 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches Berwick Bank Wind Farm in combination with both other Forth & Tay OWFs and other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of Forth Islands SPA.

12.6.3 The Forth Islands SPA kittiwake population size of 9034 adults, was taken from the 2021 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 23: Estimated annual mortality at Forth Islands SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.52, 5.53 and 5.54: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	3.6	10.7	6.3
	Immatures	0.3	1	0.2
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	32.5	32.5	22.5
	Immatures	2.2	2.2	1.5
Total	Adults	36.2	43.3	28.8
	Immatures	2.3	2.9	1.6
PVA	CPS	0.890	0.869	0.912
	CGR	0.997	0.996	0.997

12.6.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 14% reduction in population size, after 35 years, relative to an unimpacted population.

12.6.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the**

kittiwake feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

12.6.6 The in-combination assessment is presented below for information.

Table 24: Estimated annual mortality at Forth Islands SPA kittiwakes from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.55, 5.56, 5.57 and 5.58: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	9.5	28.6	17.7
		Immatures	1	2.9	1.2
	Collision	Adults	48.5	48.5	38.5
		Immatures	3.8	3.8	3.1
	Total	Adults	58.2	77.2	56.2
		Immatures	4.5	6.4	4.2
	PVA	CPS	0.827	0.777	0.833
		CGR	0.995	0.993	0.995
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	10.9	32.7	17.7
		Immatures	1.6	4.9	1.2
	Collision	Adults	57.2	57.2	47.1
		Immatures	7.9	7.9	7.3
	Total	Adults	68.2	89.9	64.8
		Immatures	9.4	12.5	8.3
	PVA	CPS	0.794	0.737	0.804
		CGR	0.994	0.992	0.994

12.6.7 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 23% reduction in population size, after 35 years, relative to an unimpacted population.

12.6.8 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 27% reduction in population size, after 35 years, relative to an unimpacted population.

12.6.9 The Scottish Ministers also conclude an AEOSI for the kittiwake feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.

12.7 Fowlsheugh SPA

12.7.1 NatureScot, in its response of 31 March 2023, disagreed with the conclusions of the RIAA instead concluding that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have an AEOSI for kittiwake as a qualifying feature of Fowlsheugh SPA.

12.7.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with both other Forth & Tay OWFs and other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of Fowlsheugh SPA.

12.7.3 The Fowlsheugh SPA kittiwake population size of 26,542 adults, was taken from the 2018 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 25: Estimated annual mortality at Fowlsheugh SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.83, 5.84 and 5.85: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	10.8	32.1	19.0
	Immatures	0.9	2.8	0.7
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	98.3	98.3	68.1
	Immatures	6.1	6.1	4.2
Total	Adults	109.1	130.5	87
	Immatures	7	8.8	4.9
PVA	CPS	0.892	0.872	0.914
	CGR	0.997	0.996	0.997

12.7.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 13% reduction in population size, after 35 years, relative to an unimpacted population.

12.7.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the**

kittiwake feature of Fowlsheugh SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

12.7.6 The in-combination assessment is presented below for information.

Table 26: Estimated annual mortality at Fowlsheugh SPA kittiwakes from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.86, 5.87, 5.88 and 5.89: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	21.0	62.9	37.8
		Immatures	2.2	6.6	2.2
	Collision	Adults	136.8	136.8	106.6
		Immatures	10.4	10.4	8.5
	Total	Adults	155.4	197.3	141.7
		Immatures	12.5	16.9	10.8
	PVA	CPS	0.849	0.811	0.861
		CGR	0.995	0.994	0.996
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	26.1	78.2	39.8
		Immatures	4.2	12.5	2.2
	Collision	Adults	174.3	174.3	144.0
		Immatures	23.7	23.7	21.9
	Total	Adults	200.4	252.4	183.6
		Immatures	27.9	36.2	24.1
	PVA	CPS	0.803	0.758	0.818
		CGR	0.994	0.992	0.994

12.7.7 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 19% reduction in population size, after 35 years, relative to an unimpacted population.

12.7.8 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 24% reduction in population size, after 35 years, relative to an unimpacted population.

12.7.9 The Scottish Ministers also conclude an AEOSI for the kittiwake feature of Fowlsheugh SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.

12.8 North Caithness Cliffs SPA

12.8.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that, in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would not have an AEOSI for kittiwake as a qualifying feature of North Caithness Cliffs SPA.

12.8.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of North Caithness Cliffs SPA.

12.8.3 The North Caithness Cliffs SPA kittiwake population size of 7712 adults, was taken from the 2015/16 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 27: Estimated annual mortality at North Caithness Cliffs SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.212, 5.213 and 5.214: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	1.3	3.9	0.0
	Immatures	0.7	1.9	0.0
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	6.3	6.3	4.5
	Immatures	3.3	3.3	2.3
Total	Adults	7.6	10.2	4.5
	Immatures	3.8	5.1	2.2
PVA	CPS	0.966	0.955	0.980
	CGR	0.999	0.999	0.999

12.8.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 4% reduction in population size, after 35 years, relative to an unimpacted population.

12.8.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the kittiwake feature of North Caithness Cliffs SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 28: Estimated annual mortality at North Caithness Cliffs SPA kittiwakes from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.215, 5.216 and 5.217: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	7.6	22.9	2.0
		Immatures	3.4	10.2	0.2
	Collision	Adults	39.5	39.5	37.8
		Immatures	18.5	18.5	17.6
	Total	Adults	43.4	58.7	35.9
		Immatures	19.8	26.6	15.6
	PVA	CPS	0.826	0.772	0.855
		CGR	0.995	0.993	0.996

12.8.6 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 23% reduction in population size, after 35 years, relative to an unimpacted population.

12.8.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the kittiwake feature of North Caithness Cliffs SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

12.9 Outer Firth of Forth and St Andrews Bay Complex SPA

12.9.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that, in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone and in combination with other Forth & Tay and UK North Sea OWFs would have an AEOSI for breeding kittiwake as a qualifying feature of the OFFSAB SPA, via AEOSI on contributing (functionally linked) breeding colony SPAs.

12.9.2 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that, in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone and in combination with other Forth & Tay and UK North Sea OWFs would have an AEOSI for non-breeding kittiwake as a qualifying feature

of the OFFSAB SPA, via AEOSI on contributing (functionally linked) breeding colony SPAs.

- 12.9.3 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the breeding kittiwake feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI from functionally linked SPAs for breeding kittiwake.

The Scottish Ministers conclude an AEOSI for the non-breeding kittiwake feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B. This conclusion is based on the conclusion AEOSI from functionally linked SPAs for breeding kittiwake.

- 12.9.4 The in-combination conclusions are presented below for information.
- 12.9.5 The Scottish Ministers also conclude an AEOSI for the breeding kittiwake feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination with other Forth & Tay and UK North Sea OWFs based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI from functionally linked SPAs for breeding kittiwake.
- 12.9.6 The Scottish Ministers also conclude an AEOSI for the non-breeding kittiwake feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination with other Forth & Tay and UK North Sea OWFs based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI from functionally linked SPAs for breeding kittiwake.

12.10 St Abb's Head to Fast Castle SPA

- 12.10.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA concluding that, adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have an AEOSI for kittiwake as a qualifying feature of St Abb's Head to Fast Castle SPA.
- 12.10.2 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with both other Forth & Tay OWFs and other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of St Abb's Head to Fast Castle SPA.

12.10.3 The St Abbs Head to Fast Castle SPA kittiwake population size of 10,904 adults, was taken from the 2020 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 29: Estimated annual mortality at St Abb’s Head to Fast Castle SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.20, 5.21 and 5.22: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	29.6	88.4	57.9
	Immatures	1.2	3.7	1.8
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	283.1	283.1	195.5
	Immatures	10.7	10.7	7.5
Total	Adults	312.6	371.3	253.2
	Immatures	11.9	14.3	9.4
PVA	CPS	0.438	0.375	0.513
	CGR	0.977	0.973	0.982

12.10.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 62% reduction in population size, after 35 years, relative to an unimpacted population.

12.10.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the kittiwake feature of St Abb’s Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

12.10.6 The in-combination assessment is presented below for information.

Table 30: Estimated annual mortality at St Abb’s Head to Fast Castle SPA kittiwakes from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.23, 5.24 and 5.25: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)	
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	33.0	98.5	64.0	
		Immatures	1.6	4.9	2.5	
	Collision	Adults	290.4	290.4	202.8	
		Immatures	11.4	11.4	8.1	
	Total	Adults	323.3	388.7	266.6	
		Immatures	12.9	16.1	10.5	
	PVA	CPS	0.425	0.357	0.494	
		CGR	0.977	0.972	0.981	
	Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	34.5	103.0	64.0
			Immatures	2.4	7.1	2.5
Collision		Adults	299.5	299.5	211.8	
		Immatures	15.9	15.9	12.6	
Total		Adults	333.8	402.2	275.7	
		Immatures	18.2	23.0	15.0	
PVA		CPS	0.410	0.341	0.479	
		CGR	0.976	0.971	0.98	

12.10.7 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 64% reduction in population size, after 35 years, relative to an unimpacted population.

12.10.8 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 66% reduction in population size, after 35 years, relative to an unimpacted population.

12.10.9 The Scottish Ministers also conclude an AEOSI for the kittiwake feature of St Abb’s Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.

12.11 Troup, Pennan and Lion’s Heads SPA

12.11.1 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for kittiwake as a qualifying feature of Troup, Pennan and Lion’s Heads SPA.

12.11.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of Troup, Pennan and Lion’s Heads SPA.

12.11.3 The Troup, Pennan and Lion’s Heads SPA kittiwake population size of 21,232 adults, was taken from the 2017 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 31: Estimated annual mortality at Troup, Pennan and Lion’s Heads SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.148, 5.149 and 5.150: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	2.2	6.5	0.5
	Immatures	1.0	2.9	0.0
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	11.9	11.9	8.5
	Immatures	4.9	4.9	4.0
Total	Adults	14.1	18.4	9
	Immatures	5.7	7.6	3.3
PVA	CPS	0.980	0.973	0.987
	CGR	0.999	0.999	1.000

12.11.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 3% reduction in population size, after 35 years relative to an unimpacted population.

12.11.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the**

kittiwake feature of the Troup, Pennan and Lion’s Heads SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

Table 32: Estimated annual mortality at Troup, Pennan and Lion’s Heads SPA kittiwakes from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.151, 5.152 and 5.153: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	13.5	40.6	7.6
		Immatures	5.2	15.7	0.7
	Collision	Adults	62.0	62.0	58.5
		Immatures	27.4	27.4	26.5
	Total	Adults	75.5	102.5	65.7
		Immatures	32.4	42.8	26.4
	PVA	CPS	0.894	0.859	0.908
		CGR	0.997	0.996	0.997

12.11.6 The Scoping Approach B Counterfactual Population Size reported for the North Sea in-combination assessment translates as a 14% reduction in population size, after 35 years, relative to an unimpacted population.

12.11.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the kittiwake feature of Troup, Pennan and Lion’s Heads SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

12.12 West Westray SPA

12.12.1 NatureScot, in its response of 31 March 2023, disagreed with the conclusions of the RIAA such that in adhering to the Scoping Approaches, it was unable to conclude that Berwick Bank Wind Farm alone would have no AEOSI for kittiwake as a qualifying feature of West Westray SPA.

12.12.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for kittiwake as a qualifying feature of West Westray SPA.

12.12.3 The West Westray SPA kittiwake population size of 5486 adults, was taken from the 2017 count (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 33: Estimated annual mortality at West Westray SPA kittiwakes from Berwick Bank Wind Farm alone (see Tables 5.278, 5.279 and 5.280: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
	Adults	1.5	4.6	0.0
	Immatures	0.8	2.3	0.0
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	7.4	7.4	5.4
	Immatures	3.7	3.7	2.5
Total	Adults	9	12.1	5.1
	Immatures	4.5	6.1	2.6
PVA	CPS	0.934	0.912	0.962
	CGR	0.998	0.997	0.999

12.12.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 9% reduction in population size, after 35 years, relative to an unimpacted population. In consideration of the precaution in-built into the assessment, but in the presence of uncertainty over HPAI impacts, the AA is unable to conclude no AEOSI on the predictions returned.

12.12.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers are unable to conclude no AEOSI for the kittiwake feature of the West Westray SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

12.12.6 The in-combination assessment is presented below for information.

Table 34: Estimated annual mortality at West Westray SPA kittiwakes from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.281, 5.282 and 5.283: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	7.9	23.6	0.0
		Immatures	3.9	11.8	0.0
	Collision	Adults	42.5	42.5	40.4
		Immatures	21.3	21.3	20.3
	Total	Adults	50.5	66.3	40.2
		Immatures	25.3	33.3	20.3
	PVA	CPS	0.677	0.599	0.734
		CGR	0.989	0.986	0.991

12.12.7 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 40% reduction in population size, after 35 years, relative to an unimpacted population.

12.12.8 The Scottish Ministers conclude an AEOSI for the kittiwake feature of West Westray SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

13 Guillemot

13.1 Mortality summary and PVA outputs

Table 35: SPA population size, estimated adult mortalities assuming Scoping Approach B 5% displacement mortality, and resulting CPS after 35 years for adult guillemot from Berwick Bank Wind Farm alone and in combination with other UK North Sea OWFs.

		SPA Population size	Annual adult guillemot mortalities	Counterfactual Population Size after 35 years (CPS)
Farne Islands SPA	Alone	85,816	168.2	0.922
	In-combination	85,816	n/a	n/a
Forth Islands SPA	Alone	34,580	180.6	0.804
	In-combination	34,580	399.3	0.618
Fowlsheugh SPA	Alone	91,358	473.3	0.805
	In-combination	91,358	799.9	0.695

St Abbs Head to Fast Castle SPA	Alone	61,408	576.1	0.674
	In-combination	61,408	696.1	0.622

13.2 Farne Islands SPA

13.2.1 Natural England, in its response dated 6 April 2023, disagreed with the conclusions of the RIAA such that it cannot rule out AEOSI for Berwick Bank Wind Farm alone for guillemot as a qualifying feature of the Farne Islands SPA.

13.2.2 The Farne Islands SPA guillemot population size of 85,816 adults, was taken from the 2019 count (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has sustained an increase since the mid-1980s.

Table 36: Estimated annual mortality at Farne Islands SPA guillemots from Berwick Bank Wind Farm alone (see Tables 5.119 and 5.120: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	79.7	168.2	36.9
	Immatures	88.5	184.9	40.2
Total	Adults	79.7	168.2	36.9
	Immatures	88.5	184.9	40.2
PVA	CPS	0.962	0.922	0.982
	CGR	0.999	0.998	1.000

13.2.3 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as an 8% reduction in population size, after 35 years, relative to an unimpacted population. The species and SPA are understood to have been impacted by the recent HPAI outbreak.

13.2.4 Natural England consider that various components of their recommended approach to assessment would likely increase impacts to guillemots (see section 9.7.1). The AA considers the Scoping Approaches to utilise the best available evidence for assessment methodology. Natural England highlight that use of sabbaticals, stable-age modelling and displacement mortalities vary in its assessment recommendations. The AA considers that Scoping

Approach B captures the best available evidence for a precautionary assessment.

- 13.2.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers are unable to conclude no AEOSI for the guillemot feature of Farne Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**
- 13.2.6 In-combination impacts of Berwick Bank Wind Farm with UK North Sea OWFs were not assessed for Farne Islands SPA guillemots as no other OWFs were identified as contributing to either breeding or non-breeding effects on this population (Paragraph 1782, [RIAA Part 3](#)). However, in its consultation response of 7 May 2025, Natural England advised that a number of English projects have identified in-combination contributions to Farne Islands SPAs and therefore advised that guillemot from the Farne Island SPA are assessed in-combination. The Scottish Ministers advise that due to the conclusion outlined above (unable to conclude no AEOSI for the guillemot feature of Farne Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B), an in-combination assessment for this feature would provide limited additional value and be for information only, and is therefore not included in the AA.
- 13.3 Flamborough and Filey Coast SPA
- 13.3.1 Natural England, in its response dated 7 May 2025, disagreed with the conclusions of the RIAA such that it cannot rule out AEOSI for Berwick Bank Wind Farm in combination for guillemot as a qualifying feature of the Flamborough and Filey Coast SPA. Natural England stated that if their preferred methodology had been adopted, guillemot at Flamborough and Filey Coast SPA would have been assessed for non-breeding impacts and as such it is likely that AEOSI in-combination could not have been ruled out.
- 13.3.2 Natural England consider that various components of their recommended approach to assessment would likely increase impacts to guillemots (see section 9.7.1). However, Natural England state that in combination adverse effects on Flamborough and Filey Coast SPA would likely be small. In addition, given the number of other impacted guillemot SPAs and the likely severity of impacts on those SPAs with breeding season connectivity, Natural England considered that the level of compensation already required for breeding season impacts on guillemot at multiple SPAs means that the level of compensation already required would address the non-breeding season effects at this site.

13.3.3 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. The Scottish Ministers have not concluded AEOSI on guillemot at Flamborough and Filey Coast SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs because impacts were not apportioned to this feature and site following Scoping Approach B.

13.4 Forth Islands SPA

13.4.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have an AEOSI for guillemot as a qualifying feature of the Forth Islands SPA.

13.4.2 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, that Berwick Bank Wind Farm in combination with UK North Sea OWFs, would have an AEOSI for guillemot as a qualifying feature of Forth Islands SPA.

13.4.3 The Forth Islands SPA guillemot population size of 34,580 adults, was taken from the 2018 and 2021 counts (Table 2.6, p. 27. Appendix 11.6: [PVA Report](#)). The population declined during the 2000's but has since stabilised and has recently started to increase.

Table 37: Estimated annual mortality at Forth Islands SPA guillemots from Berwick Bank Wind Farm alone (see Tables 5.66 and 5.67: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	91.3	180.6	37.2
	Immatures	90.9	178.2	36.4
Total	Adults	91.3	180.6	37.2
	Immatures	90.9	178.2	36.4
PVA	CPS	0.895	0.804	0.956
	CGR	0.997	0.994	0.999

13.4.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 20% reduction in population size, after 35 years, relative to an unimpacted population.

13.4.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude AEOSI for the guillemot feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

13.4.6 The in-combination assessment is presented below for information.

Table 38: Estimated annual mortality at Forth Islands SPA guillemots from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.68 and 5.69: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	200.7	399.3	82.8
		Immatures	200.4	392.4	80.0
	Total	Adults	200.7	399.3	82.8
		Immatures	200.4	392.4	80.0
	PVA	CPS	0.784	0.618	0.906
		CGR	0.993	0.987	0.997

13.4.7 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 38% reduction in population size, after 35 years, relative to an unimpacted population.

13.4.8 The Scottish Ministers also conclude an AEOSI for the guillemot feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

13.5 Fowlsheugh SPA

13.5.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind

Farm alone would have an AEOSI for guillemot as a qualifying feature of Fowlsheugh SPA.

13.5.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI on guillemot as a qualifying feature of Fowlsheugh SPA.

13.5.3 The Fowlsheugh SPA guillemot population size of 91,358 adults, was taken from the 2018 count (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has remained relatively stable during the last three decades.

Table 39: Estimated annual mortality at Fowlsheugh SPA guillemots from Berwick Bank Wind Farm alone (see Tables 5.96 and 5.97: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	259.9	473.3	89.0
	Immatures	261.0	472.9	88.3
Total	Adults	259.9	473.3	89.0
	Immatures	261.0	472.9	88.3
PVA	CPS	0.887	0.805	0.960
	CGR	0.997	0.994	0.999

13.5.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 20% reduction in population size, after 35 years, relative to an unimpacted population.

13.5.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude AEOSI for the guillemot feature of Fowlsheugh SPA from the Berwick Bank Wind Farm alone from Scoping Approach B.**

13.5.6 The in-combination assessment is presented below for information.

Table 40: Estimated annual mortality at Fowlsheugh SPA guillemots from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.98 and 5.99: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	430.2	799.9	154.1
		Immatures	423.2	781.6	149.4
	Total	Adults	430.2	799.9	154.1
		Immatures	423.2	781.6	149.4
	PVA	CPS	0.822	0.695	0.933
		CGR	0.995	0.990	0.998

13.5.7 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 30% reduction in population size, after 35 years relative to an unimpacted population.

13.5.8 The Scottish Ministers also conclude an AEOSI for the guillemot feature of Fowlsheugh SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

13.6 Outer Firth of Forth and St Andrews Bay Complex SPA

13.6.1 The following SPAs are considered functionally linked to the OFFSAB SPA: Forth Islands SPA, St Abb’s Head to Fast Castle SPA, Fowlsheugh SPA and Buchan Ness to Collieston Coast SPA.

13.6.2 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone and in combination with other Forth & Tay OWFs would have an AEOSI for breeding guillemot as a qualifying feature of the OFFSAB SPA, via AEOSI on the contributing (functionally linked) breeding colony SPAs, with the exception of Buchan Ness to Collieston Coast SPA, for which there was a conclusion of no AEOSI for guillemot.

13.6.3 NatureScot in its response of 31 March 2023 concluded that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone and in combination with other Forth & Tay OWFs would have an AEOSI for non-breeding guillemot as a qualifying feature of the OFFSAB SPA, via AEOSI on the contributing (functionally linked) breeding colony SPAs, with the exception of Buchan Ness

to Collieston Coast SPA, for which there was a conclusion of no AEOSI for guillemot.

- 13.6.4 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the breeding guillemot feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI for three functionally linked SPAs (Forth Islands SPA, St Abb's Head to Fast Castle SPA, and Fowlsheugh SPA) for breeding guillemot.

The Scottish Ministers conclude an AEOSI for the non-breeding guillemot feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI for three functionally linked SPAs (Forth Islands SPA, St Abb's Head to Fast Castle SPA, and Fowlsheugh SPA) for breeding guillemot.

- 13.6.5 The in-combination conclusions are presented below for information.
- 13.6.6 The Scottish Ministers also conclude an AEOSI for the breeding guillemot feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination with other OWFs based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI for functionally linked SPAs for breeding guillemot.
- 13.6.7 The Scottish Ministers also conclude an AEOSI for the non-breeding guillemot feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination with other OWFs based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI for functionally linked SPAs for breeding guillemot.

13.7 St Abb's Head to Fast Castle SPA

- 13.7.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have an AEOSI for guillemot as a qualifying feature of St Abb's Head to Fast Castle SPA.
- 13.7.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for guillemot as a qualifying feature of St Abb's Head to Fast Castle SPA.

13.7.3 The St Abbs Head to Fast Castle SPA guillemot population size of 61,408 adults, was taken from the 2016-2018 count (Table 2.6, p. 27. Appendix 11.6: [PVA Report](#)).

Table 41: Estimated annual mortality at St Abb’s Head to Fast Castle SPA guillemots from Berwick Bank Wind Farm alone (see Tables 5.32 and 5.33: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	310.2	576.1	110.8
	Immatures	311.0	574.0	109.6
Total	Adults	310.2	576.1	110.8
	Immatures	311.0	574.0	109.6
PVA	CPS	0.809	0.674	0.929
	CGR	0.994	0.989	0.998

13.7.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 33% reduction in population size, after 35 years, relative to an unimpacted population.

13.7.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude AEOSI for the guillemot feature of St Abb’s Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

13.7.6 The in-combination assessment is presented below for information.

Table 42: Estimated annual mortality at St Abb’s Head to Fast Castle SPA guillemots from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.34 and 5.35: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	371.3	696.1	135.4
		Immatures	370.4	689.1	132.9
	Total	Adults	371.3	696.1	135.4
		Immatures	370.4	689.1	132.9
	PVA	CPS	0.776	0.622	0.914
		CGR	0.993	0.987	0.998

13.7.7 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 38% reduction in population size, after 35 years relative to an unimpacted population.

13.7.8 The Scottish Ministers also conclude an AEOSI for the guillemot feature of St Abb’s Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

14 Razorbill

14.1 Mortality summary and PVA outputs

Table 43: SPA population size, estimated adult mortalities assuming Scoping Approach B 5% displacement mortality, and resulting CPS after 35 years for adult razorbill from Berwick Bank Wind Farm alone and in combination with other UK North Sea OWFs

		SPA Population size	Annual adult mortalities	Counterfactual Population Size after 35 years (CPS)
East Caithness Cliffs SPA	Alone	40,117	14.8	0.986
	In-combination	40,117	228.4	0.797
Flamborough and Filey Coast SPA	Alone	37,476	10.7	0.989
	In-combination	37,476	203.4	0.861

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Forth Islands SPA	Alone	7,878	19.0	0.905
	In-combination	7,878	90.6	0.627
Fowlsheugh SPA	Alone	17,817	23.0	0.948
	In-combination	17,817	106.8	0.778
St Abbs Head to Fast Castle SPA	Alone	3,928	14.3	0.859
	In-combination	3,928	23.5	0.794
Troup, Pennan and Lion's Heads SPA	Alone	6,054	3.3	0.979
	In-combination	6,054	15.7	0.905

14.2 East Caithness Cliffs SPA

- 14.2.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for razorbill as a qualifying feature of East Caithness Cliffs SPA.
- 14.2.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA in adherence to the Scoping Approaches, that Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for razorbill as a qualifying feature of East Caithness Cliffs SPA.
- 14.2.3 The East Caithness Cliffs SPA razorbill population size of 40,117 adults, was taken from the 2019 counts (Table 2.6, Appendix 11.6: [PVA Report](#)).

Table 44: Estimated annual mortality at East Caithness Cliffs SPA razorbills from Berwick Bank Wind Farm alone (see Tables 5.173 and 5.174: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	5.3	14.8	3.7
	Immatures	3.6	9.9	2.6
Total	Adults	5.3	14.8	3.7
	Immatures	3.6	9.9	2.6
PVA	CPS	0.995	0.986	0.996
	CGR	1.000	1.000	1.000

14.2.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 1% reduction in population size, after 35 years, relative to an unimpacted population.

14.2.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the razorbill feature of East Caithness Cliffs SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 45: Estimated annual mortality at East Caithness Cliffs SPA razorbills from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.175 and 5.176: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	113.0	228.4	47.8
		Immatures	80.3	157.7	32.2
	Total	Adults	113.0	228.4	47.8
		Immatures	80.3	157.7	32.2
	PVA	CPS	0.893	0.797	0.954
		CGR	0.997	0.994	0.999

14.2.6 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 20% reduction in population size, after 35 years, relative to an unimpacted population.

14.2.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the razorbill feature of East Caithness Cliffs SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

14.3 Flamborough and Filey Coast SPA

14.3.1 The RIAA concludes no AEOSI to the razorbill feature of Flamborough and Filey Coast SPA from Berwick Bank Wind Farm alone or in-combination with other UK North Sea OWFs. Natural England, in its response dated 7 May 2025, clarified it agreed with the conclusion of the RIAA that Berwick Bank Wind Farm alone would have no AEOSI on the razorbill feature of Flamborough and Filey Coast SPA. Natural England in its response dated 6 April 2023 and 7 May 2025 however disagreed with the conclusion of the RIAA and advised that impacts are already at a level where adverse effects cannot be ruled out. As such, when assessing Berwick Bank Wind Farm in combination with other projects, Natural England concluded AEOSI for razorbill as a qualifying feature of Flamborough and Filey Coast SPA.

14.3.2 The Flamborough and Filey Coast SPA razorbill population size of 37,476 adults, was taken from the 2015-2018 counts (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has sustained a consistent increase since at least 1987.

14.3.3 Only non-breeding season displacement mortality was assessed for razorbills from the Flamborough and Filey Coast SPA as razorbills from this SPA do not use the Berwick Bank Wind Farm array area during the breeding season.

14.3.4 In reaching their conclusions the Scottish Ministers have considered the variation in guidance and precaution in assessment methodologies between Natural England and NatureScot (see section 9.7), determining Scoping Approach B, to be appropriate towards concluding impacts to features of English SPAs as assessed.

Table 46: Estimated annual mortality at Flamborough and Filey Coast SPA razorbills from Berwick Bank Wind Farm alone (see Tables 5.192 and 5.193: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 1% mortality in non-breeding season	60% displacement / 3% mortality in non-breeding season	50% displacement / 1% mortality in non-breeding season
	Adults	3.5	10.7	2.8
	Immatures	2.5	7.6	2.0
Total	Adults	3.5	10.7	2.8
	Immatures	2.5	7.6	2.0
PVA	CPS	0.996	0.989	0.997
	CGR	1.000	1.000	1.000

14.3.5 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 1% reduction in population size, after 35 years, relative to an unimpacted population.

14.3.6 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the razorbill feature of Flamborough and Filey Coast SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

14.3.7 For the in-combination assessment of impacts from Berwick Bank Wind Farm on Flamborough and Filey Coast SPA razorbills, both breeding and non-breeding season impacts were compiled to give an annual mortality estimate.

Table 47: Estimated annual mortality at Flamborough and Filey Coast SPA razorbills from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.194 and 5.195: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	102.8	203.4	41.7
		Immatures	14.7	43.9	12.1
Berwick Bank Wind Farm + UK North Sea OWFs	Total	Adults	102.8	203.4	41.7
		Immatures	14.7	43.9	12.1
Berwick Bank Wind Farm + UK North Sea OWFs	PVA	CPS	0.930	0.861	0.968
		CGR	0.998	0.996	0.999

14.3.8 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 14% reduction in population size, after 35 years, relative to an unimpacted population.

14.3.9 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the razorbill feature of Flamborough and Filey Coast SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

14.4 Forth Islands SPA

14.4.1 NatureScot, in its response of 31 March 2023, disagreed with the conclusions of the RIAA, and instead advised that in adhering to the Scoping Approaches, it was unable to conclude that Berwick Bank Wind Farm alone would have no AEOSI for razorbill as a qualifying feature of Forth Islands SPA.

14.4.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind

Farm in combination with other Forth & Tay OWFs would have an AEOSI for razorbill as a qualifying feature of Forth Islands SPA.

14.4.3 NatureScot agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for razorbill as a qualifying feature of Forth Islands SPA.

14.4.4 The Forth Islands SPA razorbill population size of 7,878 adults, was taken from the 2015/2016 counts (Table 2.6, Appendix 11.6: [PVA Report](#)). Following a period of decline in the mid-2000s, the population has increased since 2013.

Table 48: Estimated annual mortality at Forth Islands SPA razorbills from Berwick Bank Wind Farm alone (see Tables 5.71 and 5.72: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	10.7	19.0	3.5
	Immatures	9.5	16.8	3.1
Total	Adults	10.7	19.0	3.5
	Immatures	9.5	16.8	3.1
PVA	CPS	0.946	0.905	0.982
	CGR	0.998	0.997	0.999

14.4.5 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 9% reduction in population size, after 35 years, relative to an unimpacted population. In consideration of the precaution in-built into the assessment, but in the presence of uncertainty over mass mortality events the AA is unable to conclude no AEOSI on the predictions returned.

14.4.6 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers are unable to conclude no AEOSI for the razorbill feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

14.4.7 The in-combination assessment is presented below for information.

Table 49: Estimated annual mortality at Forth Islands SPA razorbills from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.73, 5.74 and 5.75: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	44.6	76.3	13.3
		Immatures	39.8	67.8	11.7
	Total	Adults	44.6	76.3	13.3
		Immatures	39.8	67.8	11.7
	PVA	CPS	0.790	0.666	0.932
		CGR	0.993	0.989	0.998
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	49.4	90.6	17.2
		Immatures	42.6	76.2	14.1
	Total	Adults	49.4	90.6	17.2
		Immatures	42.6	76.2	14.1
	PVA	CPS	0.775	0.627	0.917
		CGR	0.993	0.987	0.998

14.4.8 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 33% reduction in population size, after 35 years, relative to an unimpacted population.

14.4.9 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 37% reduction in population size, after 35 years, relative to an unimpacted population.

14.4.10 The Scottish Ministers conclude an AEOSI for the razorbill feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.

14.5 Fowlsheugh SPA

14.5.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for razorbill as a qualifying feature of Fowlsheugh SPA.

14.5.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with both other Forth & Tay OWFs and other UK North Sea OWFs would have an AEOSI for razorbill as a qualifying feature of Fowlsheugh SPA.

14.5.3 The Fowlsheugh SPA razorbill population size of 17,817 adults, was taken from the 2016-2018 counts (Table 2.6, Appendix 11.6: [PVA Report](#)). This population has undergone a marked increase in recent years.

Table 50: Estimated annual mortality at Fowlsheugh SPA razorbills from Berwick Bank Wind Farm alone (see Tables 5.101 and 5.102: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	12.7	23.0	4.2
	Immatures	9.8	17.5	3.3
Total	Adults	12.7	23.0	4.2
	Immatures	9.8	17.5	3.3
PVA	CPS	0.971	0.948	0.990
	CGR	0.999	0.999	1.000

14.5.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 5% reduction in population size, after 35 years, relative to an unimpacted population.

14.5.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the razorbill feature of Fowlsheugh SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 51: Estimated annual mortality at Fowlsheugh SPA razorbills from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.103, 5.104 and 5.105: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	50.8	87.6	15.2
		Immatures	42.7	73.0	12.7
	Total	Adults	50.8	87.6	15.2
		Immatures	42.7	73.0	12.7
	PVA	CPS	0.885	0.809	0.963
		CGR	0.997	0.994	0.999
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	57.3	106.8	20.7
		Immatures	46.5	84.1	15.8
	Total	Adults	57.3	106.8	20.7
		Immatures	46.5	84.1	15.8
	PVA	CPS	0.873	0.778	0.953
		CGR	0.996	0.993	0.999

14.5.6 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 19% reduction in population size, after 35 years, comparative to an unimpacted population.

14.5.7 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 22% reduction in population size, after 35 years, comparative to an unimpacted population.

14.5.8 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the razorbill feature of Fowlsheugh SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.**

14.6 Outer Firth of Forth and St Andrews Bay Complex SPA

- 14.6.1 NatureScot in its response of 31 March 2023 disagreed with the conclusions of the RIAA and, in adhering to the Scoping Approaches was unable to conclude that Berwick Bank Wind Farm would in-combination have no AEOSI for non-breeding razorbill as a qualifying feature of the OFFSAB SPA. In its response of 14 May 2024, NatureScot provided further rationale on this conclusion. Based on site designation selection criteria, the area was designated for non-breeding razorbill. This density of non-breeding razorbills will reflect the populations from many different colonies and the turnover within the site. As such there is no population estimate for the designation. Consequently, it is not possible to accurately quantify the impact and as such NatureScot is unable to definitively conclude an AEOSI. In reaching its decision NatureScot considered the density estimates provided by BBWFL obtained through its digital aerial survey (development array + 2km), which indicated a significant population across the non-breeding season. NatureScot used these density estimates, knowledge from the site selection process and concerns about increased vulnerability during the non-breeding season to inform its advice. NatureScot further confirmed this position in its responses of 24 May 2024 and 7 June 2024 by highlighting that it drew on conclusions of the EIA for razorbill, whereby the assessment indicated significant in-combination effects to razorbill, which NatureScot then applied to razorbill at OFFSAB SPA. NatureScot highlights this conclusion could also be reached if considering conclusions of local colony SPAs.
- 14.6.2 In its response of 24 May 2024, NatureScot concludes no AEOSI to the razorbill feature of OFFSAB SPA from Berwick Bank Wind Farm alone, drawing its conclusions from the EIA assessment for razorbill.
- 14.6.3 The AA notes the circumstances around this feature that mean there is no population against which to quantify impacts. As such, the AA considers the information on the assessment for razorbill provided in the RIAA in a qualitative fashion relative to potential impact pathways, the potential of SPAs contributing to this non-breeding population and risk of impact during the non-breeding season.
- 14.6.4 In its advice of 7 June 2024, NatureScot highlights that with respect to the OFFSAB SPA features, many features requiring compensation via a derogation would be provided via their functionally linked colony SPA. As derogation would be required for multiple SPAs for razorbill (if the Scottish Ministers decide to proceed on the basis of a derogation under the Habitats Regulations), NatureScot considers this meets the requirement for any potential derogation for OFFSAB SPA razorbill.
- 14.6.5 The AA supports and relies on this advice from NatureScot such that razorbill impacted from OFFSAB SPA are able to be accounted for in any potential

derogation via those colonies with razorbill as a feature that the AA has concluded AEOSI or been unable to conclude no AEOSI for.

- 14.6.6 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the densities at the site, the potential for impact and subsequent population consequences of the potential effects, the precaution in the assessment and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for the non-breeding razorbill feature of OFFSAB SPA from the Berwick Bank Wind Farm alone.

The Scottish Ministers are unable to conclude no AEOSI for the non-breeding razorbill feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination.

14.7 St Abb's Head to Fast Castle SPA

- 14.7.1 NatureScot, in its response of 31 March 2023, disagreed with the conclusions of the RIAA instead concluding that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have an AEOSI for razorbill as a qualifying feature of St Abb's Head to Fast Castle SPA.
- 14.7.2 NatureScot in its response of 31 March 2023, disagreed with the conclusions of the RIAA instead concluding that in adhering to the Scoping Approaches Berwick Bank Wind Farm in combination with Forth & Tay OWFs would have an AEOSI for razorbill as a qualifying feature of St Abb's Head to Fast Castle SPA.
- 14.7.3 NatureScot agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with UK North Sea OWFs would have an AEOSI on site integrity for razorbill as a qualifying feature of St Abb's Head to Fast Castle SPA.
- 14.7.4 The St Abb's Head to Fast Castle SPA razorbill population size of 3,928 adults, was taken from the 2017-2021 counts (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has remained relatively stable since the mid-1990s.

Table 52: Estimated annual mortality at St Abb’s Head to Fast Castle SPA razorbills from Berwick Bank Wind Farm alone (see Tables 5.37 and 5.38, [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	8.3	14.3	2.6
	Immatures	8.7	15.0	2.6
Total	Adults	8.3	14.3	2.6
	Immatures	8.7	15.0	2.6
PVA	CPS	0.916	0.859	0.973
	CGR	0.998	0.996	0.999

14.7.5 The Scoping Approach B Counterfactual Population Size reported for the alone assessment translates as a 14% reduction in population size, after 35 years, relative to an unimpacted population.

14.7.6 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude AEOSI for the razorbill feature of St Abb’s Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

14.7.7 The in-combination assessment is presented below for information.

Table 53: Estimated annual mortality at St Abb’s Head to Fast Castle SPA razorbills from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.39, 5.40 and 5.41: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	9.5	16.7	3.1
		Immatures	9.6	16.7	2.9
	Total	Adults	9.5	16.7	3.1
		Immatures	9.6	16.7	2.9
	PVA	CPS	0.904	0.837	0.968
		CGR	0.997	0.995	0.999
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	11.5	23.5	4.9
		Immatures	10.9	20.6	4.1
	Total	Adults	11.5	23.5	4.9
		Immatures	10.9	20.6	4.1
	PVA	CPS	0.889	0.794	0.954
		CGR	0.997	0.994	0.999

14.7.8 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 16% reduction in population size, after 35 years, relative to an unimpacted population.

14.7.9 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 21% reduction in population size, after 35 years, relative to an unimpacted population.

14.7.10 The Scottish Ministers also conclude an AEOSI for the razorbill feature of St Abb’s Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.

14.8 Troup, Pennan and Lion’s Heads SPA

14.8.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for razorbill as a qualifying feature of Troup, Pennan and Lion’s Heads SPA.

14.8.2 NatureScot in its response of 31 March 2023, disagreed with the conclusions of the RIAA instead concluding that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with UK North Sea OWFs would have an AEOSI for razorbill as a qualifying feature of Troup, Pennan and Lion's Heads SPA.

14.8.3 The Troup, Pennan and Lion's Heads SPA razorbill population size of 6,054 adults, was taken from the 2018 counts (Table 2.6, Appendix 11.6: [PVA Report](#)). Following an increase in population size in the 1990s, this population has undergone a slight decline.

Table 54: Estimated annual mortality at Troup, Pennan and Lion's Heads SPA razorbills from Berwick Bank Wind Farm alone (see Tables 5.160 and 5.161, [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	1.4	3.3	0.7
	Immatures	1.0	2.2	0.5
Total	Adults	1.4	3.3	0.7
	Immatures	1.0	2.2	0.5
PVA	CPS	0.990	0.979	0.995
	CGR	1.000	0.999	1.000

14.8.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 2% reduction in population size, after 35 years, relative to an unimpacted population.

14.8.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the razorbill feature of Troup, Pennan and Lion's Heads SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 55: Estimated annual mortality at Troup, Pennan and Lion’s Heads SPA razorbills from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.162 and 5.163: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	6.0	15.7	4.0
		Immatures	3.9	9.8	2.5
	Total	Adults	6.0	15.7	4.0
		Immatures	3.9	9.8	2.5
	PVA	CPS	0.962	0.905	0.975
		CGR	0.999	0.997	0.999

14.8.6 The Scoping Approach B Counterfactual Population Size, reported for the UK North Sea in-combination assessment translates as 9% reduction in population size, after 35 years, relative to an unimpacted population.

14.8.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the razorbill feature of Troup, Pennan and Lion’s Heads SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

15 Puffin

15.1 Mortality summary and PVA outputs

Table 56: SPA population size, estimated adult mortalities assuming Scoping Approach B 5% displacement mortality, and resulting CPS after 35 years for adult puffin from Berwick Bank Wind Farm alone and in combination with other UK North Sea OWFs.

	Population size	Annual adult mortalities	Counterfactual Population Size after 35 years (CPS)

Forth Islands SPA	Alone	87,240	30.2	0.986
	In-combination	87,240	265.5	0.880

15.2 Forth Islands SPA

- 15.2.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for puffin as a qualifying feature of Forth Islands SPA.
- 15.2.2 NatureScot in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other UK North Sea OWFs would have an AEOSI for puffin as a qualifying feature of Forth Islands SPA.
- 15.2.3 Additionally, RSPB Scotland, in its response dated 31 March 2023 (p 29), consider potential AEOSI cannot be excluded with regard to puffin as a qualifying feature of Forth Islands SPA from Berwick Bank Wind Farm alone.
- 15.2.4 The Forth Islands SPA puffin population size of 87,240 adults, was taken from the 2017-2021 counts (Table 2.6, Appendix 11.6: [PVA Report](#)). Following a peak abundance in the early 2000s, the Forth Islands SPA puffin population has declined.
- 15.2.5 Displacement and barrier effects on the Forth Islands SPA puffin interest feature were assessed only for the breeding season, as advised in the Scoping Opinion.

Table 57: Estimated annual mortality at Forth Islands SPA puffin from Berwick Bank Wind Farm alone (see Tables 5.77 and 5.78: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season (non-breeding season not assessed)	60% displacement / 5% mortality in breeding season (non-breeding season not assessed)	50% displacement / 1% mortality in breeding season (non-breeding season not assessed)
	Adults	18.2	30.2	5.1
	Immatures	21.4	35.6	6.0
Total	Adults	18.2	30.2	5.1
	Immatures	21.4	35.6	6.0
PVA	CPS	0.991	0.986	0.998
	CGR	1.000	1.000	1.000

15.2.6 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 1% reduction in population size, after 35 years, relative to an unimpacted population.

15.2.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the puffin feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 58: Estimated annual mortality at Forth Islands SPA puffins from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs during the breeding season (see Tables 5.79 and 5.80: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	158.1	263.4	44.0
		Immatures	183.1	305.0	50.9
	Total	Adults	158.1	263.4	44.0
		Immatures	183.1	305.0	50.9
	PVA	CPS	N/A*	N/A*	N/A*
		CGR	N/A*	N/A*	N/A*
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	159.4	265.5	44.3
		Immatures	183.8	306.1	51.1
	Total	Adults	159.4	265.5	44.3
		Immatures	183.8	306.1	51.1
	PVA	CPS	0.926	0.880	0.979
		CGR	0.998	0.996	0.999

* Since apportioned mortality to OWF in the wider UK North Sea, outside of the Forth & Tay region was negligible (0.4-2.1 adults), PVA was only undertaken for the UK North Sea OWFs in combination with Berwick Bank Wind Farm.

15.2.8 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 12% reduction in population size, after 35 years, relative to an unimpacted population.

15.2.9 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the puffin feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

15.3 North Caithness Cliffs SPA

15.3.1 The RIAA concluded that in adhering to the Scoping Approaches the impacts to the puffin as a qualifying feature of North Caithness Cliffs SPA were predicted to be very small from Berwick Bank Wind Farm alone and that there

are no projects considered to have impacts to the North Caithness Cliffs puffin feature in combination.

15.3.2 RSPB Scotland, in its response dated 31 March 2023, consider potential AEOSI cannot be excluded for Berwick Bank Wind Farm in combination with other UK North Sea OWFs for puffin as a qualifying feature of North Caithness Cliffs SPA.

15.3.3 NatureScot concluded no AEOSI for Berwick Bank Wind Farm alone or in combination for puffin at North Caithness Cliffs SPA in its response dated 18 March 2024.

15.3.4 In adhering to Scoping Approach B, the puffin qualifying feature from North Caithness Cliffs SPA did not meet the 0.02% impact threshold for further assessment of impacts from Berwick Bank Wind Farm. The Scottish Ministers conclude no AEOSI on this basis.

15.4 Outer Firth of Forth and St Andrews Bay Complex SPA

15.4.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other Forth & Tay OWFs would have an AEOSI for breeding puffin as a qualifying feature of the OFFSAB SPA, via AEOSI on a contributing (functionally linked) breeding colony SPA. The RIAA provides no conclusion for OFFSAB from Berwick Bank Wind Farm alone for puffin, however NatureScot advised no AEOSI.

15.4.2 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI from Berwick Bank Wind Farm alone for breeding puffin feature of the OFFSAB SPA based on Scoping Approach B. The Scottish Ministers conclude an AEOSI in-combination for breeding puffin feature of the OFFSAB SPA based on Scoping Approach B. This conclusion is based on the conclusion of AEOSI for puffin from functionally linked SPAs.**

16 Gannet

16.1 Mortality summary and PVA outputs

Table 59: SPA population size, estimated adult mortalities assuming Scoping Approach B 3% displacement mortality, and resulting CPS after 35 years for adult

gannet from Berwick Bank Wind Farm alone and in combination with other UK North Sea OWFs.

SPA		SPA Population size	Annual adult mortality	Counterfactual Population Size after 35 years (CPS)
Forth Islands SPA	Alone	150,518	245.3	0.957
	In-combination	150,518	1,114.8	0.800
Hermaness, Saxa Vord and Valla Field SPA	Alone	51,160	4.1	N/A
	In-combination	51,160	104.3	0.920

16.1.1 In their determination of the assessment impact to gannet, the Scottish Ministers have considered the methodology undertaken, arguments presented over updated evidence, updated guidance on avoidance rate for gannet and the impacts of the HPAI pandemic. See section 9 for greater detail. The Scottish Ministers determine that the best available evidence is utilised in the gannet assessment relative to macro avoidance correction for gannet and displacement (see section 9). The Scottish Ministers also conclude that the updated guidance for avoidance rates for gannet would not change these conclusions in respect of AEOSI as determined under the Scoping Approaches results.

16.2 Forth Islands SPA

16.2.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would have no AEOSI for gannet as a qualifying feature of Forth Islands SPA.

16.2.2 NatureScot in its response of 31 March 2023, disagreed with the conclusions of the RIAA, instead concluding that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with both other Forth & Tay OWFs and other UK North Sea OWFs would have an AEOSI for gannet as a qualifying feature of Forth Islands SPA.

16.2.3 RSPB Scotland, in its response dated 31 March 2023, consider potential AEOSI cannot be excluded for Berwick Bank Wind Farm alone for gannet as a qualifying feature of Forth Islands SPA.

16.2.4 The Forth Islands SPA gannet population size of 150,518 adults, was taken from the 2014 count (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has continued to increase since first counted, although future increases may be limited by a lack of suitable nesting habitat on Bass Rock. The population has since been severely impacted from the 2022-2023 outbreaks of HPAI.

Table 60: Estimated annual mortality at Forth Islands SPA gannets from Berwick Bank Wind Farm alone (see Tables 5.44, 5.45 and 5.46: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		70% displacement / 1% mortality for all seasons	70% displacement / 3% mortality for all seasons	70% displacement / 1% mortality for all seasons
	Adults	32.1	94.2	32.1
	Immatures	2.1	6.3	2.1
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	151.1	151.1	122.8
	Immatures	4.6	4.6	3.4
Total	Adults	183.2	245.3	154.9
	Immatures	6.7	10.9	5.5
PVA	CPS	0.968	0.957	0.973
	CGR	0.999	0.999	0.999

16.2.5 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a 4% reduction in population size, after 35 years, relative to an unimpacted population.

16.2.6 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the gannet feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 61: Estimated annual mortality at Forth Islands SPA gannets from Berwick Bank Wind Farm in combination with other Forth & Tay OWFs and UK North Sea OWFs (see Tables 5.47, 5.48, 5.49 and 5.50: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + Forth & Tay OWFs	Displacement	Adults	107.0	319.2	107.0
		Immatures	4.7	13.9	4.7
	Collision	Adults	505.3	505.3	477.1
		Immatures	11.2	11.2	10.9
	Total	Adults	612.3	824.5	584.1
		Immatures	15.9	25.1	15.6
	PVA	CPS	0.897	0.863	0.901
CGR		0.997	0.996	0.997	
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	143.7	429.3	143.7
		Immatures	32.9	98.5	32.9
	Collision	Adults	685.5	685.5	657.3
		Immatures	138.3	138.3	138.0
	Total	Adults	829.2	1,114.8	801.0
		Immatures	171.2	236.8	170.9
	PVA	CPS	0.848	0.800	0.853
CGR		0.995	0.994	0.996	

16.2.7 The Scoping Approach B Counterfactual Population Size reported for the Forth & Tay in-combination assessment translates as a 14% reduction in population size, after 35 years, relative to an unimpacted population.

16.2.8 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 20% reduction in population size, after 35 years, relative to an unimpacted population.

16.2.9 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude an AEOSI for the gannet feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B.**

16.3 Hermaness, Saxa Vord and Valla Field SPA

16.3.1 NatureScot in its response of 31 March 2023 agreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would not confer an AEOSI for gannet as a qualifying feature of the Hermaness, Saxa Vord and Valla Field SPA.

16.3.2 NatureScot in its response of 31 March 2023, disagreed with the conclusions of the RIAA, instead advising that in adhering to the Scoping Approaches, it was unable to conclude that Berwick Bank Wind Farm in combination with UK North Sea OWFs would have no AEOSI for gannet as a qualifying feature of Hermaness, Saxa Vord and Valla Field SPA.

16.3.3 The Hermaness, Saxa Vord and Valla Field SPA gannet population size of 51,160 adults, was taken from the 2014 count (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has continued to increase since first counted.

Table 62: Estimated annual mortality at Hermaness, Saxa Vord and Valla Field SPA gannets from Berwick Bank Wind Farm alone (see Tables 5.271 and 5.272: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		70% displacement / 1% mortality for all seasons	70% displacement / 3% mortality for all seasons	70% displacement / 1% mortality for all seasons
	Adults	0.8	2.3	0.8
	Immatures	0.1	0.2	0.1
Collision		Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	1.8	1.8	1.3
	Immatures	0.1	0.1	0.1
Total	Adults	2.6	4.1	2.1
	Immatures	0.2	0.3	0.2
PVA	CPS	N/A	N/A	N/A
	CGR	N/A	N/A	N/A

16.3.4 The Scoping Approach B Counterfactual Population Size reported for Berwick Bank Wind Farm alone translates as a <1% reduction in population size (reported here as N/A), after 35 years, relative to an unimpacted population.

16.3.5 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude no AEOSI for the gannet feature of Hermaness, Saxa Vord and Valla Field SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 63: Estimated annual mortality at Hermaness, Saxa Vord and Valla Field SPA gannets from Berwick Bank Wind Farm in combination with other UK North Sea OWFs (see Tables 5.273, 5.274 and 5.275: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	14.3	42.8	14.3
		Immatures	11.1	33.3	11.1
	Collision	Adults	61.5	61.5	61.0
		Immatures	48.8	48.8	48.8
	Total	Adults	75.8	104.3	75.3
		Immatures	59.9	82.1	59.9
	PVA	CPS	0.941	0.920	0.942
		CGR	0.998	0.998	0.998

16.3.6 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as an 8% reduction in population size, after 35 years, relative to an unimpacted population. In consideration of the precaution in-built into the assessment, but in the presence of uncertainty over mass mortality events the AA is unable to conclude no AEOSI from the predictions returned.

16.3.7 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers are unable to conclude no AEOSI for the gannet feature of Hermaness, Saxa Vord and Valla Field SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

16.4 Outer Firth of Forth and St Andrews Bay Complex SPA

16.4.1 NatureScot, in its response of 31 March 2023, agreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, Berwick Bank Wind Farm alone would confer no AEOSI for gannet as a qualifying feature of OFFSAB SPA.

16.4.2 NatureScot in its response of 31 March 2023 disagreed with the conclusions of the RIAA, that in adhering to the Scoping Approaches, Berwick Bank Wind Farm in combination with other Forth & Tay OWFs would have an AEOSI for breeding gannet as a qualifying feature of the OFFSAB SPA, via AEOSI on a contributing (functionally linked) breeding colony SPA.

- 16.4.3 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland. **The Scottish Ministers conclude for the gannet feature of OFFSAB, no AEOSI from Berwick Bank Wind Farm alone and an AEOSI in combination with both Forth & Tay OWFs and UK North Sea OWFs based on Scoping Approach B. These conclusions are based on the conclusions for the functionally linked SPAs for gannet of no AEOSI from Berwick Bank Wind Farm alone and AEOSI in combination.**

17 Seabird assemblage

17.1 Mortality summary and PVA outputs

- 17.1.1 See individual species accounts above for quantitative impact assessments including mortality estimates and PVA outputs for component species for each SPA. Details of species which are features in their own right or listed as assemblage qualifiers only are shown in Table 9.

17.2 Buchan Ness to Collieston Coast SPA

- 17.2.1 Buchan Ness to Collieston Coast SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake and guillemot. NatureScot advised in its response (31 March 2023), in adhering to the Scoping Approaches, an AEOSI for kittiwake as a qualifying feature at Buchan Ness to Collieston Coast SPA, from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Consequently, NatureScot also advised AEOSI for kittiwake, as a named component of the breeding seabird assemblage at Buchan Ness to Collieston Coast SPA, for Berwick Bank Wind Farm in combination with other UK North Sea OWFs.

- 17.2.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for kittiwake as a named component of the seabird assemblage feature of Buchan Ness to Collieston Coast SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for kittiwake as a named component of the seabird assemblage feature of Buchan Ness to Collieston Coast SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.3 East Caithness Cliffs SPA

17.3.1 East Caithness Cliffs SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot and razorbill. NatureScot, in agreement with the conclusions of the RIAA, advised in its response (31 March 2023) in adhering to the Scoping Approaches an AEOSI for kittiwake and razorbill as qualifying features in their own right at East Caithness Cliffs SPA from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Consequently, NatureScot also advised AEOSI for kittiwake and razorbill as named components of the breeding seabird assemblage at East Caithness Cliffs SPA, for Berwick Bank Wind Farm in combination with other UK North Sea OWFs.

17.3.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of East Caithness Cliffs SPA from the Berwick Bank Wind Farm in combination with North Sea OWFs based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the razorbill feature of East Caithness Cliffs SPA from the Berwick Bank Wind Farm in combination with North Sea OWFs based on Scoping Approach B.

17.4 Farne Islands SPA

17.4.1 Natural England, in its response dated 6 April 2023, cannot rule out AEOSI for Berwick Bank Wind Farm alone for the breeding seabird assemblage (kittiwake, guillemot, and potentially puffin) as a qualifying feature of Farne Islands SPA. No comment is given on in-combination.

17.4.2 RSPB Scotland, in its response dated 31 March 2023 (p 29), consider potential AEOSI cannot be excluded for Berwick Bank Wind Farm in combination with other UK North Sea OWFs for kittiwake as a qualifying feature of Farne Islands SPA.

- 17.4.3 However, kittiwake is a named component of the seabird breeding assemblage and is not a feature in its own right.
- 17.4.4 The Farne Islands SPA breeding seabird assemblage feature includes the following named key assemblage components: guillemot, puffin, and kittiwake.
- 17.4.5 Using the Developer Approach, the RIAA identified no potential for AEOSI for the breeding seabird assemblage feature at the Farne Islands SPA from Berwick Bank Wind Farm alone or in combination with other UK North Sea OWFs. However, adhering to the Scoping Approaches, the RIAA indicated potential of an AEOSI for the kittiwake component of the breeding seabird assemblage in combination. However, the RIAA concludes no AEOSI.
- 17.4.6 Natural England advised that it was not possible to rule out AEOSI for Berwick Bank Wind Farm alone for kittiwake as a component of the breeding seabird assemblage. Additionally, Natural England advised that AEOSI could not be ruled out for guillemot and potentially puffin, as named assemblage components, due to impacts from Berwick Bank Wind Farm alone. The Natural England advice disagreed with the RIAA, which concluded that there was no AEOSI for the breeding seabird assemblage kittiwake feature, from Berwick Bank Wind Farm either alone or in combination.
- 17.4.7 In reaching their conclusions, the Scottish Ministers have considered the variation in guidance and precaution in assessment methodologies between Natural England and NatureScot (see section 9.7), determining the Scoping Approaches to be appropriate towards concluding impacts to features of English SPAs as assessed.
- 17.4.8 See individual species accounts above for quantitative impact assessments including mortality estimates and PVA outputs for guillemot at the Farne Islands SPA. Predicted mortality and PVA outputs for kittiwake and puffin at the Farne Islands SPA are presented below.
- 17.5 Kittiwake as a named component of the Farne Islands SPA breeding seabird assemblage
- 17.5.1 The Farne Islands SPA kittiwake population size of 8,804 adults, was taken from the 2019 count (Table 2.6, Appendix 11.6: [PVA Report](#)). The population has undergone a decline.

Table 64: Estimated annual mortality at Farne Islands SPA kittiwake from Berwick Bank Wind Farm alone (see Tables 5.108, 5.109 and 5.110: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated	Scoping Approach B estimated	Developer Approach estimated
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	annual mortality (individuals)	annual mortality (individuals)	annual mortality (individuals)
Displacement	30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
Adults	3.0	8.9	5.0
Immatures	0.3	0.9	0.2
Collision	Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
Adults	26.4	26.4	18.3
Immatures	1.9	1.9	1.4
Total			
Adults	29.4	35.3	23.3
Immatures	2.2	2.8	1.6
PVA			
CPS	0.911	0.894	0.930
CGR	0.997	0.997	0.998

17.5.2 The Scoping Approach B Counterfactual Population Size reported for the alone assessment translates as a 11% reduction in population size, after 35 years, relative to an unimpacted population.

17.5.3 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude AEOSI to kittiwake as a named component of the seabird assemblage feature from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

17.5.4 The in-combination assessment is presented below for information.

Table 65: Estimated annual mortality at Farne Islands SPA kittiwakes from Berwick Bank Wind Farm in combination with other UK North Sea OWFs during the breeding season (see Tables 5.111, 5.123 and 5.113: [RIAA Part 3](#)) plus PVA outputs.

	Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North	Displacement		30% displacement / 1% mortality for all seasons	30% displacement / 3% mortality for all seasons	30% displacement / 3% mortality for breeding season only
		Adults	4.8	14.3	5.0
		Immatures	1.2	3.6	0.2

Sea OWFs	Collision	Avoidance rate 0.989, basic CRM + Option 2, <u>max</u> monthly densities	same as Scoping Approach A	Avoidance rate 0.989, basic CRM + Option 2, <u>mean</u> monthly densities
	Adults	36.4	36.4	28.4
	Immatures	7.0	7.0	6.5
	Total			
	Adults	41.2	50.7	33.4
	Immatures	8.2	10.6	6.7
	PVA			
	CPS	0.869	0.840	0.893
	CGR	0.996	0.995	0.997

- 17.5.5 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 16% reduction in population size, after 35 years, relative to an unimpacted population.
- 17.5.6 The Scottish Ministers also conclude AEOSI to kittiwake as a named component of the seabird assemblage feature from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.
- 17.6 Puffin as a named component of the Farne Islands SPA breeding seabird assemblage.
- 17.6.1 In its response of 7 May 2025, Natural England clarified that it agreed with the conclusions of the RIAA, that there would be no AEOSI for the puffin named feature of the seabird assemblage qualifying feature of the Farne Islands SPA from the Berwick Bank Wind Farm alone or in combination.
- 17.6.2 In reaching their conclusions, the Scottish Ministers have considered the variation in guidance and precaution in assessment methodologies between Natural England and NatureScot (see section 9.7), determining the Scoping Approaches to be appropriate towards concluding impacts to features of English SPAs as assessed.
- 17.6.3 The Farne Islands SPA puffin population size of 87,504 adults, was taken from the 2017 count (Table 2.6, Appendix 11.6: [PVA Report](#)). Following a peak population size in the early 2000s, population size has fluctuated.
- 17.6.4 Displacement and barrier effects on the Farne Islands SPA puffin interest feature were assessed only for the breeding season, as advised in the Scoping Opinion.

Table 66: Estimated annual mortality at Farne Islands SPA puffins from Berwick Bank Wind Farm alone (see Tables 5.127 and 5.128: [RIAA Part 3](#)) plus PVA outputs.

Impact type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Displacement		60% displacement / 3% mortality in breeding season and 1% mortality in non-breeding season	60% displacement / 5% mortality in breeding season and 3% mortality in non-breeding season	50% displacement / 1% mortality for all seasons
	Adults	12.9	21.4	3.6
	Immatures	17.4	28.9	4.9
Total	Adults	12.9	21.4	3.6
	Immatures	17.4	28.9	4.9
PVA	CPS	0.994	0.990	0.998
	CGR	1.000	1.000	1.000

17.6.5 The Scoping Approach B Counterfactual Population Size reported for the alone assessment translates as a 1% reduction in population size, after 35 years, relative to an unimpacted population.

17.6.6 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude no AEOSI to puffin as a named component of the seabird assemblage feature at Farne Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.**

Table 67: Estimated annual mortality at Farne Islands SPA puffins from Berwick Bank Wind Farm in combination with other UK North Sea OWFs during the breeding season (see Tables 5.129 and 5.130: [RIAA Part 3](#)) plus PVA outputs.

	Impact Type	Age class	Scoping Approach A estimated annual mortality (individuals)	Scoping Approach B estimated annual mortality (individuals)	Developer Approach estimated annual mortality (individuals)
Berwick Bank Wind Farm + UK North Sea OWFs	Displacement	Adults	17.3	28.8	4.9
		Immatures	23.8	39.4	6.6
	Total	Adults	17.3	28.8	4.9
		Immatures	23.8	39.4	6.6
	PVA	CPS	0.992	0.986	0.998
		CGR	1.000	1.000	1.000

17.6.7 The Scoping Approach B Counterfactual Population Size reported for the UK North Sea in-combination assessment translates as a 1% reduction in population size, after 35 years, relative to an unimpacted population.

17.6.8 In reaching their conclusion, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from Natural England and RSPB Scotland. **The Scottish Ministers conclude no AEOSI to puffin as a named component of the seabird assemblage at Farne Islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.**

17.7 Forth Islands SPA

17.7.1 Forth Islands SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot, razorbill, puffin and gannet. NatureScot advised in its response (31 March 2023) in adhering to the Scoping Approaches an AEOSI for kittiwake and guillemot as qualifying features in their own right at Forth Islands SPA from Berwick Bank Wind Farm alone and in-combination.

17.7.2 NatureScot, in its response of 31 March 2023, disagreed with the conclusions of the RIAA that in adhering to the Scoping Approaches, it was unable to conclude that Berwick Bank Wind Farm alone would have no AEOSI for razorbill as a qualifying feature of Forth Islands SPA.

17.7.3 It also advised in adhering to the Scoping Approaches an AEOSI for razorbill, puffin, and gannet as qualifying features in their own right at Forth Islands SPA from Berwick Bank Wind Farm in-combination. Consequently, NatureScot also advised in adhering to the Scoping Approaches an AEOSI for the breeding seabird assemblage at the Forth Islands SPA of which these species are named components for Berwick Bank Wind Farm both alone and in-combination.

17.7.4 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the guillemot feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers are unable to conclude no AEOSI for the razorbill feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude no AEOSI for the puffin feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the puffin feature of Forth islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea Offshore OWFs based on Scoping Approach B.

The Scottish Ministers conclude no AEOSI for the gannet feature of Forth Islands SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the gannet feature of Forth islands SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.7.5 The in-combination conclusions below are presented for information for the reasons given in section 11.6.

17.7.6 The Scottish Ministers conclude an AEOSI for the kittiwake feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.7.7 The Scottish Ministers conclude an AEOSI for the guillemot feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.7.8 The Scottish Ministers conclude an AEOSI for the razorbill feature of Forth Islands SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.8 Fowlsheugh SPA

17.8.1 Fowlsheugh SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot and razorbill. NatureScot advised in its response (31 March 2023), in adhering to the Scoping Approaches an AEOSI for kittiwake and guillemot as qualifying features in their own right at Fowlsheugh SPA from Berwick Bank Wind Farm alone and in-combination. NatureScot also advised, in adhering to the Scoping Approaches, an AEOSI for razorbill, as a qualifying feature in its own right at Fowlsheugh SPA, from Berwick Bank Wind Farm in-combination. Consequently, NatureScot also advised AEOSI for kittiwake, guillemot and razorbill as named components of the breeding seabird assemblage at the Fowlsheugh SPA, for Berwick Bank Wind Farm both alone and in-combination (razorbill only in-combination).

17.8.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of Fowlsheugh SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the guillemot feature of Fowlsheugh SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude no AEOSI for the razorbill feature of Fowlsheugh SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the razorbill feature of Fowlsheugh SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.8.3 The in-combination conclusions below are presented for information for the reasons given in section 11.6.

17.8.4 The Scottish Ministers conclude an AEOSI for the kittiwake feature of Fowlsheugh SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.8.5 The Scottish Ministers conclude an AEOSI for the guillemot feature of Fowlsheugh SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.9 Hermaness, Saxa Vord and Valla Field SPA

17.9.1 Hermaness, Saxa Vord and Valla Field SPA has a breeding seabird assemblage qualifying feature which includes the following named components: gannet. NatureScot advised in its response (31 March 2023), in adhering to the Scoping Approaches, it was unable to conclude no AEOSI for gannet as a qualifying feature at Hermaness, Saxa Vord and Valla Field SPA, from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. NatureScot advised (18 March 2024) no AEOSI for gannet as a named component of the breeding seabird assemblage at Hermaness, Saxa Vord and Valla Field SPA for Berwick Bank Wind Farm alone and on 08 August 2024, NatureScot confirmed that it was unable to conclude no AEOSI for gannet as a named component of the seabird assemblage at Hermaness, Saxa Vord and Valla Field SPA from Berwick Bank Wind Farm in combination with other UK North Sea OWFs.

17.9.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for gannet as a named component of the seabird assemblage feature of Hermaness, Saxa Vord and Valla Field SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers are unable to conclude no AEOSI for gannet as a named component of the seabird assemblage feature of Hermaness,

Saxa Vord and Valla Field SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.10 North Caithness Cliffs SPA

17.10.1 North Caithness Cliffs SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot, razorbill and puffin. NatureScot advised in its response (31 March 2023), in adhering to the Scoping Approaches, an AEOSI for kittiwake as a qualifying feature in its own right at North Caithness Cliffs SPA, from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Consequently, NatureScot also advised AEOSI for kittiwake, as a named component of the breeding seabird assemblage at North Caithness Cliffs SPA, for Berwick Bank Wind Farm in combination with other UK North Sea OWFs.

17.10.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for the kittiwake feature of North Caithness Cliffs SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of North Caithness Cliffs SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.11 Outer Firth of Forth and St Andrew's Bay Complex SPA

Breeding

17.11.1 OFFSAB SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot, puffin and gannet which are also features of functionally linked SPAs. NatureScot advised in its response (31 March 2023), adhering to the Scoping Approaches, an AEOSI for kittiwake and guillemot, as qualifying features in their own right at OFFSAB SPA from Berwick Bank Wind Farm alone. Additionally, NatureScot advised, adhering to the Scoping Approaches, an AEOSI for puffin and gannet, as a qualifying features in their own right at OFFSAB SPA from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Consequently, NatureScot also advised AEOSI for kittiwake, guillemot, puffin and gannet, as named components of the breeding seabird assemblage at

OFFSAB SPA, for Berwick Bank Wind Farm in combination with other UK North Sea OWFs.

17.11.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of the functionally linked Fowlsheugh SPA, Forth Islands SPA and St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of the functionally linked Buchan Ness to Collieston Coast SPA and Troup, Pennan and Lion's Heads SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the guillemot feature of the functionally linked Fowlsheugh SPA, Forth Islands SPA and St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the puffin feature of the functionally linked Forth Islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the gannet feature of the functionally linked Forth Islands SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.11.3 The in-combination conclusions below are presented for information for the reasons given in section 11.6.

17.11.4 The Scottish Ministers conclude an AEOSI for the kittiwake feature of the functionally linked Fowlsheugh SPA, Forth Islands SPA and St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.11.5 The Scottish Ministers conclude an AEOSI for the guillemot feature of the functionally linked Fowlsheugh SPA, Forth Islands SPA and St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

Non-breeding

17.11.6 OFFSAB SPA has a non-breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot and razorbill. NatureScot advised in its response (31 March 2023), adhering to the Scoping Approaches, an AEOSI for kittiwake and guillemot at OFFSAB SPA from Berwick Bank Wind Farm alone and in combination with other UK North Sea OWFs.

17.11.7 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for the non-breeding razorbill feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the non-breeding kittiwake feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B. This conclusion is based on the counterfactual population metrics, conferring AEOSI from functionally linked SPA for breeding kittiwake.

The Scottish Ministers conclude an AEOSI for the non-breeding guillemot feature of OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B. This conclusion is based on the counterfactual population size metrics, produced for functionally linked SPA for breeding guillemot.

The Scottish Ministers are unable to conclude no AEOSI for the non-breeding razorbill feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.11.8 The in-combination conclusions below are presented for information for the reasons given in section 11.6.

17.11.9 The Scottish Ministers conclude an AEOSI for the non-breeding kittiwake feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B. This conclusion is based on the counterfactual population metrics, conferring AEOSI from functionally linked SPA for breeding kittiwake.

17.11.10 The Scottish Ministers conclude an AEOSI for the non-breeding guillemot feature of OFFSAB SPA from the Berwick Bank Wind Farm in combination

with UK North Sea OWFs based on Scoping Approach B. This conclusion is based on the counterfactual population size metrics, produced for functionally linked SPA for breeding guillemot.

17.12 St Abb's Head to Fast Castle SPA

17.12.1 St Abb's Head to Fast Castle SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot, razorbill. NatureScot advised in its response (31 March 2023) in adhering to the Scoping Approaches an AEOSI for kittiwake, guillemot, and razorbill as qualifying features in their own right, both from Berwick Bank Wind Farm alone and in combination with other UK North Sea OWFs. Consequently, NatureScot also advised in adhering to the Scoping Approaches an AEOSI for the breeding seabird assemblage of which these species are named components for both Berwick Bank Wind Farm alone and in combination.

17.12.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the razorbill feature of St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the guillemot feature of St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

17.12.3 The in-combination conclusions below are presented for information for the reasons given in section 11.6.

17.12.4 The Scottish Ministers conclude an AEOSI for the kittiwake feature of St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.12.5 The Scottish Ministers conclude an AEOSI for the razorbill feature of St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.12.6 The Scottish Ministers conclude an AEOSI for the guillemot feature of St Abb's Head to Fast Castle SPA from the Berwick Bank Wind Farm in combination with Forth & Tay and UK North Sea OWFs based on Scoping Approach B.

17.13 Troup, Pennan and Lion's Heads SPA

17.13.1 Troup, Pennan and Lion's Heads SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot and razorbill. NatureScot advised in its response (31 March 2023), in adhering to the Scoping Approaches an AEOSI for kittiwake and razorbill, as qualifying features in their own right at Troup, Pennan and Lion's Heads SPA, from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Consequently, NatureScot also advised AEOSI for kittiwake and razorbill as named components of the breeding seabird assemblage at Troup, Pennan and Lion's Heads SPA, for Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Guillemot was concluded as no AEOSI - see Table 75 for justification.

17.13.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for the kittiwake feature of the Troup, Pennan and Lion's Heads SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the kittiwake feature of Troup, Pennan and Lion's Heads SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

The Scottish Ministers conclude no AEOSI for the razorbill feature of Troup, Pennan and Lion's Heads SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

The Scottish Ministers conclude an AEOSI for the razorbill feature of Troup, Pennan and Lion's Heads SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

17.14 West Westray SPA

17.14.1 West Westray SPA has a breeding seabird assemblage qualifying feature which includes the following named components: kittiwake, guillemot and razorbill. NatureScot advised in its response (31 March 2023), in adhering to the Scoping Approaches that AEOSI could not be ruled out for kittiwake, as a qualifying feature in its own right at West Westray SPA from Berwick Bank Wind Farm alone. Additionally, NatureScot advised in adhering to the Scoping Approaches an AEOSI for kittiwake, as a qualifying feature in its own right at West Westray SPA from Berwick Bank Wind Farm in combination with other UK North Sea OWFs. Consequently, NatureScot also advised AEOSI for kittiwake, as a named component of the breeding seabird assemblage at West Westray SPA, for Berwick Bank Wind Farm in combination with other UK North Sea OWFs.

17.14.2 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers are unable to conclude no AEOSI for the kittiwake feature of the West Westray SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B.

17.14.3 The in-combination conclusion below is presented for information for the reasons given in section 11.6.

17.14.4 The Scottish Ministers conclude an AEOSI for the kittiwake feature of West Westray SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B.

18 Other seabird species

18.1 Outer Firth of Forth and St Andrews Bay Complex SPA

18.1.1 In its response dated 3 October 2023 to the [Additional Information](#), NatureScot advised that the Berwick Bank Wind Farm could have an AEOSI unless it is made subject to conditions so that the works are undertaken strictly in accordance with the following mitigation (detailed in Annex B of the NatureScot response):

- undertake monitoring within the OFFSAB SPA to better understand species distributions, populations and locations of moulting birds – this monitoring could be achieved collaboratively and should be agreed in advance;

- use monitoring results to inform spatial and / or seasonal mitigation requirements depending on selection of Ports and vessel transit routes; and
- provision of post-consent / pre-construction indicative / preferred vessel routes, including lie up or sheltering areas, which take account of monitoring results, to enable mitigation measures to be agreed.

18.1.2 If Berwick Bank Wind Farm is carried out strictly in accordance with the mitigation as described above, NatureScot concluded that Berwick Bank Wind Farm will not adversely affect the integrity of the site. Alternatively, NatureScot advised that avoiding the increase in vessel traffic within the SPA by utilising transit routes outwith the SPA is also likely to be sufficient to avoid an AEOSI.

18.1.3 In reaching their conclusions, the Scottish Ministers have considered the conservation objectives, the populations at the site, the predicted levels of impact and population consequences of the predicted effects, the precaution in the assessment methods and the consultation responses from NatureScot and RSPB Scotland.

The Scottish Ministers conclude no AEOSI for the common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted Merganser, red-throated diver, Slavonian grebe and shag features of the OFFSAB SPA from the Berwick Bank Wind Farm alone based on Scoping Approach B providing the conditions in Section 6 below are adhered to.

The Scottish Ministers conclude no AEOSI for the common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted Merganser, red-throated diver, Slavonian grebe and shag features of the OFFSAB SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs based on Scoping Approach B providing the conditions in Section 6 below are adhered to.

18.2 Other Seabird Sites/Species

18.2.1 On 18 March 2024, NatureScot advised that it agrees with the conclusions of the RIAA that there would be a likely significant effect on the following sites/species but no AEOSI either alone or in-combination.

Buchan Ness to Collieston Coast SPA

- Breeding guillemot

Copinsay SPA

- Breeding kittiwake
- Seabird assemblage

Fair Isle SPA

- Breeding gannet

- Seabird assemblage
- Fetlar SPA**
- Breeding great skua
 - Seabird assemblage
- Forth Islands SPA**
- Breeding Arctic tern
 - Breeding and non-breeding common tern
 - Breeding herring gull
 - Breeding and non-breeding lesser black-backed gull
- Fowlsheugh SPA**
- Breeding herring gull
- Foula SPA**
- Breeding great skua
 - Seabird assemblage
- Hermaness, Saxa Vord and Valla Field SPA**
- Seabird assemblage
- Hoy SPA**
- Breeding great skua
 - Breeding kittiwake
 - Breeding puffin
 - Seabird assemblage
- North Caithness Cliff SPA**
- Breeding puffin
- North Rona and Sula Sgeir SPA**
- Breeding gannet
 - Seabird assemblage
- Noss SPA**
- Breeding gannet
 - Seabird assemblage
- Outer Firth of Forth and St Andrew's Bay Complex SPA**
- Breeding Arctic tern
 - Non-breeding black-headed gull
 - Non-breeding common gull
 - Breeding common tern
 - Breeding and non-breeding herring gull
 - Non-breeding little gull
 - Breeding Manx shearwater
- St Abb's Head to Fast Castle SPA**
- Breeding herring gull
- Sule, Skerry and Sule Stack SPA**
- Breeding gannet
 - Seabird assemblage
- Troup, Pennan and Lion's Heads SPA**
- Breeding guillemot

18.2.2 Natural England advised that it agrees with the RIAA which identified a likely significant effect but no AEOSI on the following:

Farne Islands SPA

- Breeding puffin
- Breeding lesser black-backed gull
- Breeding herring gull
- Breeding razorbill

Coquet Island SPA

- Breeding kittiwake
- Breeding lesser black-backed gull
- Breeding puffin
- Breeding seabird assemblage

Flamborough and Filey Coast SPA

- Breeding gannet
- Breeding puffin
- Breeding seabird assemblage

18.2.3 Full justification for these conclusions is provided in Appendix B.

The Scottish Ministers conclude no AEOSI for the qualifying interests listed above from the Berwick Bank Wind Farm alone.

The Scottish Ministers conclude no AEOSI for the qualifying interests listed above from the Berwick Bank Wind Farm in combination with UK North Sea OWFs.

19 Migratory waterbird SPAs

19.1 In its advice (31 March 2023), NatureScot agreed with the conclusion of the RIAA that because of the low levels of predicted mortality there would be no AEOSI to migratory waterbird qualifying features of:

- Firth of Forth SPA
- Montrose Basin SPA
- Firth of Tay and Eden Estuary SPA
- Ythan Estuary, Sands of Forvie and Meikle Loch SPA
- Cameron Reservoir SPA
- Greenlaw Moor SPA
- Loch of Kinnordy SPA
- Din Moss - Hoselaw Loch SPA
- Fala Flow SPA
- Loch Leven SPA

- Gladhouse Reservoir SPA
- South Tayside Goose Roosts SPA
- Westwater SPA
- Slamannan Plateau SPA

19.2 Natural England restricted its advice dated 6 April 2023 to those sites/species where it concluded an AEOSI or where it disagreed with the conclusion of the RIAA. Natural England however clarified in its advice dated 7 May 2025 that it concluded that there would be no AEOSI on migratory waterbird features of any SPAs.

The Scottish Ministers conclude no AEOSI for the migrant waterbird features of any SPA from the Berwick Bank Wind Farm alone.

The Scottish Ministers conclude no AEOSI for the migrant waterbird features of any SPA from the Berwick Bank Wind Farm in combination with UK North Sea OWFs.

20 In-combination assessment with non-wind farm projects

20.1 The Scottish Ministers have also considered the potential for in-combination effects with Berwick Bank Wind Farm and the projects listed in Table 16, namely:

- Eastern Green Link 1 Cable
- Eastern Green Link 2 Cable
- Forth Ports Ltd – Expansion of Outer Berth, Port of Leith
- Granton Harbour Redevelopment
- Magallanes ATIR Tidal Turbine
- Meygen Tidal Turbines
- North Coast and Orkney Islands Cable Geophysical Surveys
- Nova Shetland Tidal Array, Bluemull Sound
- Orkney to Mainland Scotland – Cable Installation
- Shetland to Caithness Cable Installation

20.2 No additional in-combination effects have been identified which would lead to an AEOSI on any of the SPAs impacted by Berwick Bank Wind Farm.

21 Scottish Ministers conclusion on SPAs

21.1 The Scottish Ministers have considered the sites' conservation objectives. In particular, the Scottish Ministers have considered the potential impact of

Berwick Bank Wind Farm on the need to maintain the population of the species as a viable component of the site on the individual qualifying features of the SPAs.

21.2 AEOSI from Berwick Bank Wind Farm alone or in combination was concluded, based on Scoping Approach B, for the following breeding (or non-breeding) features and SPAs:

Alone:

- Kittiwake for Forth Islands, Fowlsheugh, OFFSAB breeding and non-breeding and St Abb's Head to Fast Castle SPAs;
- Guillemot for Forth Islands, Fowlsheugh, OFFSAB breeding and non-breeding and St Abb's Head to Fast Castle SPAs;
- Razorbill for St Abb's Head to Fast Castle SPA; and
- Seabird assemblage qualifiers for Farne Islands (kittiwake), Forth Islands (guillemot, kittiwake), Fowlsheugh (guillemot, kittiwake), breeding OFFSAB (guillemot, kittiwake), non-breeding OFFSAB (guillemot, kittiwake) and St Abb's Head to Fast Castle (guillemot, kittiwake, razorbill) SPAs.

In-combination:

- Kittiwake for Buchan Ness to Collieston Coast, East Caithness Cliffs, Flamborough and Filey Coast, North Caithness Cliffs and Troup, Pennan and Lion's Heads;
- Gannet for Forth Islands and OFFSAB breeding SPA;
- Puffin for Forth Islands and OFFSAB breeding SPAs;
- Razorbill for East Caithness Cliffs, Flamborough and Filey Coast, Fowlsheugh and Troup, Pennan and Lion's Heads SPAs; and
- Seabird assemblage qualifiers for Buchan Ness to Collieston Coast (kittiwake), East Caithness Cliffs (kittiwake, razorbill), Forth Islands (gannet, puffin), Fowlsheugh (razorbill), North Caithness Cliffs (kittiwake), OFFSAB breeding (gannet, puffin) and Troup, Pennan and Lion's Heads (kittiwake, razorbill) SPAs.

21.3 Further, the AA was unable to conclude no AEOSI based on Scoping Approach B, for the following breeding (or non-breeding) features and SPAs:

Alone:

- Guillemot for Farne Islands SPA;
- Kittiwake for West Westray SPA;
- Razorbill for Forth Islands; and
- Seabird assemblage qualifiers for Forth Islands (razorbill) and West Westray (kittiwake) SPAs.

In-combination:

- Gannet for Hermaness, Saxa Vord and Valla Field SPA;
- Razorbill for OFFSAB (non-breeding) SPA; and
- Seabird assemblage for Hermaness, Saxa Vord and Valla Field SPA (gannet) and OFFSAB non-breeding (razorbill)

- 21.4 These conclusions result from the magnitude of collision and / or displacement effects, and the population level consequences of these effects on the relevant species and SPAs.
- 21.5 The Scottish Ministers therefore conclude that Berwick Bank Wind Farm can only be consented if a derogation case is agreed under regulation 49 of the Conservation (Natural Habitats, &c.) Regulations 1994 and regulation 29 of the Conservation of Offshore Marine Habitats and Species Regulations 2017.
- 21.6 A summary of the estimated mortalities for those sites/species where AEOSI was concluded, or the AA was unable to conclude no AEOSI is included in Appendix C. Where AEOSI is concluded or the AA is unable to conclude no AEOSI based on the in-combination effects, the proportion of the impact attributable to Berwick Bank Wind Farm is the value from the assessment of Berwick Bank Wind Farm alone.

SECTION 5: APPROPRIATE ASSESSMENT OF THE IMPLICATIONS FOR SACS IN VIEW OF THE SITE'S CONSERVATION OBJECTIVES.

22 Berwickshire and North Northumberland Coast SAC – Habitats

- 22.1 The Berwickshire and North Northumberland Coast SAC is located 4.12km from the Berwick Bank Wind Farm. The RIAA identified the potential for effects to arise during the construction and decommissioning phases from sediment disturbance arising from the OEC installation including seabed preparation works. This may result in increases in suspended sediment concentrations and associated sediment deposition, i.e. smothering effects. The same pathways of impact may occur during cable maintenance in the operational phase. In addition, the RIAA identified the potential for the presence of foundation structures, associated scour protection and cable protection to affect physical processes (tidal flow and wave climate) which could result in changes to sediment transport pathways and therefore affect the habitat qualifying interests of the SAC.
- 22.2 The mudflats and sandflats not covered by seawater at low tide and large shallow inlets and bays features of the SAC are located outwith the zone of

influence from Berwick Bank Wind Farm therefore the RIAA concludes that there is no pathway of effect for these features and they will not be affected.

- 22.3 Further there is no spatial overlap of the Berwick Bank Wind Farm area with the reefs and partially submerged sea caves features so the extent and distribution of these features will not be affected. The levels of increased suspended sediment at the coast are predicted to be very low (<3mm) and dispersal will reduce this to background levels on slack tides. On this basis, the RIAA concludes that there will be no adverse effects on these features from the Berwick Bank Wind Farm.
- 22.4 In relation to the potential alteration of physical processes, the RIAA concludes that due to there being no spatial overlap between the Berwick Bank Wind Farm and the SAC, and that any changes to physical processes are predicted to be localised and not extend to the SAC, there will be no AEOSI from the Berwick Bank Wind Farm.
- 22.5 The RIAA also considers the potential for in-combination effects on the habitat qualifying interests however concludes that due to the small scale, temporary nature of any sediment plumes which are predicted to be localised to each project, there will be no in-combination effects on the Berwickshire and North Northumberland Coast SAC.
- 22.6 NatureScot in its advice dated 21 February 2023, advised that it agreed with the conclusions of the RIAA that there would be no AEOSI on the habitat qualifying interests of the Berwickshire and North Northumberland Coast SAC from the Berwick Bank Wind Farm.

The Scottish Ministers conclude no AEOSI for the habitat qualifying interests of the Berwickshire and North Northumberland Coast SAC from the Berwick Bank Wind Farm alone or in combination with other developments.

23 Background on marine mammals

- 23.1 This section summarises the approaches and methods used in the RIAA when considering whether the Berwick Bank Wind Farm could have adverse effects (either alone or in combination with other plans or projects) on the integrity of the Berwickshire and North Northumberland Coast SAC, Firth of Tay and Eden Estuary SAC, Isle of May SAC, Moray Firth SAC and/or Southern North Sea SAC.
- 23.2 The key impacts associated with the construction and decommissioning of the Berwick Bank Wind Farm were identified as injury and disturbance from

underwater noise generated from piling activities, clearance of UXO, site investigation surveys and vessel use and other activities and changes in fish and shellfish communities affecting prey availability. Furthermore, the key impacts associated with the operation and maintenance phase of the Berwick Bank Wind Farm were identified as injury and disturbance from underwater noise generated by site investigation surveys as well as vessel use and other activities and changes in fish and shellfish communities affecting prey availability.

24 Information on approaches and methods used to inform the AA

- 24.1 The assessment uses the most conservative scenario and overlays each of the predicted impacts with species specific density maps to estimate the number of animals predicted to receive noise levels sufficient to induce permanent threshold shift (“PTS”) (considered here to be equivalent to an injury to hearing), or to be disturbed. As agreed through the marine mammal Roadmap process, the population consequences of these impacts are then considered in an interim Population Consequences of Disturbance (“iPCoD”) model. This modelling framework simulates how changes in hearing resulting from PTS, and disturbance resulting in increased energetic costs or loss of feeding opportunity affect individual vital rates (i.e. breeding success and probability of survival) and the effect this has on the SACs population in the long-term.
- 24.2 The number of animals that may be disturbed from piling are estimated using dose-response curves in combination with noise contours and sound exposure levels from predictive noise modelling, and species-specific densities (see volume 2, chapter 10 of the [EIA Report](#)). For bottlenose dolphins, for which species-specific data are not available, the dose-response curve for harbour porpoise (Graham et al., 2017) was applied. For grey and harbour seals, dose-response curves were derived from the Russell et al. (2016) study. NatureScot had advised the use of the Whyte et al. (2020) dose response curve for harbour seals, but in its additional information BBWFL presented information that showed that the Russell et al. (2016) curve provided more precautionary results and so NatureScot was content. For SACs where grey seal, harbour seal and bottlenose dolphins are features, BBWFL concluded no AEOSI if the noise contours from the noise modelling did not extend into the protected sites. NatureScot advised that individuals from the SACs are protected whether they are inside or outside the SAC, but raised no concerns because BBWFL also considered animals outside the protected sites.
- 24.3 The underwater noise assessment by BBWFL considered a range of conversion factors, i.e. the amount of hammer energy converted into sound received by marine mammal receptors in predicting the impacts for PTS and

disturbance: 1% constant, 4% reducing to 0.5%, and 10% reducing to 1%. The latter was considered overly conservative and not realistic by BBWFL and was not considered as part of the assessment of effects in the EIA and RIAA. NatureScot, however, requested the 10% to 1% conversion factor scenario to be included in the iPCoD cumulative assessment, given the high uncertainty around suitable choice of conversion factor. Results showed that even with this most precautionary scenario, long-term impacts were not predicted and thus NatureScot was content with the conclusion of no AEOSI.

24.4 Advice received from NatureScot stated that the modelling framework used by BBWFL is comprehensive and constitutes an appropriate and logical approach to impact assessment based on the information presented. However, key areas of scientific uncertainty are highlighted by NatureScot, including the choice of appropriate conversion factor. Natural England’s comment on the RIAA is that it can be excluded that Berwick Bank Wind Farm will have a significant effect on marine mammals in SACs in English waters (Berwickshire and North Northumberland Coast SAC and Southern North Sea SAC) providing the work is carried out as stated in the application and following JNCC mitigation measures guidelines (2010).

25 In-combination assessment methodology

25.1 A number of other projects and plans have been considered that have the potential to cause in-combination effects. The assessment of potential in-combination effects included impacts from underwater noise from piling, site investigation surveys, UXO clearance, vessel use and other activities and changes in prey availability in the different phases of the development of the proposed project, in combination with other projects and plans. The list, as detailed below (Tables 68 and 69), is presented in the RIAA and is based upon the results of the assessment presented in volume 2, chapter 10 of the [EIA Report](#). NatureScot’s advice was that the spatial range and timescales of the other projects included in the cumulative assessment were appropriate.

Table 68: Wind farms in the Forth & Tay area and in the wider North Sea which are considered in the in-combination assessment for Berwick Bank Wind Farm for marine mammal qualifying interests.

Development	Description	Foundation type
Seagreen 1 OWF	Up to 114 WTG located 27km off the Angus coastline and 66km off the East Lothian coastline.	Suction bucket jacket foundations
Seagreen 1A OWF	Up to 36 WTG located within the Seagreen Wind Farm project	To be determined based on ground investigation works

Neart na Gaoithe OWF	Construction and operation of a wind farm for up to 54 WTG located 15.5km east of Fife Ness in the Firth of Forth. https://marine.gov.scot/ml/neart-na-gaoithe-offshore-wind-farm-revised-design	Piled steel jacket foundation with three pin piles
Inch Cape OWF	A maximum of 72 WTG will be installed 15-22km from the Angus coastline. https://marine.gov.scot/ml/inch-cape-offshore-windfarm	Monopile foundations
Blyth Demo Phase 2 OWF	Consented wind farm consisting of up to 5 floating WTG 14 km from shore	Floating foundations (type to be determined)
Moray West OWF	60 WTG and 2 OSP located 22.5km southeast off the Caithness coastline. https://marine.gov.scot/ml/moray-west-offshore-windfarm	Monopile foundations (semi-submersible)
Green Volt Floating OWF	Up to 35 floating WTGs, located on the Ettrick and Blackbird decommissioned O&G brownfield site https://marine.gov.scot/ml/green-volt-offshore-windfarm	Floating substructures (semi-submersible platform, semi-submersible barge or tension leg platform)

Table 69: Other non-wind farm projects which are considered in the in-combination assessment for Berwick Bank Wind Farm for marine mammal qualifying interests.

Eyemouth	Dredged material disposal site
Eastern Green Link 1	Installation of a HVDC cable between the Torness area in East Lothian and Hawthorn Pit in County Durham.
Eastern Green Link 2	Installation of a 436km HVDC cable between Peterhead in Aberdeenshire and Drax in North Yorkshire.
Cambois connection	Export cable from within the Berwick Bank Wind Farm array area to a landfall near Cambois, Northumberland.

25.2 The Scottish Ministers consider that the list of projects identified in the RIAA as having potential in-combination effects on SACs with Berwick Bank is appropriate.

26 Berwickshire and North Northumberland Coast SAC – Grey seal

26.1.1 The Berwickshire and North Northumberland Coast SAC supports two large discrete breeding colonies of grey seals (the Farne Isles and Fast Castle) which represent around 2.5% of the annual UK pup production. Despite

differences in the population dynamics of both breeding colonies, the overall pup production within the SAC is continuing to increase.

- 26.1.2 The potential adverse effects for grey seals in this SAC are injury and disturbance from underwater noise during piling, clearance of UXO, site investigation surveys and vessel use and other activities, as well as changes in prey availability. Taking into account the most conservative scenario and maximum grey seal densities, less than 1 grey seal was predicted to be potentially injured (PTS) (i.e. <0.1% of the Berwickshire and North Northumberland Coast SAC population). BBWFL [EIA Report](#) showed there would be a small overlap of the outer behavioural disturbance contours (135 dB) from piling with the northern part of the Berwickshire and North Northumberland Coast SAC. A maximum of 532 animals from Berwickshire and North Northumberland Coast SAC could potentially experience mild disturbance or barrier effects within their foraging range, defined as a 20km buffer around the SAC during the breeding season as per advice from NatureScot. Because it is the southern half of the SAC which is an important breeding site for grey seals, the assessment concluded that piling activities are highly unlikely to disrupt normal behaviours of grey seals in this SAC. Animals could potentially be exposed to low noise levels along the coast, but these are unlikely to lead to barrier effects or strong behavioural responses. The duration of piling could potentially overlap with up to five breeding cycles. Because piling will be intermittent and will occur over a small timespan within the construction phase, the duration of the effect in the context of life cycle of grey seals is classified as medium term. Despite this, results of the iPCoD modelling showed no potential for long-term effects on this species within the wider population.
- 26.1.3 Assessment of the remaining effect pathways investigated for underwater noise and changes in prey availability and the in-combination assessment with other developments and plans also concluded no AEOSI on the Berwickshire and North Northumberland Coast SAC.

The Scottish Ministers conclude no AEOSI for the grey seal feature of the Berwickshire and North Northumberland Coast SAC from the Berwick Bank Wind Farm alone or in combination with other developments.

27 Firth of Tay and Eden Estuary SAC – Harbour seal

- 27.1 The Firth of Tay and Eden Estuary SAC supports a breeding colony of harbour seals. The SAC population is in severe decline, with the latest count of 41 individuals in 2019 representing a 95% decline since the 1990 and 2002

counts. Sporadic counts in the Firth of Forth (SCOS 2020) suggest the decline is localised within the SAC and may not represent the trends in the overall management unit population.

- 27.2 BBWFL used the dose-response curve from Russell et al. (2016) in the RIAA. NatureScot advised BBWFL to consider the dose-response curve information from Whyte et al., (2020), which contained more up-to-date information for harbour seals compared to the Russell et al., (2016) study used. The comparative study by BBWFL concluded that using Russell et al., (2016) was a more precautionary approach, to which NatureScot agreed.
- 27.3 Taking into account the most conservative scenario and maximum harbour seal densities, less than one individual was predicted to be potentially injured by underwater noise during piling, which accounts for 2.4% of the Firth of Tay and Eden Estuary SAC population. BBWFL notes that with designed measures in place in line with recommended best practice guidelines, the risk of injury to harbour seal is negligible. The outer behavioural disturbance contours do not overlap with Firth of Tay and Eden Estuary SAC. Harbour seals in inshore waters could experience mild disturbance where these areas overlap with 135 dB disturbance contour. Up to three animals were predicted to be potentially disturbed from concurrent piling. Assuming these animals originate from the SAC, they would represent 7.3% of the Firth of Tay and Eden Estuary SAC population. Even though the population of harbour seals within the East Coast Scotland Management Unit is mainly concentrated in the Firth of Tay and Eden Estuary SAC, additional groups are also present in the Firth of Forth, Montrose Basin and coastal sites in Aberdeenshire (SCOS, 2021). BBWFL considered it highly unlikely that all potentially disturbed seals will originate from this SAC.
- 27.4 As for harbour seals in the other SACs, the duration of piling could potentially affect five breeding cycles, but the effect was classified as medium term only as the piling will be intermittent and overall occur over a small timespan within the length of the construction phase. The iPCoD modelling showed no potential for long-term effects on this species within the wider population as a result of piling.
- 27.5 The assessment presented in the RIAA concluded that elevated underwater noise from piling, investigation surveys, UXO clearance and vessel use and other activities will not result in any long-term changes in the trajectory of the population of harbour seals in this SAC. The impacts of construction, decommissioning, operation and maintenance works will be highly localised in terms of time and space to the Berwick Bank Wind Farm compared to the available foraging habitat for harbour seals within the northern North Sea, and given their highly mobile nature there will be similar suitable prey resources in

the wider area. The in-combination assessment with other developments and plans also concluded no AEOSI on the Firth of Tay and Eden Estuary SAC.

The Scottish Ministers conclude no AEOSI for the harbour seal feature of the Firth of Tay and Eden Estuary SAC from the Berwick Bank Wind Farm alone or in combination with other developments.

28 Isle of May SAC – Grey seal

28.1 The Isle of May SAC is located at the entrance of the Firth of Forth and supports the fourth largest breeding colony of grey seals in the British Isles and largest breeding colony in Scotland, comprising up to 5,900 individuals and contributing to approximately 4.5% of the annual UK pup production.

28.2 The potential impacts to grey seals in this SAC are the same as for grey and harbour seals in the other SACs, i.e. impacts from elevated underwater noise and changes in prey availability. The assessment presented in the RIAA concluded that taking into account the most conservative scenario, less than one grey seal was predicted to be potentially injured (PTS), accounting for <0.02% of the Isle of May SAC population. The assessment found no direct overlap of the behavioural noise contours with Isle of May SAC, concluding it would be highly unlikely for animals in the SAC to be within the disturbance zone during piling. BBWFL investigated the potential effects on animals in the more inshore waters outwith the SAC where it overlaps with 135dB disturbance contour, by looking at the overlap with a 20km foraging range buffer from the SAC. Based on the seal at-sea density grids from Carter et al. (2020) and the 20km buffer, a maximum of 18 animals could potentially experience mild disturbance. As with the assessment of impacts to grey seals in Berwickshire and North Northumberland Coast SAC, individuals at the site would be potentially exposed only to low noise levels, unlikely to lead to barrier effects. Results from the iPCoD modelling also showed no potential for a long-term effect on this species within the wider population.

28.3 Assessment of the remaining effect pathways investigated for underwater noise and changes in prey availability and the in-combination assessment with other developments and plans also concluded no AEOSI on the Isle of May SAC.

The Scottish Ministers conclude no AEOSI for the grey seal feature of the Isle of May SAC from the Berwick Bank Wind Farm alone or in combination with other developments.

29 Moray Firth SAC – Bottlenose dolphin

- 29.1 The Moray Firth SAC includes areas regularly used by the only known resident population of bottlenose dolphins in the North Sea. The population, which ranges along the east coast of Scotland with sightings into north-east England, is estimated to be 224 individuals based on the latest weighted mean estimate, and as advised to use as the reference population by NatureScot in its response to the HRA Stage One Screening. The proportion of the population using the SAC has declined but the overall population is increasing and their range extending (Cheney et al., 2018).
- 29.2 The potential impacts to bottlenose dolphins in this SAC include injury and disturbance from underwater noise during piling, clearance of UXO, site investigation surveys and vessel use and other activities, as well as changes in prey availability. This encompasses any significant disturbance to individuals while they are outside the SAC boundary, such as underwater noise impacts arising from wind farm construction.
- 29.3 Less than one bottlenose dolphin was predicted to be potentially injured (PTS) from piling activities in the most conservative scenario of the BBWFL assessment as presented in the RIAA. Given the coastal distribution of this population (generally in waters 2 to 20m deep and within 2km of the coast), the assessment of effects presented in the RIAA showed that it is unlikely that individuals from the SAC would be present within 43m from piling location in offshore waters and thus exposed to injury from underwater noise during piling. In terms of behavioural disturbance, the RIAA notes that the disturbance contours do not overlap with the SAC boundaries but do have the potential to overlap with the main distributional range of this population. Up to 5 animals were predicted to be potentially disturbed from concurrent piling in a maximum disturbance scenario or maximum hammer energy of 4,000 kJ, which equates to 2.2% of the bottlenose dolphin population from Moray Firth SAC. This could lead to mild disruption to normal behaviour within individuals in the population, but the assessment concluded that the behavioural disturbance is unlikely to lead to barrier effects and will not be significant. BBWFL assessment presented in the RIAA notes that the total duration of piling could potentially affect a maximum of three breeding cycles for bottlenose dolphins. Results from the iPCoD modelling (see appendix 10.4 of the [EIA Report](#)) showed very small differences in the growth trajectory between an impacted and an unimpacted population of bottlenose dolphin for all conversion factor scenarios. The differences in the results fall within the natural stochasticity of the modelled population and are not considered to be a potential for a long-term effect on this species. Given the in-combination assessment showed no long term effect, Scottish Ministers are content that the effect for the Berwick Bank Wind Farm alone will not present a population level effect for bottlenose dolphins in this region.

- 29.4 Berwick Bank Wind Farm has the potential to affect prey availability for bottlenose dolphins during construction and decommissioning. However, because the impacts will be largely restricted to the boundaries of the Berwick Bank Wind Farm area and are unlikely to affect important foraging areas within the Moray Firth SAC or Tay estuary area, the assessment concluded that the supporting habitats relevant to bottlenose dolphin and the availability of prey for bottlenose dolphin will be maintained.
- 29.5 Assessment of the remaining effect pathways and the in-combination assessment with other developments and plans through iPCoD modelling also concluded no adverse effects on the integrity of the Moray Firth SAC.
- 29.6 The Scottish Ministers are in agreement with the conclusion that there will be no AEOSI on the Moray Firth SAC from the Berwick Bank Wind Farm alone or in combination with other developments. However, the Scottish Ministers note that any activities occurring south of the distributional range as defined in the RIAA could still have a likely significant effect on the Moray Firth SAC because there is evidence that animals from this population range further south and thus would require assessment under the HRA.

The Scottish Ministers conclude no AEOSI for the bottlenose dolphin feature of the Moray Firth SAC from the Berwick Bank Wind Farm alone or in combination with other developments.

30 Southern North Sea SAC – Harbour porpoise

- 30.1 The principal conservation objective to consider in the Southern North Sea SAC is the maintenance of the harbour porpoise population as a viable component of the site. This encompasses any significant disturbance to individuals as well as supporting habitats and processes, and the maintenance of prey availability. NatureScot advised that, in the context of the Berwick Bank Wind Farm and based on the RIAA, *the activities would not extend to impacts within the Southern North Sea SAC*. This was in agreement with the Natural England advice which concluded that the application would not have a significant effect on any English SACs if works were carried out in accordance with the proposal application, and JNCC 2010 mitigation measures were followed. The JNCC guidelines and mitigation in the application, referred to by Natural England will be required as part of the piling strategy which will be conditioned.

The Scottish Ministers conclude no AEOSI for the harbour porpoise feature of Southern North Sea SAC from the Berwick Bank Wind Farm alone or in combination with other OWFs.

31 Scottish Ministers conclusion on SACs

- 31.1 With regard to piling activities and clearance of UXO, NatureScot noted agreement in principle with the proposed outline Marine Mammal Mitigation Protocol (“MMMP”) submitted alongside the EIA Report. NatureScot advised however that further detail in relation to piling activities be discussed as part of the consultation on the piling strategy and once construction design details are further refined and that further mitigation to be designed to protect in the event of a high order detonation with respect to clearance of UXO. NatureScot confirmed that mitigation would not be required for other activities including cable trenching, cable laying or jack up activity.
- 31.2 The Scottish Ministers are in agreement with the advice provided by NatureScot and conclude that there will be no adverse effect on site integrity of the Berwickshire and North Northumberland Coast SAC, Firth of Tay and Eden Estuary SAC, Isle of May SAC, Moray Firth SAC or Southern North Sea SAC from the Berwick Bank Wind Farm alone or in combination with other plans or projects. The necessary mitigation will be required to be delivered in accordance with the conditions outlined in Section 6 below which will be included on both the relevant marine licence(s) and section 36 consent (if granted).

SECTION 6: CONDITIONS

32 Conditions required to prevent AEOSI

- 32.1 The requirement for the below conditions is as a result of commitments in the EIA and HRA Reports, along with NatureScot’s advice regarding mitigation measures to ensure that there will be no AEOSI on the Berwickshire and North Northumberland Coast SAC, Firth of Tay and Eden Estuary SAC, Isle of May SAC, Moray Firth SAC, Southern North Sea SAC, Cameron Reservoir SPA, Copinsay SPA, Coquet Island SPA, Din Moss – Hoselaw Loch SPA, Fair Isle SPA, Fala Flow SPA, Fetlar SPA, Firth of Forth SPA, Firth of Tay and Eden Estuary SPA, Foula SPA, Gladhouse Reservoir SPA, Greenlaw Moor SPA, Holburn Lake and Moss SPA, Hoy SPA, Loch Leven SPA, Loch of Kinnordy SPA, Lindisfarne SPA, Montrose Basin SPA, North Rona and Sula Sgeir SPA, Northumbria Coast SPA, Noss SPA, Slamannan Plateau SPA, South Tayside Goose Roosts SPA, Sule Skerry and Sule Stack SPA, Ythan Estuary, Sands of Forvie and Meikle Loch SPA and Westwater SPA. The mitigation measures in the conditions below would not change the AA conclusion of AEOSI, or unable to conclude no AEOSI, on the Buchan Ness to Collieston Coast SPA, East Caithness Cliffs SPA, Farne Islands SPA, Flamborough and Filey Coast

SPA, Forth Islands SPA, Fowlsheugh SPA, Hermaness, Saxa Vord and Valla Field SPA, North Caithness Cliffs SPA, OFFSAB SPA, St Abb's Head to Fast Castle SPA, Troup, Pennan and Lion's Heads SPA and West Westray SPA.

32.2 The conditions below relate to HRA concerns as well as covering other interests. The conditions here are written in their complete form and so may also refer to non-HRA interests. Where reference is made to other conditions, these are numbered as per the condition numbers which will be used in the section 36 consent if granted. Defined terms used in the conditions below will have the meaning given to them in the section 36 consent, if granted.

32.2.1 **Duration of the Consent**

The consent is for a period of 35 years from the date of Final Commissioning of the Development.

Written confirmation of the date of First Commissioning of the Development must be provided by the Developer to the Scottish Ministers and to Angus Council, Dundee City Council, East Lothian Council, Fife Council, Scottish Borders Council and Northumberland Council no later than one calendar month after this date.

32.2.2 **Piling Strategy**

If piling is to be undertaken, the Developer must, no later than six months prior to the Commencement of the Development, submit a Piling Strategy ("PS"), in writing, to the Scottish Ministers for their written approval. Commencement of the Development cannot take place until such approval is granted. Such approval may only be granted following consultation by the Scottish Ministers with NatureScot and any such other advisors as may be required at the discretion of the Scottish Ministers.

The PS must include:

- a) Details of expected noise levels from pile-drilling/driving in order to inform point d) below;
- b) Full details of the proposed method and anticipated duration of piling to be carried out at all locations;
- c) Details of soft-start piling procedures and anticipated maximum piling energy required at each pile location; and
- d) Details of any mitigation such as Passive Acoustic Monitoring ("PAM"), Marine Mammal Observers ("MMO"), use of Acoustic Deterrent Devices ("ADD") and monitoring to be employed during pile-driving, as agreed by the Scottish Ministers.

- e) Details relating to necessary Marine Mammal Mitigation Protocols for pile-drilling/driving

The PS must be in accordance with the Application and must also reflect any relevant monitoring or data collection carried out after submission of the Application. The PS must demonstrate the means by which the exposure to and/or the effects of underwater noise have been mitigated in respect to harbour porpoise, bottlenose dolphin, white-beaked dolphin, minke whale, grey seal, harbour seal and diadromous fish. The PS must, so far as is reasonably practicable, be consistent with the Environmental Management Plan (“EMP”), the Project Environmental Monitoring Programme (“PEMP”) and the Construction Method Statement (“CMS”).

32.2.3 **Monitoring within the Outer Firth of Forth and St Andrews Bay Complex Special Protection Area**

If the Developer intends to route vessel traffic within the Outer Firth of Forth and St Andrews Bay Complex Special Protection Area (“OFFSAB”), the Developer must, prior to the commencement of construction, undertake pre-construction monitoring within the OFFSAB for common scoter, velvet scoter, eider, long-tailed duck, goldeneye, red-breasted merganser, red-throated diver, Slavonian grebe and shag to understand species distributions, populations and locations of moulting birds.

The Developer must submit a monitoring plan for the OFFSAB (“OFFSAB Monitoring Plan”), in writing, to the Scottish Ministers for their written approval. Monitoring cannot take place until such approval is granted. Such approval may only be granted following consultation by the Scottish Ministers with NatureScot, and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The OFFSAB Monitoring Plan must include but not be limited to the following:

- a) A detailed description of the monitoring to be undertaken;
- b) Timescales for monitoring results to be submitted to the Scottish Ministers; and
- c) Details of how the monitoring results will be used to inform spatial and/or seasonal mitigation requirements to be set out in the Vessel Management Plan (“VMP”) depending on selection of port(s) and vessel transit routes.

The Developer must ensure that the results of the OFFSAB monitoring are available no later than six months prior to the commencement of the Development to inform the mitigation measures set out in the VMP. The

Development shall only be commenced where the Scottish Ministers have confirmed to the Developer that the monitoring requirements have been met and that the mitigation measures to be taken are satisfactory.

32.2.4 **Vessel Management Plan**

The Developer must, no later than six months prior to the Commencement of the Development, submit a VMP in writing, to the Scottish Ministers for their written approval. Commencement of the Development cannot take place until such approval is granted. Such approval may only be granted following consultation by the Scottish Ministers with NatureScot, MCA, SFF, RYA, CoS and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The VMP must include the following details:

- a) The number, types and specification of vessels required;
- b) How vessel management will be coordinated, particularly during construction, but also during operation; and
- c) Location of working port(s), the routes of passage (including lie up and sheltering areas), how often vessels will be required to transit between port(s) and the site and indicative vessel transit corridors proposed to be used during construction and operation of the Development.

If the Developer intends to route vessel traffic within the OFFSAB, the VMP must be informed by the results of monitoring as set out in the approved OFFSAB Monitoring Plan described in condition XX and must include spatial and/or seasonal mitigation depending on selection of ports and vessel transit routes.

The confirmed individual vessel details must be notified to the Scottish Ministers in writing no later than 14 days prior to the Commencement of the Development, and thereafter, any changes to the details supplied must be notified to the Scottish Ministers, as soon as practicable, prior to any such change being implemented in the construction or operation of the Development.

The VMP should refer to the Scottish Marine Wildlife Watching Code and Guide to Best Practice for Watching Marine Wildlife for guidance on how vessels should behave around aggregations of birds on the water.

The VMP must, so far as is reasonably practicable, be consistent with the OFFSAB Monitoring Plan, the CMS, the EMP, the PEMP, the Navigational Safety Plan, and the Lighting and Marking Plan.

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APPENDIX A: SPECIES SUMMARY INFORMATION

33 Kittiwake

Table 70: Kittiwake summary table (Scoping Approach B). * Seasonal Peak within Berwick Bank Wind Farm Array + 2km

Variable	Value
Breeding Season	Mid-April to August
Non-breeding Season	September to mid-April
Spring Migration	January to April
Autumn Migration	August to December
Breeding Mean (Max) Seasonal Peak*	21,141 (24,949) individuals
Non-breeding Mean (Max) Seasonal Peak*	18,279 (19,383) individuals
Spring Migration Mean (Max) Seasonal Peak*	13,766 (17,174) individuals
Autumn Migration Mean (Max) Seasonal Peak*	11,190 (19,383) individuals
Breeding adult/imm/ juv	0.97 / 0.02 / 0.01
Non breeding ad/ imm/ juv	0.82 / 0.07 / 0.11
Annual collision mortality	986 individuals
Avoidance rate	0.989
Displacement rate	30%
Breeding season displacement matrix, 1% Mortality	64 individuals
Breeding season displacement matrix, 3% Mortality	191 individuals
Non-Breeding season displacement matrix, 1% Mortality	48 individuals
Non-Breeding season displacement matrix, 3% Mortality	143 individuals
Spring Migration displacement matrix, 1% Mortality	41 individuals
Spring Migration displacement matrix, 3% Mortality	124 individuals
Autumn Migration displacement matrix, 1% Mortality	34 individuals
Autumn Migration displacement matrix, 3% Mortality	101 individuals

Breeding season apportioning – St Abb’s Head to Fast Castle SPA	0.522
Breeding season apportioning – Fowlsheugh SPA	0.172
Percentage of adult individuals in DAS	97%
Autumn Migration apportioning – East Caithness Cliffs SPA ad/imm	0.058 / 0.034
Autumn Migration apportioning – Flamborough and Filey Coast SPA ad/imm	0.054 / 0.032
Spring Migration apportioning – East Caithness Cliffs SPA ad/imm	0.077 / 0.034
Spring Migration apportioning – Flamborough and Filey Coast SPA ad/imm	0.072 / 0.032
Sabbatical birds	10%

34 Guillemot

Table 71: Guillemot summary table (Scoping Approach B). *Berwick Bank Wind Farm Array + 2km with counts corrected for Availability Bias. It is not possible to estimate age classes for guillemots recorded by Digital Aerial Survey.

Variable	Value
Breeding Season	April to mid-August
Non-breeding Season	Mid-August to end of March
Breeding Mean (Max) Seasonal Peak*	74,154 (94,806) individuals
Non-breeding Mean (Max) Seasonal Peak*	44,171 (44,194) individuals
Displacement rate	60 %
Breeding season displacement matrix, 3% Mortality	1,335 individuals
Breeding season displacement matrix, 5% Mortality	2,225 individuals
Non-Breeding season displacement matrix, 3% Mortality	266 individuals
Non-Breeding season displacement matrix, 5% Mortality	796 individuals
Breeding season apportioning – St Abb’s Head to Fast Castle SPA	0.416
Breeding season apportioning – Fowlsheugh SPA	0.359
Non-Breeding season apportioning – St Abb’s Head to Fast Castle SPA	0.330
Non-Breeding season apportioning – Fowlsheugh SPA	0.223

Sabbatical birds	7%
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35 Razorbill

Table 72: Razorbill summary table (Scoping Approach B). *Berwick Bank Wind Farm Array + 2km with counts corrected for Availability Bias. It is not possible to estimate age classes for razorbills recorded by Digital Aerial Survey.

Variable	Value
Breeding Season	Apr – Mid Aug
Non-breeding Season	Mid Aug - End Mar
Spring Migration	Jan - Mar
Autumn Migration	Aug - Oct
Winter	Nov - Dec
Breeding Mean (Max) Seasonal Peak*	4,040 (4,820) individuals
Non-breeding Mean (Max) Seasonal Peak*	12,359 (15,587) individuals
Spring Migration Mean (Max) Seasonal Peak*	7,480 (9,130) individuals
Autumn Migration Mean (Max) Seasonal Peak*	8,849 (15,587) individuals
Winter Mean (Max) Seasonal Peak*	1,399 (2,165) individuals
Displacement rate	60 %
Breeding season displacement matrix, 3% Mortality	73 individuals
Breeding season displacement matrix, 5% Mortality	122 individuals
Non-Breeding season displacement matrix, 3% Mortality	53 individuals
Non-Breeding season displacement matrix, 5% Mortality	157 individuals
Spring Migration displacement matrix, 3% Mortality	45 individuals
Spring Migration displacement matrix, 5% Mortality	135 individuals
Autumn Migration displacement matrix, 3% Mortality	53 individuals
Autumn Migration displacement matrix, 5% Mortality	159 individuals
Winter displacement matrix, 3% Mortality	8 individuals
Winter displacement matrix, 5% Mortality	25 individuals

Breeding season apportioning – Fowlsheugh SPA	0.292
Breeding season apportioning – Forth Islands SPA	0.265
Breeding season apportioning – St Abb’s Head SPA	0.231
Autumn/Spring Migration apportioning – East Caithness Cliffs SPA ad/imm	0.042 / 0.029
Autumn/Spring Migration apportioning – Flamborough and Filey Coast SPA ad/imm	0.034 / 0.025
Winter apportioning – East Caithness Cliffs SPA ad/imm	0.034 / 0.009
Winter apportioning – Flamborough and Filey Coast SPA ad/imm	0.027/ 0.007
Sabbatical birds	7%

36 Puffin

Table 73. Puffin summary table (Scoping Approach B). *Berwick Bank Wind Farm Array + 2km with counts corrected for Availability Bias. It is not possible to estimate age classes for puffins recorded by Digital Aerial Survey.

Variable	Value
Breeding Season	Apr – Mid Aug
Breeding Mean (Max) Seasonal Peak*	4,513 (6,280) individuals
Displacement rate	60 %
Breeding season displacement matrix, 3% Mortality	82 individuals
Breeding season displacement matrix, 5% Mortality	136 individuals
Breeding season apportioning – Forth Islands SPA	0.500
Breeding season apportioning – the Farne Islands SPA	0.382
Sabbatical birds	7%

37 Gannet

Table 74. Gannet summary table (Scoping Approach B). *Mean Seasonal Peak within Berwick Bank Wind Farm Array + 2km

Variable	Value
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Breeding season	Mid-March to end September
Non-breeding season	October to mid-March
Spring Migration	December to mid-March
Autumn Migration	October to end November
Breeding Mean (Max) Seasonal Peak*	4,735 (5,020) individuals
Non-breeding Mean (Max) Seasonal Peak*	1,500 (1,919) individuals
Spring Migration Mean (Max) Seasonal Peak*	269 (321) individuals
Autumn Migration Mean (Max) Seasonal Peak*	1,500 (1,919) individuals
Breeding adult/imm/ juv	0.99 / 0.01 / 0
Non breeding ad/ imm/ juv	0.96 / 0.02 / 0.02
Annual collision mortality (deterministic Band CRM, Option 2 (basic model, generic flight heights)	191
Avoidance rate	0.989
Displacement rate	70%
Breeding season displacement matrix, 1% Mortality	34 birds
Breeding season displacement matrix, 3% Mortality	100 birds
Spring Migration displacement matrix, 1% Mortality	2
Spring Migration displacement matrix, 3 % Mortality	6
Autumn Migration displacement matrix, 1% Mortality	11
Autumn Migration displacement matrix, 3% Mortality	32
Breeding season apportioning – Forth Islands SPA	0.971
Breeding season apportioning – Flamborough and Filey Coast SPA	0.013

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Autumn Migration apportioning – Forth Islands SPA ad/imm	0.18 / 0.15
Spring Migration apportioning – Forth Islands SPA ad/imm	0.33 / 0.10
Sabbatical birds	10%

APPENDIX B: JUSTIFICATION FOR SPAS NOT TAKEN THROUGH FOR FULL ASSESSMENT

Table 75: Justification for conclusion of no AEOSI as assessed in the RIAA (codes below table)

SPA	Feature	Breeding/ non- breeding	Reason for no AEOSI
Copinsay SPA	Kittiwake	Br	<p>NP – RIAA states potential effects from Berwick Bank Wind Farm expected to be small, and likely within the natural variation of the population alone, in-combination effects are limited to displacement/barrier effects and collision risk during operation and maintenance.</p> <p>AMC - 0.02% of adults alone, 0.12% in combination.</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.005-0.01% alone, rising to 0.02-0.06% in combination.</p>
	Seabird assemblage	Br	NESA - Kittiwake
Coquet Island SPA	Kittiwake	Br	<p>SS35 alone and in combination.</p> <p>AMC – 0.03% of adults alone, 0.17% in combination.</p> <p>NIP</p> <p>LSD</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.07-0.15% alone, rising to 0.22-0.74% in combination.</p>
	Lesser-black backed gull	Br	<p>SS35 alone, no population level impacts stated in combination.</p> <p>AMC – 0.03% of the adults alone. No projects are considered to have effects (in combination) on this population.</p> <p>PFB</p>
	Puffin	Br	<p>NP alone or in combination.</p> <p>LIP</p> <p>LSD</p> <p>LPD-CD – during operation and maintenance the potential annual mortality from this population is predicted to be 0.007-0.012% alone. No additional effects were concluded in combination.</p>
	Seabird assemblage	Br	NESA – roseate tern, common tern, Sandwich tern, Arctic tern, puffin, black-headed gull, fulmar, herring gull, lesser black-backed gull and kittiwake.
Fair Isle SPA	Gannet	Br	SS35 alone or in combination– specifically, 0.8 individuals or 0.008% of the adult population is thought will be lost due to

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			<p>displacement and collision, in combination a 5.7% reduction could occur over 35 years.</p> <p>AMC – 0.004% of adults alone, 0.09% in combination.</p> <p>NIP</p> <p>LSD</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.002-0.004% alone, rising to 0.02-0.06% in combination.</p>
	Seabird assemblage	Br	NESA – no named features.
Farne Islands SPA	Herring gull	Br	<p>SS35 alone and in combination.</p> <p>AMC - 0.04% of the adults alone, no additional impacts stated in combination.</p> <p>PFB</p>
	Kittiwake	Br	<p>NB – Natural England considered kittiwake feature of seabird assemblage as unable to conclude no AEOSI.</p> <p>SS35 alone, with no additional impacts stated in combination.</p> <p>AMC – 0.21% of adults alone, 0.32% in combination.</p> <p>NIP</p> <p>LSD</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.03-0.10% alone, rising to 0.05-0.16% in combination.</p>
	Lesser-black backed gull	Br	<p>SS35 alone and in combination.</p> <p>AMC - 0.04% of the adults alone. No additional effects stated in combination.</p> <p>PFB</p>
	Puffin	Br	<p>SS35 alone and in combination.</p> <p>LIP</p> <p>LSD</p> <p>LPD-CD – during operation and maintenance the potential annual mortality from this population is predicted to be 0.01-0.02% alone, rising to 0.02-0.03% in combination.</p>
	Razorbill	Br	<p>SS35 alone or in combination.</p> <p>LIP</p> <p>MSD</p>

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			LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.03-0.09% alone, rising to 0.10-0.31% in combination.
Fetlar SPA	Great skua	Br	NP alone or in combination – specifically state negligible effects. AMC – 0.019% of adults alone and the effects in combination are expected to be small.
	Seabird assemblage	Br	NESA – Great skua.
Flamborough and Filey Coast SPA	Gannet	Br	NP alone. In combination the population is expected to be smaller than one without windfarm effects after 35 years, although a statement of no AEOSI was concluded. AMC – >0.01% of adults alone, 1.06% in combination. NIP LSD LPD-CD - during operation and maintenance the additional annual mortality is predicted to be >0.01% alone, rising to 0.25 – 0.76% in combination. Combined displacement and collision effects could lead to 0.011 – 0.017% additional annual mortality alone (operation and maintenance).
	Puffin	Br	NP alone, not assessed in combination. LIP LSD LPD-CD – during operation and maintenance the potential annual mortality from this population is predicted to be >0.01% alone, not assessed in combination.
	Seabird assemblage	Br	NESA - puffin.
Forth Islands SPA	Arctic tern	Br	NP alone and in combination BBR . Just 0.13 birds are predicted to be affected during the non-breeding period when analysed alone. Not analysed in combination. LCPA LSD LPD-AP
	Common tern	Br Non-br Br	NP alone and in combination BBR . Just 0.5 birds are predicted to be affected during the non-breeding period when analysed alone. Not analysed in combination. LCPA

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			<p>LSD</p> <p>LPD-AP</p>
	Herring gull	Br	<p>SS35 alone and in combination.</p> <p>AMC - 0.14% of the adults alone, this increases to 0.19% when in combination.</p> <p>PFB</p> <p>Any adverse effects from Berwick Bank Wind Farm alone are limited to collision mortality during operation and maintenance. For other effect pathways, there is considered to be no potential for an adverse effect on this population as a result of Berwick Bank Wind Farm alone or in combination, with any such effects likely to be small and of little, or no, consequence in terms of impacts at the population level.</p>
	Lesser black-backed gull	Br Br/non-br	<p>SS35 alone and in combination.</p> <p>AMC - 0.06% of the adults alone. In combination, collision effects are overstated at 365 individuals – with 2% from this population.</p> <p>PFB</p>
Fowlsheugh SPA	Herring gull	Br	<p>SS35 alone and in combination.</p> <p>AMC – 0.07% of adults alone, 0.11% in combination.</p> <p>PFB</p>
Foula SPA	Great skua	Br	<p>NP alone or in combination – specifically state negligible effects.</p> <p>AMC – 0.002% of adults alone and 0.002% in combination.</p>
	Seabird assemblage	Br	NESA – Great skua.
Hermaness, Saxa Vord and Valla Field SPA	Great skua	Br	<p>NP alone or in combination.</p> <p>AMC - 0.018% of adults alone, no more than 0.002% of the adult population is stated will be affected in combination.</p>
	Seabird assemblage	Br	NESA – specifically, with the exception of great skua and gannet, the other seabird species making up the assemblage were determined to have no likely significant effect. Great skua and gannet were assessed separately and found to have no AEOSI for the project alone or in combination.
Hoy SPA	Great skua	Br	<p>NP alone or in combination– specifically states that potential effects and subsequent population impacts were predicted to be negligible.</p> <p>AMC - 0.016% of adults alone, no adverse effects expected in combination.</p>
	Kittiwake	Br	The RIAA predicted that population level impacts of Berwick Bank Wind Farm alone would be small, and in combination the effects would be limited to the displacement/barrier effect and collision risk during operation and maintenance. These effects are predicted to be small and not result in an adverse effect on this population. Given this, it is concluded that the effects from Berwick Bank Wind Farm alone would not result in an AEOSI of this SPA population.

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			<p>AMC - 0.06% of adults alone, 0.25% in combination.</p> <p>NIP</p> <p>LSD</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.016% alone, rising to 0.05-0.14% in combination.</p>
	Puffin	Br	<p>NP alone or in combination.</p> <p>LIP</p> <p>LSD</p> <p>LPD-CD – during operation and maintenance the potential annual mortality from this population is predicted to be 0 adults and 0 immatures. No additional effects were concluded in combination.</p>
	Seabird assemblage	Br	<p>NESA – Kittiwake, great skua and puffin.</p>
North Caithness Cliffs SPA	Puffin	Br	<p>NP alone or in combination.</p> <p>LIP</p> <p>LSD – specifically stated that some direct disturbance will occur during the 8-year long construction phase, although these will be temporary and lead to no adverse effects. Similar effects stated during operation.</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.003% alone, effects in combination were considered to be inconsequential.</p>
North Rona and Sula Sgeir SPA	Gannet	Br	<p>SS35 alone or in combination– specifically, 0.003% of the adult population is thought will be lost due to displacement and collision alone, in combination a 1.1% reduction could occur over 35 years.</p> <p>AMC – 0.002% of adults alone, 0.02% in combination.</p> <p>NIP</p> <p>LSD</p> <p>LPD-CD - during operation and maintenance the additional annual mortality is predicted to be <0.001-0.002% alone, rising to 0.004-0.012% in combination.</p>
	Seabird assemblage	Br	<p>NESA – no named features.</p>
Noss SPA	Gannet	Br	<p>SS35 alone or in combination– specifically, 0.006-0.009% of the adult population is thought will be lost due to displacement and collision alone, in combination a 6.8% reduction could occur over 35 years.</p> <p>AMC – 0.004% of adults alone, 0.1% in combination.</p> <p>NIP</p> <p>LSD</p>

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			LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.002-0.005% alone, rising to 0.024-0.073% in combination.
	Seabird assemblage	Br	NESA – no named features.
Outer Firth of Forth and St Andrew's Bay Complex SPA	Arctic tern	Br	No adverse effects concluded due to no adverse effects determined for the Forth Islands SPA and CFL .
	Black-headed gull	Non-br	NP – specifically, impacts will be small and temporary, impacting a small proportion of the population. GOP LSD It was concluded that as black-headed gulls primarily do not occur in the area of the SPA likely to undergo long-term habitat loss due to project alone or in combination effects, no adverse effects will occur.
	Common gull	Non-br	NP – specifically, impacts will be small and temporary, impacting a small proportion of the population. GOP LSD It was concluded that common gulls primarily do not occur in the area of the SPA likely to undergo long-term habitat loss, and therefore will not be impacted from Berwick Bank Wind Farm alone or in combination.
	Common tern	Br	No adverse effects concluded due to no adverse effects determined for the Forth Islands SPA or Leith Docks SPA and CFL .
	Herring gull	Br and non-br	No adverse effects concluded due to no adverse effects determined for the Forth Islands SPA, St Abb's Head to Fast Castle SPA and Fowlsheugh SPA and CFL .
	Little gull	Non-br	NP – specifically, impacts will be small and temporary, impacting a small proportion of the population. GOP LSD It was concluded that the effects of long-term habitat loss on the SPA due to Berwick Bank Wind Farm alone and in combination scenarios are likely to be undetectably small for little gull.
	Manx shearwater	Br	NP – specifically, impacts will be small and temporary, impacting a small proportion of the population. Manx shearwaters are stated to be opportunistic feeders, shown to have flexibility in the foraging areas they use for plunge and pursuit diving. Therefore, any change in prey availability is likely to be localised and temporary for all phases in both Berwick Bank Wind Farm alone and in combination scenarios. LSD It was stated that the effects of long-term habitat loss on the SPA due to Berwick Bank Wind Farm alone and in

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			combination scenarios are likely to be undetectably small for Manx shearwater.
St Abb's Head to Fast Castle SPA	Herring gull	Br	SS35 alone and in combination. AMC - 0.12% of the adults alone, this increases to 0.17% when in combination. Other collision mortality was judged to be minimal. PFB
Sule, Skerry and Sule Stack SPA	Gannet	Br	NP alone or in combination– specifically, 0.004-0.005% of the population would be affected by displacement and collision alone, rising to 0.015-0.021% in combination. AMC - 0.003% of adults alone, 0.01% in combination. NIP LSD LPD-CD - during operation and maintenance the additional annual mortality is predicted to be <0.001-0.002% alone, rising to 0.003-0.009% in combination.
	Seabird assemblage	Br	NESA – no named features.
Troup, Pennan and Lion's Heads SPA	Guillemot	Br	SS35 alone and in combination. This population is expected to increase over 35 years under all scenarios. It was stated that sandeel and clupeid prey may be affected by Berwick Bank Wind Farm, but that this is unlikely to cause any issues due to the relatively large distance of the development from this population, with any effects being intermittent and temporary in nature. MSD LPD-CD - during operation and maintenance the additional annual mortality is predicted to be 0.02-0.03% alone, rising to 0.07-0.15% in combination.

All metrics stated are according to the Scoping Approaches (range A-B).

Code **AMC** → when analysed alone the annual mortality of adults from this SPA population predicted due to collision with wind turbines in the Berwick Bank Wind Farm represent XXX% of the adults expected to breed at this colony.

Code **BBR** → The RIAA states that the Berwick Bank Wind Farm is beyond the likely breeding season foraging range for this population/little overlap with the population is expected, therefore there is little to no potential for collision mortality.

Code **CFL** → As these colonies are functionally linked to the OFFSAB SPA it could be assumed that the effects from the project alone and in-combination scenarios would not result in an adverse effect on this population.

Code **GOF** → It is stated that these gull species are opportunistic feeders and feed on the sea surface, and that any change in prey availability would be likely to be localised and temporary for all phases in both project alone and in-combination scenarios.

Code **LCPA** → When investigating prey availability, the limited potential for connectivity between the Berwick Bank Wind Farm and this population, together with any effects being intermittent, spatially-restricted and temporary in nature, it is considered that there is no potential changes in prey availability to lead to an adverse effect during any stage.

Code **LIP** → It was stated there are several ways prey may be affected during construction and decommissioning as well as during operation, but it was considered there would be relatively little impact to this population.

Code **LPD-AP** → It was considered that there would be little potential for this feature's population to be affected by displacement during any phase (consenting and decommissioning or operation and maintenance), with little overlap expected for the breeding season foraging range.

Code **LPD-CD** → It was considered that there would be little potential for this feature's population to be affected by displacement during the consenting and decommissioning phases, with little overlap and temporary nature of the works.

Code **LSD** → It was concluded that due to this species relatively low sensitivity to disturbance effects, the small areas of overlap and the temporary nature of the disturbance at all phases would lead to no adverse effects.

Code **MSD** → Although this species has a moderate sensitivity to disturbance, the distance of this colony from the Berwick Bank Wind Farm in combination with the small areas of disturbance that will be temporary in nature, the RIAA was able to conclude no adverse effects for this population.

Code **NESA** → The RIAA stated for both the Scoping Approach and the Developer Approach, that the assessments undertaken identified no potential for adverse effects on the named features for the project alone or in combination with other plans or projects. It was concluded that there is no potential for an adverse effect.

Code **NIP** → The RIAA predicted no effect on prey availability that would lead to an adverse effect.

Code **NP** → No PVA was conducted for this population, however the RIAA states that no adverse effects are predicted for this population.

Code **PFB** → Due to the herring gull's/lesser black-backed gull's wide ranging foraging behaviour and plasticity in foraging habitat and diet, together with any effects on prey during consenting, decommissioning, operation and maintenance being largely intermittent across a relatively small spatial extent, it is considered that there is no potential for changes in prey availability to lead to an adverse effect on the XXX SPA herring/lesser black-backed gull population.

Code **SS35** → PVA metrics indicate high chance of population being a similar size to which would occur in the absence of the Berwick Bank Wind Farm after 35 years.

APPENDIX C: MORTALITY SUMMARY

Note no values are provided for conclusions for OFFSAB SPA, this is because the impacted populations that are the qualifying features of this site, originate from colonies functionally linked to the OFFSAB SPA*. As such concluded impact is recorded for those populations at their functionally linked SPA, relative to OFFSAB.

*Note an exception to this is the non-breeding razorbill feature of OFFSAB, this feature does not have a reference population and as such no value can be concluded explicitly. For OFFSAB Razorbill, both NatureScot and the AA agree that impacts are suitably accounted for via those sites where razorbill are concluded AEOSI or unable to conclude no AEOSI.

Note no values are provided for seabird assemblage features where the assemblage feature is a named feature of the same site as the impact has been assessed and concluded on the main feature.

Where AEOSI is concluded or the AA is unable to conclude no AEOSI based on in-combination effects, the proportion of the impact attributable to Berwick Bank Wind Farm is the values from the assessment of Berwick Bank Wind Farm alone.

Table 76: Mortality summary for species and sites where AEOSI was concluded, or the Scottish Ministers were unable to conclude no AEOSI for Berwick Bank Wind Farm alone. All values are concluded from Scoping Approach B

Species	SPA	CPS	Mortality (birds per annum - upper value)		Conclusion
			Adults	Immatures	
Guillemot	Farne Islands	0.922	Adults	168.2	Unable to conclude no AEOSI
			Immatures	184.9	
			Total	353.1	
Guillemot	Forth Islands	0.804	Adults	180.6	AEOSI
			Immatures	178.2	
			Total	358.8	
Guillemot	Fowlsheugh	0.805	Adults	473.3	AEOSI
			Immatures	472.9	
			Total	946.2	
Guillemot	OFFSAB (breeding and non-breeding)	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Guillemot	St Abb's Head to Fast Castle	0.674	Adults	576.1	AEOSI
			Immatures	574	
			Total	1150.1	

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Kittiwake	Forth Islands	0.869	Adults	43.3	AEOSI
			Immatures	2.9	
			Total	46.2	
Kittiwake	Fowlsheugh	0.872	Adults	130.5	AEOSI
			Immatures	8.8	
			Total	139.3	
Kittiwake	OFFSAB (breeding and non-breeding)	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Kittiwake	St Abb's Head to Fast Castle	0.375	Adults	371.3	AEOSI
			Immatures	14.3	
			Total	385.6	
Kittiwake	West Westray	0.912	Adults	12.1	Unable to conclude no AEOSI
			Immatures	6.1	
			Total	18.2	
Razorbill	Forth Islands	0.905	Adults	19	Unable to conclude no AEOSI
			Immatures	16.8	
			Total	35.8	
Razorbill	St Abb's Head to Fast Castle	0.859	Adults	14.3	AEOSI
			Immatures	15	
			Total	29.3	
Seabird assemblage (Kittiwake)	Farne Islands	0.894	Adults	35.3	AEOSI
			Immatures	2.8	
			Total	38.1	
Seabird assemblage (Kittiwake)	Forth Islands	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Kittiwake)	Fowlsheugh	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Kittiwake)	OFFSAB (breeding and non-breeding)	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Kittiwake)	St Abb's Head to Fast Castle	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Kittiwake)	West Westray	No value	Adults	-	Unable to conclude no AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Guillemot)	Forth Islands	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	

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Seabird assemblage (Guillemot)	Fowlsheugh	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Guillemot)	OFFSAB (breeding and non-breeding)	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Guillemot)	St Abb's Head to Fast Castle	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Razorbill)	Forth Islands	No value	Adults	-	Unable to conclude no AEOSI
			Immatures	-	
			Total	-	
Seabird assemblage (Razorbill)	St Abb's Head to Fast Castle	No value	Adults	-	AEOSI
			Immatures	-	
			Total	-	

Table 77: Mortality summary for species and sites where AEOSI was concluded, or the Scottish Ministers were unable to conclude no AEOSI in combination with other Forth & Tay and UK North Sea OWFs. All values are concluded from Scoping Approach B. This table does not include those sites/species where the AA concluded AEOSI, or was unable to conclude no AEOSI from Berwick Bank Wind Farm alone for the reasons given in paragraph 11.5.

Species	SPA	Berwick Bank Wind Farm in combination with other OWFs		Contribution to mortalities from Berwick Bank Wind Farm		Conclusion	
		CPS	Mortality (birds per annum – upper value)	CPS	Mortality (birds per annum – upper value)		
Gannet	Forth Islands	0.800*	Adults	1114.8	0.957	245.3	AEOSI
			Immatures	236.8		10.9	
			Total	1351.6		256.2	
Gannet	Hermaness, Saxa Vord and Valla Field	0.920*	Adults	104.3	N/A (<1% reduction in population size)	4.1	Unable to conclude no AEOSI
			Immatures	82.1		0.3	
			Total	186.4		4.4	
Gannet	OFFSAB (breeding)	No value***	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Kittiwake	Buchan Ness to	0.858*	Adults	97.9	0.968	21	AEOSI
			Immatures	35.3		6.6	

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	Collieston Coast		Total	133.2		27.6	
Kittiwake	East Caithness Cliffs	0.777*	Adults	411.1	0.973	41.1	AEOSI
			Immatures	128.9		20.3	
			Total	540		61.4	
Kittiwake	Flamborough and Filey Coast	0.841*	Adults	526.2	0.985	38.1	AEOSI
			Immatures	110.6		18.9	
			Total	636.8		57.0	
Kittiwake	North Caithness Cliffs	0.772*	Adults	58.7	0.955	10.2	AEOSI
			Immatures	26.6		5.1	
			Total	85.3		15.3	
Kittiwake	Troup, Pennan and Lion's Heads	0.859*	Adults	102.5	0.973	18.4	AEOSI
			Immatures	42.8		7.6	
			Total	145.3		26.0	
Puffin	Forth Islands	0.880*	Adults	265.5	0.986	30.2	AEOSI
			Immatures	306.1		35.6	
			Total	571.6		65.8	
Puffin	OFFSAB (breeding)	No value***	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Razorbill	East Caithness Cliffs	0.797*	Adults	228.4	0.986	14.8	AEOSI
			Immatures	157.7		9.9	
			Total	386.1		24.7	
Razorbill	Flamborough and Filey Coast	0.861*	Adults	203.4	0.989	10.7	AEOSI
			Immatures	43.9		7.6	
			Total	247.3		18.3	
Razorbill	Fowlsheugh	0.778*	Adults	106.8	0.948	23.0	AEOSI
			Immatures	84.1		17.5	
			Total	190.9		40.5	
Razorbill	OFFSAB (non-breeding)	No value***	Adults	-	No value	-	Unable to conclude no AEOSI
			Immatures	-		-	
			Total	-		-	
Razorbill	Troup, Pennan and Lion's Heads	0.905*	Adults	15.7	0.979	3.3	AEOSI
			Immatures	9.8		2.2	
			Total	25.5		5.5	
Seabird assemblage (kittiwake)	Buchan Ness to Collieston Coast	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (kittiwake)	East Caithness Cliffs	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
			Adults	-	No value	-	AEOSI

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Seabird assemblage (kittiwake)	North Caithness Cliffs	No value*	Immatures	-		-	
			Total	-		-	
Seabird assemblage (kittiwake)	Troup, Pennan and Lion's Heads	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (gannet)	Forth Islands	No value**	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (gannet)	Hermaness, Saxa Vord and Valla Field	No value*	Adults	-	No value	-	Unable to conclude no AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (gannet)	OFFSAB (breeding)	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (puffin)	Forth Islands	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (puffin)	OFFSAB (breeding)	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (razorbill)	East Caithness Cliffs	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (razorbill)	Fowlsheugh	No value**	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (razorbill)	OFFSAB (non-breeding)	No value***	Adults	-	No value	-	Unable to conclude no AEOSI
			Immatures	-		-	
			Total	-		-	
Seabird assemblage (razorbill)	Troup, Pennan and Lion's Heads	No value*	Adults	-	No value	-	AEOSI
			Immatures	-		-	
			Total	-		-	

*in combination with UK North Sea offshore windfarms

**in combination with Forth & Tay offshore windfarms

***not specified