# **Outer Dowsing Offshore Wind**

# Report to Inform Appropriate Assessment Appendix 1: Screening Matrices

Date: July 2024/

Document Reference: 7.3 Pursuant to APFP Regulation: 5(2)(g) Rev: 2.0



Company: Ou		Ou	Outer Dowsing Offshore Wind		Asset:		Whole A	Whole Asset	
Project:		Whole Wind Farm		Sub Project/Packa	Whole Ass		sset		
Document Title or Description:			ort to Inform Appropriate Assessment Appendix 1: Screening Matrices						
Internal Document Number:		PP:	PP1-ODOW-DEV-CS-MAT-0001_02		3 <sup>rd</sup> Party Doc No (If applicable):		N/A		
Rev No.	Date		Status / Reason for Issue	Author	Checked by	Review	wed by	Approved by	
1.0	March 2024		DCO Application	GoBe	Outer Dowsing	•	erd and erburn	Outer Dowsing	
2.0 July 2024		4	Response to Section 51 advice	GoBe	GoBe	Outer Dowsi	ng	Outer Dowsing	



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## **Acronyms & Definitions**

## Abbreviations / Acronyms

Abbreviation / Acronym	Description
EMF	Electromagnetic fields
HEA	Habitat Regulations Assessment
INNS	Invasive Non-Native Species
LSE	Likely Significant Effect
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SPA	Special Protection Area



## **Reference Documentation**

Document Number	Title
N/A	No other documents are referenced within this appendix



## 1 Matrix Key

- 1. Evidence for, or against, adverse effects on designated site qualifying features and Likely Significant Effect is detailed within the footnotes to the integrity matrices.
- ✓ = Likely Significant Effect cannot be excluded
- X = Likely Significant Effect can be excluded
- C = Construction
- O = Operation and Maintenance
- D = Decommissioning
  - Effect not relevant to feature (no potential for pathway)



## 2 Index to Matrices

2. This appendix presents the screening matrices for Outer Dowsing Offshore Wind Farm (ODOW, hereafter 'The Project') promoted by Outer Dowsing Offshore Wind (hereafter 'the Applicant') in accordance with the structure and format specific in PINS Advice Note 10 (August 2022, version 9).

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Matrix 30Northumbria Coast SPAMatrix 31Foulness (Mid-Essex Coast Phase 5) SPAMatrix 32Thanet Coast and Sandwich Bay SPAMatrix 33Northumberland Marine SPAMatrix 34Coquet Island SPAMatrix 35Dungeness, Romney Marsh and Rye Bay SPA	Matrix 28	Alde-Ore Estuary Ramsar
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Matrix 32Thanet Coast and Sandwich Bay SPAMatrix 33Northumberland Marine SPAMatrix 34Coquet Island SPAMatrix 35Dungeness, Romney Marsh and Rye Bay SPA	Matrix 30	
Matrix 33Northumberland Marine SPAMatrix 34Coquet Island SPAMatrix 35Dungeness, Romney Marsh and Rye Bay SPA	Matrix 31	Foulness (Mid-Essex Coast Phase 5) SPA
Matrix 34Coquet Island SPAMatrix 35Dungeness, Romney Marsh and Rye Bay SPA	Matrix 32	Thanet Coast and Sandwich Bay SPA
Matrix 35         Dungeness, Romney Marsh and Rye Bay SPA	Matrix 33	Northumberland Marine SPA
	Matrix 34	Coquet Island SPA
Matrix 36 Farne Islands SPA	Matrix 35	Dungeness, Romney Marsh and Rye Bay SPA
	Matrix 36	Farne Islands SPA

#### Table 2.1 Details on all matrices included in this appendix



Matrix	Site included in the assessment
Matrix 37	Solent and Southampton Water SPA
Matrix 38	St Abb's Head to Fast Castle SPA
Matrix 39	Firth of Forth SPA
Matrix 40	Forth Islands SPA
Matrix 41	Poole Harbour Ramsar
Matrix 42	Poole Harbour SPA
Matrix 43	Imperial Dock Lock, Leith SPA
Matrix 44	Firth of Tay and Eden Estuary SPA
Matrix 45	Chesil Beach and The Fleet SPA
Matrix 46	Fowlsheugh SPA
Matrix 47	Ythan Estuary, Sands of Forvie and Meikle Loch SPA
Matrix 48	Ythan Estuary and Meikle Loch Ramsar
Matrix 49	Buchan Ness to Collieston Coast SPA
Matrix 50	Troup, Pennan and Lion's Heads SPA
Matrix 51	East Caithness Cliffs SPA
Matrix 52	North Caithness Cliffs SPA
Matrix 53	Pentland Firth Islands SPA
Matrix 54	Copinsay SPA
Matrix 55	Hoy SPA
Matrix 56	Calf of Eday SPA
Matrix 57	Rousay SPA
Matrix 58	Marwick Head SPA
Matrix 59	Fair Isle SPA
Matrix 60	West Westray SPA
Matrix 61	Papa Westray (North Hill and Holm) SPA
Matrix 62	Sumburgh Head SPA
Matrix 63	Noss SPA
Matrix 64	Foula SPA
Matrix 65	Fetlar SPA
Matrix 66	Hermaness, Saxa Vord and Valla Field SPA
Matrix 67	Transboundary sites for Lesser black-backed gull (3 sites)
Matrix 68	Transboundary sites for Northern fulmar (9 sites)
Matrix 69	Transboundary sites for Manx shearwater (4 sites)
Matrix 70	Humber Estuary SAC
Matrix 71	Humber Estuary SPA
Matrix 72	Humber Estuary Ramsar Site
Matrix 73	Humber Estuary SAC
Matrix 74	Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC
Matrix 75	The Wash SPA
Matrix 76	The Wash Ramsar Site
Matrix 77	The Wash & North Norfolk Coast SAC
Matrix 78	Greater Wash SPA
Matrix 79	Gibraltar Point SPA
Matrix 80	Gibraltar Point Ramsar Site



Matrix	Site included in the assessment
Matrix 81	North Norfolk SPA
Matrix 82	North Norfolk RAMSAR



## **3** Effects Considered

3. Potential effects on designated sites which are considered within the submitted information to support the Report to Inform Appropriate Assessment (RIAA) for the Habitats Regulation Assessment (HRA) of Outer Dowsing Offshore Wind are provided in Table 3.1 below.

Table 3.1: Designated sites and impacts considered for assessment within the RIAA

Designations	Impacts Considered in Matrices
Subtidal and intertidal benthic ecol	· · · · · · · · · · · · · · · · · · ·
North Norfolk Sandbanks and	Suspended sediment / deposition
Saturn Reef SAC	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)
	Changes to physical processes
	Physical habitat loss / disturbance
	Electromagnetic fields (EMF)
	In-combination
Inner Dowsing Sandbanks and	Physical habitat loss / disturbance
Saturn Reef SAC	Suspended sediment / deposition
	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)
	Changes to physical processes
	Electromagnetic fields (EMF)
	In-combination
The Wash and North Norfolk Coast	Physical habitat loss / disturbance
SAC	Suspended sediment / deposition
	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)
	Changes to physical processes
	Electromagnetic fields (EMF)
	In-combination
Humber Estuary Ramsar	Physical habitat loss / disturbance
	Suspended sediment / deposition
	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)
	Changes to physical processes
	Electromagnetic fields (EMF)
	In-combination
Humber Estuary SAC	Physical habitat loss / disturbance
	Suspended sediment / deposition
	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)



Designations	Impacts Considered in Matrices
	Changes to physical processes
	Electromagnetic fields (EMF)
	In-combination
Gibraltar Point Ramsar	Physical habitat loss / disturbance
	Suspended sediment / deposition
	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)
	Changes to physical processes
	Electromagnetic fields (EMF)
	In-combination
The Wash Ramsar	Physical habitat loss/ disturbance
	Suspended sediment / deposition
	Indirect pollution
	Accidental pollution
	Invasive Non-Native Species (INNS)
	Changes to physical processes
	Electromagnetic fields (EMF)
	In-combination
Marine Mammals	
Southern North Sea SAC	Underwater noise
	Vessel disturbance
	Collision risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	In-combination effects
Humber Estuary SAC and RAMSAR	Underwater noise
	Vessel disturbance
	Collision risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	Habitat loss
	Disturbance at haul out
	In-combination effects
Berwickshire and North	Underwater noise
Northumberland Coast SAC	Vessel disturbance
	Collision Risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	Habitat loss
	In-combination effects



Designations	Impacts Considered in Matrices
The Wash and North Norfolk Coast	Underwater noise
SAC	Vessel disturbance
	Collision Risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	Habitat loss
	Disturbance at haul out
	In-combination effects
Transboundary sites for Harbour	Underwater noise
porpoise (12 sites)	Vessel disturbance
	Collision Risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	In-combination effects
Moray Firth SAC	Underwater noise
Mordy man she	Vessel disturbance
	Collision Risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	Habitat loss
	In-combination effects
Transboundary sites for seals (12	Underwater noise
sites)	Vessel disturbance
sites)	Collision Risk
	Indirect pollution
	Accidental pollution
	Changes to prey
	Habitat loss
	Disturbance at haul out
	In-combination effects
Offshore and intertidal ornithology	
Greater Wash SPA	Direct disturbance and displacement due to work activity and
Greater Wash St A	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Humber Estuary Pamear	Direct disturbance and displacement due to work activity and
Humber Estuary Ramsar	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure



Designations	Impacts Considered in Matrices
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Humber Estuary SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
North Norfolk Coast SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Gibraltar Point Ramsar	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Gibraltar Point SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
The Wash Ramsar	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
The Mesh CDA	Indirect impacts through effects on habitats and prey species
The Wash SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species



Designations	Impacts Considered in Matrices
Great Yarmouth North Denes SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Flamborough and Filey Coast SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Outer Thames Estuary SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Alde-Ore Estuary Ramsar	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Alde-Ore Estuary SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Coquet Island SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Northumbria Coast SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones



Designations	Impacts Considered in Matrices
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Foulness (Mid-Essex Coast Phase	Direct disturbance and displacement due to work activity and
5) SPA	vessel movements in both the offshore and intertidal zones
-,	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Thanet Coast and Sandwich Bay	Direct disturbance and displacement due to work activity and
SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Northumberland Marine SPA	Direct disturbance and displacement due to work activity and
Northumberiand Marine SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure Collision risk
	Barrier effects for migratory waterbirds
Dunganaga Dampau March and	Indirect impacts through effects on habitats and prey species
Dungeness, Romney Marsh and	Direct disturbance and displacement due to work activity and
Rye Bay SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Farne Islands SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Solent and Southampton Water	Direct disturbance and displacement due to work activity and
SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk



Designations	Impacts Considered in Matrices
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Firth of Forth SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
Forth Islands SPA	Indirect impacts through effects on habitats and prey species
FOI UN ISIANUS SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Poole Harbour Ramsar	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Poole Harbour SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Imperial Dock Lock, Leith SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Firth of Tay and Eden Estuary SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species



Designations	Impacts Considered in Matrices
Chesil Beach and The Fleet SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Fowlsheugh SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Ythan Estuary, Sands of Forvie and	Direct disturbance and displacement due to work activity and
Meikle Loch SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Ythan Estuary and Meikle Loch	Direct disturbance and displacement due to work activity and
Ramsar	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Troup, Pennan and Lion's Heads	Direct disturbance and displacement due to work activity and
SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
East Caithness Cliffs SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
North Caithness Cliffs SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones



Designations	Impacts Considered in Matrices
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Pentland Firth Islands SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Hoy SPA	Direct disturbance and displacement due to work activity and
Hoy SFA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Marwick Head SPA	
INIAI WICK HEAU SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Fair Isle SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
West Westray SPA	Direct disturbance and displacement due to work activity and
	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Papa Westray (North Hill and	Direct disturbance and displacement due to work activity and
Holm) SPA	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure



Designations	Impacts Considered in Matrices
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Sumburgh Head SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of array infrastructure Collision risk Barrier effects for migratory waterbirds Indirect impacts through effects on habitats and prey species
Noss SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of array infrastructure Collision risk Barrier effects for migratory waterbirds Indirect impacts through effects on habitats and prey species
Fetlar SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of array infrastructure Collision risk Barrier effects for migratory waterbirds Indirect impacts through effects on habitats and prey species
Hermaness, Saxa Vord and Valla Field SPA	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of array infrastructure Collision risk Barrier effects for migratory waterbirds Indirect impacts through effects on habitats and prey species
Transboundary sites for Lesser black-backed gull (3 sites)	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of array infrastructure Collision risk Barrier effects for migratory waterbirds Indirect impacts through effects on habitats and prey species
Transboundary sites for Northern fulmar (9 sites)	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones Direct disturbance and displacement due to the presence of array infrastructure Collision risk Barrier effects for migratory waterbirds Indirect impacts through effects on habitats and prey species



Designations	Impacts Considered in Matrices
Transboundary sites for Manx	Direct disturbance and displacement due to work activity and
shearwater (4 sites)	vessel movements in both the offshore and intertidal zones
	Direct disturbance and displacement due to the presence of
	array infrastructure
	Collision risk
	Barrier effects for migratory waterbirds
	Indirect impacts through effects on habitats and prey species
Migratory fish	
Humber Estuary SAC	Underwater noise,
	Suspended sediment / deposition,
	Indirect pollution,
	Accidental pollution,
	Electromagnetic field (EMF),
	Invasive Non-Native Species (INNS),
	Physical habitat loss / disturbance,
	Changes to prey
	In-combination effects
River Derwent SAC	Underwater noise,
	Suspended sediment / deposition,
	Indirect pollution,
	Accidental pollution,
	Electromagnetic field (EMF),
	Invasive Non-Native Species (INNS),
	Physical habitat loss / disturbance, Changes to prey
	In-combination effects
Onshore ecology	
Humber Estuary SPA	Risk of disturbance/displacement,
Humber Estadiy SIA	Loss of foraging, roosting and nesting habitat for birds outside
	the SPA,
	Risk of pollution,
Humber Estuary Ramsar Site	Loss of estuary habitats,
· · · · · · · · · · · · · · · · · · ·	Risk of disturbance/displacement,
	Loss of foraging and roosting habitat for birds outside the
	RAMSAR site,
	Risk of pollution,
Humber Estuary SAC	Risk of loss or damage to estuary habitats
·	Risk of pollution
Saltfleetby-Theddlethorpe Dunes	Risk of loss, damage and/or disturbance of habitats
& Gibraltar Point SAC	Disturbance of species
	Risk of pollution
The Wash SPA	Risk of disturbance/displacement,
	Loss of foraging, roosting and nesting habitat,
	Risk of pollution,
The Wash Ramsar Site	Risk of loss or damage to habitats,



Designations	Impacts Considered in Matrices
	Risk of disturbance/displacement,
	Loss of foraging, roosting and nesting habitat,
	Risk of pollution,
The Wash & North Norfolk Coast	Risk of loss or damage to habitats,
SAC	Risk of disturbance,
	Loss of foraging, roosting and nesting habitat,
	Reduction of habitat quality,
	Displacement of otter and reduction of otter habitat
Greater Wash SPA	Risk of loss of or damage to habitats,
	Risk of disturbance/displacement,
	Loss of foraging, roosting and nesting habitat,
	Risk of pollution,
Gibraltar Point SPA	Risk of disturbance/displacement,
	Loss of foraging, roosting and nesting habitat,
	Risk of pollution,
Gibraltar Point Ramsar Site	Risk of loss of or damage to habitats,
	Risk of disturbance,
	Loss of foraging, roosting and nesting habitat,
	Risk of pollution,
	Loss or decline in populations of scarce invertebrates and
	plants,
North Norfolk SPA	Risk of disturbance/displacement,
	Loss of foraging, roosting and nesting habitat,
North Norfolk RAMSAR	Risk of disturbance/displacement,
	Loss of foraging, roosting and nesting habitat,

## **3.1** Sites designated with subtidal and intertidal benthic ecology features

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	North Norfolk Sandbanks and Saturn Reef SAC UK0030358 5.9 km to array / 17.7 km to ECC / 0.0 km to ANS / 39.5 km to biogenic reef / 69.6km to ORCP																								
Effect	sedin	ended nent / sition		Indire	Indirect pollution			Accidental pollution			INNS			Changes to physical processes			Physical habitat loss / disturbance			EMF			In-combination effects		
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	
Reefs	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	Хc		Хc		Хc		√d	√d	√d	
Sandbanks which are slightly covered by sea water all of the time	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	Хc		Хc		Хc		√d	√d	√d	

Matrix 1: North Norfolk Sandbanks and Saturn Reef SAC

Evidence supporting conclusions

- Based on proximity to the proposed development, it is considered that potential effects may reach the SAC, within which the features are located. Therefore, a finding of potential LSE is appropriate. √a
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction √b phase. Therefore, a finding of potential LSE is appropriate.
- Due to the distance of the site, physical habitat loss/ disturbance and EMF effects are not anticipated to arise due to the distance from the site. EMF effects only arise from the cables when in operation and Хc therefore there is no pathway for effect for EMF during construction and decommissioning. Therefore, there is no LSE for either of these effects.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √d

End of Matrix 1



#### Matrix 2: Inner Dowsing, Race Bank, and North Ridge SAC

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK003	30370				th Ridge 30.0 km		/ 0.0 kr	n to bio	genic re	eef / 0.0	) to OR(	CP											
Effect	1 1	cal habi disturb		Suspended sediment / deposition			Indirect pollution				Accidental pollution			INNS			Changes to physical processes					In-combination effects		
Stage of Development	С	0	D	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Reefs	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		√a		√c	√c	√c
Sandbanks which are slightly covered by sea water all of the time		√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		√a		√c	√c	√c

#### Evidence supporting conclusions

- Va Based on proximity to the proposed development, it is considered that potential effects may reach the SAC, within which the features are located. Therefore, a finding of potential LSE is appropriate.
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.
- $\sqrt{c}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 2



#### Matrix 3: The Wash and North Norfolk Coast SAC

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	ode:UK0017075t Distance to Project48.4 km to array / 13.4 km to ECC / 50.4 km to ANS / 0.0 km to biogenic reef / 19.3 km to ORCPEffects of Project																								
Effect	Physical habitat loss disturbance						Indire	Indirect pollution			Accidental pollution					Changes to physical processes			EMF			In-combination effects			
Stage of Development	С	0	D	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	
Sandbanks which are slightly covered by sea water all of the time	Хc		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d	
Mudflats and sandflats not covered by seawater at low tide	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d	
Large shallow inlets and bays	Хc		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d	
Reefs	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d	
Salicornia and other annuals colonizing mud and sand	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d	
Atlantic salt meadows (Glauco- Puccinellietalia maritimae)	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d	

Evidence supporting conclusions

Va Based on proximity to the proposed development, it is considered that potential effects may reach the SAC, within which the features are located. Therefore, a finding of potential LSE is appropriate.

The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.

X C Due to the distance of the site, physical habitat loss/ disturbance and EMF effects are not anticipated to arise due to the distance from the site. EMF effects only arise from the cables when in operation and therefore there is no pathway for effect for EMF during construction and decommissioning. Therefore, there is no LSE for either of these effects.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 3



#### Matrix 4: Humber Estuary Ramsar

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK11	031 (66	uary Ran 53) rray / 12		to ECC /	<sup>′</sup> 47.5 kı	n to AN	S / 18.2	km to l	piogeni	c reef /	15.3km	to ORC	CP.										
Effect	· · ·	cal habitat       Suspended       Indirect pollution       Accidental       INNS       Changes to physical       EMF       In-combinal         disturbance       sediment / deposition       D       C       D       D       C       D       D       C       D       D       C       D       D       C       D       D       D       D       D       D       D       D       D       D       D       D       D       D<																on						
Stage of Development	С	0	D	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dune systems with humid dune slacks	Хс		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d
Estuarine waters	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хс		√d	√d	√d
Intertidal mud and sand flats	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d
Saltmarshes	Хc		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d
Coastal brackish/saline lagoons	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d

Evidence supporting conclusions

Va Based on proximity to the proposed development, it is considered that potential effects may reach the SAC, within which the features are located. Therefore, a finding of potential LSE is appropriate.

The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.

X C Due to the distance of the site, physical habitat loss/ disturbance and EMF effects are not anticipated to arise due to the distance from the site. EMF effects only arise from the cables when in operation and therefore there is no pathway for effect for EMF during construction and decommissioning. Therefore, there is no LSE for either of these effects.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 4



#### Matrix 5: Humber Estuary SAC

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Pr	UK003 54.4 k			km to I	ECC / 47	.5 km to	ANS / 2	3.8 km to	o biogen	ic reef /	19.7km	to ORCP	,											
Effect		al habita	at loss /		nded se osition	diment	Indire	ect pollut	ion	Accide	ental po	lution	INNS			Chang	ges to ph sses	ysical	EMF			In-cor effect	nbinatio s	n
Stage of Development	C	0	D	C	0	D	С	0	D	С	0	D	С	0	D	C	0	D	С	0	D	C	0	D
Estuaries	Хc		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d
Mudflats and sandflats not covered by seawater at low tide	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d
Sandbanks which are slightly covered by sea water all the time	Хс		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хс		√d	√d	√d
Salicornia and other annuals colonizing mud and sand	Хс		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хс		√d	√d	√d
Atlantic salt meadows	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d

#### Evidence supporting conclusions

Va Based on proximity to the proposed development, it is considered that potential effects may reach the SAC, within which the features are located. Therefore, a finding of potential LSE is appropriate.

Vb The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.

X C Due to the distance of the site, physical habitat loss/ disturbance and EMF effects are not anticipated to arise due to the distance from the site. EMF effects only arise from the cables when in operation and therefore there is no pathway for effect for EMF during construction and decommissioning. Therefore, there is no LSE for either of these effects.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 5



#### Matrix 6: Gibraltar Point Ramsar

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK11	027 (58	nt Rams 9) rray / 13		o ECC /	′ 70.5 kr	n to AN	IS / 1.6 k	km to bi	ogenic	reef / 1	9.3km t	o ORCF	)										
Effect		Physical habitat Suspended Indirect pollution Accidental pollution Processes Pollution Processes Pollution Processes Pollution Processes Pollution															on							
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Estuarine mudflats	Хc		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хс		√d	√d	√d
Sandbanks	Хc		Хс	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хс		√d	√d	√d
Saltmarsh	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d
Dunes	Хc		Хc	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Хc		√d	√d	√d

#### Evidence supporting conclusions

Va Based on proximity to the proposed development, it is considered that potential effects may reach the site, within which the features are located. Therefore, a finding of potential LSE is appropriate.

The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.

X C Due to the distance of the site, physical habitat loss/ disturbance and EMF effects are not anticipated to arise due to the distance from the site. EMF effects only arise from the cables when in operation and therefore there is no pathway for effect for EMF during construction and decommissioning. Therefore, there is no LSE for either of these effects.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

#### End of Matrix 6



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK11(	Vash Ran 072 (395 km to arr	)	4 km to	ECC / 74	I.0 km to	) ANS / 3	3.8 km t	o biogen	ic reef /	22.7km	to ORCI	р											
Effect	1 1	cal habita bance	at loss /		nded se osition	diment	Indire	ect pollu	tion	Accide	ental po	llution	INNS			Chang proces	es to ph	ysical	EMF			In-cor effect	nbinatio	h
Stage of Development			D			D	C	0	D	C	0	D	C	0	D		0	D	C	0	D		0	
Saltmarshes	Ха	Xa	Ха	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Ха		√d	√d	√d
Estuaries	Ха	Ха	Ха	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Ха		√d	√d	√d
Major intertidal banks of sand and mud	Ха	Ха	Ха	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Ха		√d	√d	√d
Shallow water	Ха	Ха	Ха	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Ха		√d	√d	√d
Deep channels	Ха	Ха	Ха	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b		Ха		√d	√d	√d

#### Matrix 7: The Wash Ramsar

Evidence supporting conclusions

Ja Based on proximity to the proposed development, it is considered that potential effects may reach the site, within which the features are located. Therefore, a finding of potential LSE is appropriate.

The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.

X c Due to the distance of the site, physical habitat loss/ disturbance and EMF effects are not anticipated to arise due to the distance from the site. EMF effects only arise from the cables when in operation and therefore there is no pathway for effect for EMF during construction and decommissioning. Therefore, there is no LSE for either of these effects.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 7



### **3.2** Sites designated with marine mammal features

Matrix 8: Southern North Sea SAC

Name of designated site: Site Code: Closest Distance to Project (Offshore) Likely Effects of Project	UK003	30395	th Sea S ay / 1.1		CC / 0.0	km to Al	NS / 34.	.7 km to	biogeni	ic reef /	42.3km	to ORCI	P											
Effect	Under	water n	ioise	Vesse	l disturb	ance	Collisi	on risk		Indire	ct pollut	ion	Accide	ental po	llution	Habita	t loss		Chang	es to pr	еу	In-co effec	mbinatio ts	on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Harbour porpoise	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√a	√a	√b	√c	√c	√c

#### Evidence supporting conclusions

- Table 5.4 of the HRA Screening Report (Appendix 7.2 of the RIAA) considers that The Project is located within 0 km of the SAC. Therefore, due to proximity to the source there is potential for a likely significant √a effect (LSE).
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. √b Therefore, a finding of potential LSE is appropriate.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c

End of Matrix 8



#### Matrix 9: Humber Estuary SAC

Name of designated site: Site Code: Closest Distance to Project (offshore) Likely Effects of Project	UKOO	30170			m to E(	CC / 47	.5 km t	o ANS	/ 23.8	km to l	biogen	ic reef ,	/ 19.7k	m to C	ORCP												
Effect	Unde	erwate	r	Vesse	el		Collis	ion ris	k	Indir	ect pol	lution	Accid	ental		Chan	ges to	prey	Habit	at loss:		Distu	irbance	e at haul	In-co	mbinat	ion
	noise	2		distu	rbance								pollu	tion								out			effec	ts	
Stage of Development	С	0	D	С	0	D	С	0	С	С	С	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Grey seal	√a	√a	√b	√c	√c	√b	√d	√d	√b	Xe	Хe	Хe	Хe	Хe	Xe	√g	√g	√g	Хe	Xe	Xe	√c	√c	√b	√f	√f	√f

#### Evidence supporting conclusions

- Va Potential for site connectivity is indicated from seal use at sea data (Vincent et al., 2017). Therefore, there is the potential for some level of interaction between grey seal and underwater noise associated with the Project. Potential for LSE concluded.
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.
- VC The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased rates of vessel disturbance of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Vd The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased collision risk of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Xe These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat. Therefore, a finding of no potential LSE is appropriate
- $\sqrt{f}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.
- $\sqrt{q}$  The site is within the maximum range for these effects as informed by modelling and therefore there is a potential for an LSE.

End of Matrix 9



grey seal and underwater noise associated an those outlined in the construction phase. vessel disturbance of grey seal (with vessels ion risk of grey seal (with vessels associated d the scale and extent of alternative habitat.

#### Matrix 10: Humber Estuary Ramsar

Name of designated site: Site Code: Closest Distance to Project (offshore) Likely Effects of Project	UKOC	30170		AMSAR 12.1 kr		C / 47.	.5 km ti	o ANS ,	/ 18.2 k	km to b	oiogeni	ic reef /	′ 15.3k	m to O	RCP												
Effect	Unde	erwater	noise	Vesse			Collis	ion ris	k	Indire	ect pol	lution				Chan	ges to	prey	Habit	tat loss			urbance	e at		mbinat	ion
				distu	rbance								pollu	tion								haul	out		effec	ts	
Stage of Development	С	0	D	С	0	D	С	0	С	С	С	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Grey seal	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Хe	Xe	Хe	Хe	√g	√g	√g	Xe	Хe	Хe	√c	√c	√b	√f	√f	√f

Evidence supporting conclusions

- Va Potential for site connectivity is indicated from seal use at sea data (Vincent et al., 2017). Therefore, there is the potential for some level of interaction between grey seal and underwater noise associated with the Project. Potential for LSE concluded.
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase.
  Therefore, a finding of potential LSE is appropriate.
- Vc The location of the project relative to the at sea usage area of grey seal together with connectivity to the site (Vincent et al., 2017) may result in increased rates of vessel disturbance of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Vd The location of the project relative to the at sea usage area of grey seal together with connectivity to the site (Vincent et al., 2017) may result in increased collision risk of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Xe These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat. Therefore, a finding of no potential LSE is appropriate
- $\sqrt{f}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.
- $\sqrt{q}$  The site is within the maximum range for these effects as informed by modelling and therefore there is a potential for an LSE.

End of Matrix 10



an those outlined in the construction phase. vessel disturbance of grey seal (with vessels ion risk of grey seal (with vessels associated d the scale and extent of alternative habitat.

#### Matrix 11: The Wash and North Norfolk Coast SAC

Name of designated site: Site Code: Closest Distance to Project (offshore) Likely Effects of Project	UK00	17075		rth Nor 13.4 kr				o ANS	/ 0.0 kn	n to bio	ogenic	reef / 2	19.3km	to OR(	CP												
Effect	Unde	rwate	r noise	Vesse	el		Collis	sion ris	k	Indire	ect poll	lution	Accio	lental		Chan	ges to	prey	Habit	at loss		Distu	rbance	e at	In-co	mbinat	ion
				distu	rbance	j							pollu	tion								haul	out		effect	ts	
Stage of Development	С	0	D	С	0	D	С	0	С	С	С	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Harbour seal	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Хe	Xe	Хe	Хe	√f	√f	√f	Хe	Хe	Хe	Хe	Xe	Xe	√g	√g	√g

#### Evidence supporting conclusions

- Va Potential for site connectivity is indicated from seal use at sea data (Vincent et al., 2017). Therefore, there is the potential for some level of interaction between harbour seal and underwater noise associated with the Project. Potential for LSE concluded.
- Vb The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.
- VC The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased rates of vessel disturbance of harbour seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Vd The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased collision risk of harbour seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Xe These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat. Therefore, a finding of no potential LSE is appropriate
- In the location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result changes to prey of harbour seal. Therefore, a finding of potential LSE is appropriate.
- $\sqrt{q}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 11



an those outlined in the construction phase. s of vessel disturbance of harbour seal (with risk of harbour seal (with vessels associated d the scale and extent of alternative habitat. arbour seal. Therefore, a finding of potential

#### Matrix 12: Berwickshire and North Northumberland Coast SAC

Name of designated	Berwi	ckshire	and No	rth Noi	rthum	perland	Coast S	SAC																			
site:		0005																									
Site Code:	UK003	30395																									
Closest Distance to	260.4	km to a	array / 2	262.0 ki	m to E	CC / 232	2.6 km t	to ANS	/ 259.2	2 km to	biogen	ic reef	/ 262.0	km to (	ORCP												
Project (Offshore)											0		•														
Likely Effects of Project																											
Effect	Unde	rwater	noise	Vesse	el distu	rbance	Collis	ion risk	ζ	Indire	ect poll	ution	Accid	ental		Chan	ges to	orey	Habit	at loss		Distu	rbance	at	In-cor	mbinat	ion
													pollu	tion								haul	out		effect	ts	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Grey Seal	√a	√a	√b	√c	√c	√b	√d	√d	√b	Xe	Xe	Xe	Xe	Xe	Xe	√f	√f	√f	Xe	Xe	Xe	Xe	Xe	Xe	√q	√q	√q

#### Evidence supporting conclusions

- Va Potential for site connectivity is indicated from seal use at sea data (Vincent et al., 2017). Therefore, there is the potential for some level of interaction between grey seal and underwater noise associated with the Project. Potential for LSE concluded.
- Vb The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.
- Vc The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased rates of vessel disturbance of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Vd The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased collision risk of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Xe No potential for LSE. These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat.
- In the location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result changes to prey of grey seal. Therefore, a finding of potential LSE is appropriate.
- $\sqrt{q}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 12



grey seal and underwater noise associated an those outlined in the construction phase. vessel disturbance of grey seal (with vessels ion risk of grey seal (with vessels associated he potential change and the scale and extent f grey seal. Therefore, a finding of potential

#### Matrix 13: Moray Firth SAC

Name of designated site: Site Code: Closest Distance to Project (Offshore) Likely Effects of Project	UK00	y Firth 5 19808 km to a		525.5 kı	m to EC	C / 487.	.0 km to	o ANS /	521.2 k	m to bi	ogenic	reef / 5	25.5km	to ORC	P									
Effect	Unde	rwater	noise	Vesse	el distur	bance	Collis	ion risk		Indire	ect pollu	ution	Accid pollut			Chang	ges to p	rey	Habit	at loss		In-co effec	mbinati ts	on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Bottlenose dolphin	√a	√a	√b	√a	√a	√b	√a	√a	√b	Хc	Хc	Хc	Хc	Хc	Хc	√a	√a	√b	Хc	Хc	Хc	√a	√a	√a

#### Evidence supporting conclusions

Potential for site connectivity is indicated from photo-identification data. Therefore, there is the potential for some level of interaction between bottlenose dolphin associated with the Moray Firth SAC and these effects from the project. The impacts during decommissioning are considered to be similar and potentially less than those outlined in the construction phase.
 The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction

The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less int phase. Therefore, a finding of potential LSE is appropriate.

Xc No potential for LSE. These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat.

End of Matrix 13



Name of designated site: Site Code: Closest Distance to Project (Offshore) Likely Effects of Project	Vario	us	ry sites	for Hart	oour poi	poise (1	L2 sites)																	
Effect	Unde	rwater r	noise	Vesse	l disturt	bance	Collisi	on risk		Indire	ct pollu	tion	Accide	ental po	ollution	Habit	at loss		Chan	ges to p	rey	In-cor effect	mbinatic ts	on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Bancs de Flandres SCA	Ха	Хa	Хa	Хa	Ха	Ха	Хa	Ха	Ха	Ха	Ха	Хa	Ха	Хa	Ха	Ха	Ха	Ха	Хa	Хa	Ха	Ха	Ха	Хa
Doggersbank (Netherlands) SAC;	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха
Klaverbak SCI;	Ха	Ха	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Хa
Noordzeekustone SCI;	Хa	Хa	Хa	Ха	Хa	Ха	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Хa	Хa	Хa	Хa
SBZ 1 SCI;	Ха	Хa	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Ха	Хa	Ха	Ха	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Хa
SBZ 2 SCI;	Ха	Хa	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Ха	Хa	Ха	Ха	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Хa
SBZ 3 SCI;	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Ха	Ха	Хa	Хa
Vlaamse Banked SCI;	Хa	Хa	Хa	Ха	Хa	Ха	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Ха	Хa	Ха	Хa	Ха	Хa	Хa	Хa	Хa	Хa
Vlakte van de Raan SCI;	Ха	Ха	Хa	Ха	Хa	Ха	Хa	Хa	Хa	Хa	Ха	Хa	Хa	Хa	Ха	Ха	Ха	Хa	Хa	Хa	Хa	Ха	Хa	Хa
Voordelta SCI;	Ха	Ха	Хa	Хa	Хa	Хa	Хa	Ха	Хa	Хa	Хa	Хa	Хa	Хa	Хa	Ха	Ха	Хa	Хa	Хa	Хa	Хa	Ха	Хa
Waddenzee SCI; and	Ха	Ха	Хa	Хa	Хa	Хa	Хa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Хa	Хa	Ха	Хa
Westerschelde & Saeftinghe SCI.	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха

#### Matrix 14: Transboundary sites for Harbour porpoise (12 sites)

Evidence supporting conclusions

Xa All sites have been screened out based on a lack of evidence to suggest connectivity (no site within 26 km effective disturbance range (EDR) of the Project). Therefore, a finding of no LSE is appropriate.



#### Matrix 15: Transboundary sites for Harbour seals (12 sites)

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Trans Vario Vario	us	lary site	es for H	larbou	r and G	irey sea	als (12 :	sites)																		
Effect	Unde	erwate	r noise	Vesse	el		Collis	ion risk	۲	Indire	ect poll	ution	Accid	ental		Chan	ges to	prey	Habit	tat loss		Distu	rbance	e at	In-co	mbinat	ion
				distu	rbance								pollu	tion								haul	out		effec	ts	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Doggersbank (Netherlands)	√a	√a	√b	√c	√c	√b	√d	√d	√b	Xe	Хe	Xe	Xe	Xe	Хe	Xe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
SAC;																											
Klaverbak SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Xe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f

#### Evidence supporting conclusions

- Va Potential for site connectivity is indicated from seal use at sea data (Vincent et al., 2017). Therefore, there is the potential for some level of interaction between seals and underwater noise associated with the Project. Potential for LSE concluded.
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase. Therefore, a finding of potential LSE is appropriate.
- Vc The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased rates of vessel disturbance of seals (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Vd The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased collision risk of seals (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Xe No potential for LSE. These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat.
- $\sqrt{f}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 15



seals and underwater noise associated with an those outlined in the construction phase. s of vessel disturbance of seals (with vessels on risk of seals (with vessels associated with he potential change and the scale and extent

Name of designated site:	Tran	sbound	ary sites t	for Harb	our and	Grey sea	ls (12 site	es)																			
Site Code:	Vario Vario																										
Effect	Und	erwater	noise	Vessel	disturb	ance	Collisio	on risk		Indire pollu			Accio pollu	lental ition		Change	es to prey	/	Habi	tat los	S	Distu haul	ırbanc out	e at	In- coml effec	binati cts	on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Bancs de Flandres SCA;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Xe	Хe	Хe	Хe	Хe	Хe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Doggersbank (Netherlands) SAC;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Хe	Хe	Хe	Хe	√a	√a	√b	Хe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Klaverbak SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Хe	Хe	Хe	Хe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Noordzeekustone SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Хe	Хe	Хe	Хe	Xe	√a	√a	√b	Хe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
SBZ 1 SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Xe	Хe	Хe	Xe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
SBZ 2 SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Xe	Хe	Хe	Xe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
SBZ 3 SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Xe	Xe	Хe	Xe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Vlaamse Banked SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Xe	Xe	Xe	Хe	Хe	Xe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Vlakte van de Raan SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Хe	Хe	Хe	Хe	√a	√a	√b	Хe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Voordelta SCI;	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Хe	Xe	Хe	Хe	Xe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Waddenzee SCI; and	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Xe	Xe	Хe	Хe	Xe	√a	√a	√b	Xe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f
Westerschelde & Saeftinghe SCI.	√a	√a	√b	√c	√c	√b	√d	√d	√b	Хe	Хe	Хe	Хe	Хe	Хe	√a	√a	√b	Хe	Хe	Хe	Хe	Хe	Хe	√f	√f	√f

#### Matrix 16: Transboundary sites for Grey seals (12 sites)

Evidence supporting conclusions

- Va Potential for site connectivity is indicated from seal use at sea data (Vincent et al., 2017). Therefore, there is the potential for some level of interaction between grey seal and underwater noise associated with the Project. Potential for LSE concluded.
- The HRA Screening Report (Appendix 7.2 of the RIAA) considers that the effects from The Project during decommissioning are similar and potentially less intense than those outlined in the construction phase.
  Therefore, a finding of potential LSE is appropriate.
- Vc The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased rates of vessel disturbance of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Vd The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC (Vincent et al., 2017) may result in increased collision risk of grey seal (with vessels associated with activity relating to the Project). Therefore, a finding of potential LSE is appropriate.
- Xe No potential for LSE. These effects have been screened out from assessment as a result of the distance between the Project and the designated site, the scale of the potential change and the scale and extent of alternative habitat.
- $\sqrt{f}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

End of Matrix 16



an those outlined in the construction phase. vessel disturbance of grey seal (with vessels ion risk of grey seal (with vessels associated be potential change and the scale and extent

#### Sites designated with offshore and intertidal ornithology features 3.3

#### Matrix 17: Greater Wash SPA

designated site: Site Code:	U ce 2		y, 0.0km to ECC															
Effect	and	lacement due	rbance and to work activity nents in both the tidal zones	displace	disturban ment due e of turbine	to the				Barrier e presence	effects du of turbine:				through and prey		tion ef	fects
Stage of Development	С	0	D	С	0	D	С	0	D	C	0	D	С	0	D	C	0	D
Common scoter	√a	√a	√a	√a	√a	√a		√a			√a					√c	√c	√c
Red-throated diver	√a	√a	√a	√a	√a	√a		√a			√a					√c	√c	√c
ittle gull	Хb	Хb	Xb	Хb	Хb	Хb		√a			√a						√c	
ittle tern	Хb	Хb	Xb	Хb	Xb	Хb		√a			√a						√c	
Common ern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Sandwich ern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	

Evidence supporting conclusions

- The cable corridor directly overlaps with this SPA with red-throated diver and common scoter having high or very high vulnerability to disturbance/displacement from offshore wind farms and vessel √a disturbance. All other features have low vulnerability to disturbance and displacement (Bradbury et al., 2014; Dierschke et al., 2016; Fliessbach et al., 2019). The pathway to insufficient prey resource is weak for all designated features. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. There is potential for migratory waterbirds to be impacted by the array through barrier effects and collisions.
- The Project array is beyond the mean-maximum +1SD foraging range (Woodward et al., 2019) for all designated breeding seabird species and therefore has no breeding season connectivity. All species may Хb be vulnerable to collisions for this site, but have low sensitivity. As agreed with Natural England, Sandwich tern has been screened out for displacement, and little gull and common tern have been assessed for migratory collision risk.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.  $\sqrt{c}$



#### Matrix 18: Humber Estuary Ramsar

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK1103:	Estuary Ram 1 (663) to array, 12.		2														
Effect	activity	disturban ment due and vessel r n the offs Il zones	to work novements	displacer presence		to the		risk due of turbines			effects du of turbines	e to the		impacts th n habitats ar	<u> </u>			nation
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
European golden plover	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	
Red knot	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	
Dunlin	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	
Black-tailed godwit	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	
Common redshank	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	
Common shelduck	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	
Bar-tailed godwit	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√a	

#### Evidence supporting conclusions

- There is potential for migratory waterbirds to be impacted by the array through barrier effects and collisions. The pathway to insufficient prey resource is weak for all designated features. Temporary √a and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Therefore, LSE cannot be discounted in relation to all effects alone.
- Wintering waterbirds are not prone to displacement impacts due to the distance from the ECC to the site exceeding 2km. Хb



Matrix 19: Humber E Name of	Humber Estu	ary SPA																
designated site:																		
Site Code:	UK9006111																	
Closest Distance to Project		rray, 12.1 km to E	ECC															
Likely Effects of Pro																		
Effect			lacement due to work		disturba			on risk due t							ts through	In co		latior
	activity and and intertida		its in both the offshore	of turbi		o the presence	preser	nce of turbine	'S	the turb		ce of	species		ats and prey	effect	.S	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Avocet	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Bar-tailed godwit	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Bittern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Black-tailed godwit	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Dunlin	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Golden plover	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Hen harrier	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Knot	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Little tern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Marsh harrier	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Redshank	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Ruff	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Shelduck	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Pink-footed goose	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Wigeon	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Ringed plover	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Curlew	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Sanderling	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Oystercatcher	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Dark-bellied brent goose	Хb	Хb	Xb	Хb	Хb	Хb		√a			√a						√c	
Mallard	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Pochard	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Goldeneye	Хb	Xb	Xb	Хb	Хb	Xb		√a			√a						√c	
Scaup	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	

HRA Screening Matrices Document Reference: 7.3 V2



- There is potential for migratory waterbirds to be impacted by the array through barrier effects and collisions. The pathway to insufficient prey resource is weak for all designated features. Temporary √a and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Therefore, LSE cannot be discounted in relation to all effects alone.
- Хb Wintering waterbirds are not prone to displacement impacts due to the distance from the ECC to the SPA exceeding 2km.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 20: North No	rfolk Coast SPA																	
Name of designated site: Site Code:	North Norfolk Co UK9009031	ast SPA																
Closest Distance to Project Likely Effects of Pro		29.9 km to ECC																
Effect	Direct disturban	ce and displacem el movements in l nes		Direct displacem of turbine	disturband lent due to t ls			n risk due to r e of turbines	the	Barrie the turbin	er effects presenc nes			on habitat	s through s and prey	In c effec	combin cts	ation
Stage of Development	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Dark-bellied brent goose	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Eurasian marsh harrier	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Eurasian wigeon	Хb	Хb	Хb	Хb	Хb	Xb		√a			√a						√c	
Great bittern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Pied avocet	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Pink-footed goose	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Red knot	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Sandwich tern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Common tern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Little tern	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	
Assemblage features	Хb	Хb	Хb	Хb	Хb	Хb		√a			√a						√c	

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. There is potential √a for migratory seabird and waterbirds to be impacted by the array through barrier effects and collisions. The maximum site-specific foraging range for Sandwich tern from this site is 54 km (Woodward *et al.,* 2019), therefore the Project is beyond the range of this species from this location. Sandwich tern

- has been screened out for displacement effects and screened in for collision risk. Therefore, LSE cannot be discounted in relation to all effects alone.
- Хb The Project array is beyond the disturbance impact range for designated species and therefore has no connectivity. Therefore, LSE can be discounted in relation to these effects alone.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 21: Gibraltar Point Ramsar

Matrix 21: Gibraitar																		
Name of designated site:	Gibraltar Poir	nt Ramsar																
Site Code:	UK11027 (589	9)																
Closest Distance to Project Likely Effects of Pro	63.1 km to ar		сс															
Effect	Direct distur	vessel movement	acement due to work ts in both the offshore			ance and o the presence		n risk due to ce of turbines	the	Barri the turbi	presence			on habita	s through ts and prey			iation
Stage of Development	С	0	D	C	0	D	C	0	D	C	0	D	C	0	D	C	0	В
Grey plover	Ха	Ха	Ха	Ха	Ха	Xa		√b			√b						√c	
Sanderling	Ха	Ха	Ха	Ха	Ха	Xa		√b			√b						√c	
Dark-bellied brent goose	Ха	Ха	Xa	Ха	Xa	Ха		√b			√b						√c	
Bar-tailed godwit	Ха	Xa	Xa	Ха	Ха	Xa		√b			√b						√c	

Evidence supporting conclusions

- Хa The Project array is beyond the disturbance impact range for designated species and therefore has no connectivity. Therefore, LSE can be discounted in relation to these effects alone.
- There is potential for migratory waterbirds to be impacted by the array through barrier effects and collisions on migration. √b Therefore, LSE cannot be discounted in relation to these effects alone.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 22: Gibraltar Point SPA Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Gibralt UK9008			ECC / 70	).5 km to A	NS / 1.6 km	to biogeni	c reef / :	19.3 km to C	DRCP								
Effect	activity movem	and and	nce and e to work vessel both the tidal zones	presen	ement du ce of	nce and e to the array	waterbird		migratory	Barrier waterb		migratory		on habita	s through ts and prey		bination e	ffects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Grey plover	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Sanderling	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Little Tern	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Bar-tailed godwit	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	

X a The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated species and therefore has no breeding season connectivity. The Project array is beyond the disturbance impact range for designated waterbird species and therefore has no connectivity. Therefore, LSE can be discounted in relation to these effects alone.
 ✓b There is potential for migratory waterbirds to be impacted by the array through barrier effects and collisions. Therefore, LSE cannot be discounted in relation to these effects alone.

 $\sqrt{c}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK1107	ash Ramsa 72 (395) n to array ,		ECC / 74	I.0 km to A	NS / 3.8 km			2.7 km to O									
Effect	activity movem	and and in	nce and e to work vessel both the rtidal zones	Direct displac presen infrasti	ce of	ue to the	Collisi water		migratory	Barrie water		r migratory		s on habita	ts through ats and prey		nbination e	ffects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Eurasian oystercatcher	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Grey plover	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Red knot	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Sanderling	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Eurasian curlew	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common redshank	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Ruddy turnstone	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Pink-footed goose	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Dark-bellied brent goose	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common shelduck	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Northern pintail	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Dunlin	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Bar-tailed godwit	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	

The Project array is beyond the disturbance impact range for designated species and therefore has no connectivity. Therefore, LSE can be discounted in relation to these effects alone. Хa There is potential for migratory waterbirds to be impacted by the array through barrier effects and collisions on migration. Therefore, LSE cannot be discounted in relation to all effects alone. √b

It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Natrix 24: The Wash SPA Name of designated	The Wa	ch SDA																
site:		SII JFA																
Site Code:	UK9008	021																
Closest Distance to	66.5 km	to array /	' 16.4 km to	ECC / 74	.0 km to Al	NS / 3.8 km t	o biogenio	c reef / 22	2.7 km to OR	СР								
Project																		
Likely Effects of Project																		
Effect	Direct	disturba		Direct	disturba		Collision		migratory			r migratory	Indirect		ts through	In-combi	ination ef	fects
	activity	and	e to work vessel	presen		ue to the array	waterbir	as		water	oiras		species		ats and prey			
			both the			array							species					
			rtidal zones															
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Bar-tailed godwit	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common scoter	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Black-tailed godwit	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common goldeneye	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common redshank	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common shelduck	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Dark-bellied brent goose	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Dunlin	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Eurasian curlew	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Eurasian oystercatcher	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Eurasian wigeon	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Gadwall	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Grey plover	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Northern pintail	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Pink-footed goose	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Red knot	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Ruddy turnstone	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
anderling	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
undra swan	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Common tern	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Little tern	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	
Assemblage features	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c	

Хa

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated species and therefore has no breeding season connectivity. The Project array is beyond the disturbance impact range for designated waterbird species and therefore has no connectivity. Therefore, LSE can be discounted in relation to these effects alone.



- The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. There is potential √b for migratory waterbirds and seabirds to be impacted by the array through barrier effects and collisions. Therefore, LSE cannot be discounted in relation to these effects alone.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



#### Matrix 25: Great Yarmouth North Denes SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900	9271	North Den / 73.1 km t		9.8 km to	ANS / 58.6	i km to bio	ogenic ree	ef / 93.8 kn	n to ORCP								
Effect	displac activity mover	cement du y and nents in	nce and e to work vessel both the intertidal	displace presenc infrastru	ment du e of				migratory		effect ry waterbi			impacts on habi ecies			bination e	ffects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха

Evidence supporting conclusions

X<sub>a</sub> The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore has no breeding season connectivity. The Project concludes negligible potential for impact on migratory birds from this SPA passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900		d Filey Coa	st SPA														
Effect	activity moven	cement de y and nents in		displac presen	disturb ement di ce of turbii	ue to the		n risk du æ of turbine				due to f turbines	throu	gh eff ats ar	mpacts ects on id prey		mbin cts	ation
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Kittiwake	Хb	Хb	Хb	Хb	Хb	Хb		√a		Хb	Хb	Хb					√d	
Herring gull	Хb	Хb	Хb	Хb	Хb	Хb		√a		Хb	Хb	Хb					√d	
Gannet	√c	√c	√c	√c	√c	√c		√a		Хb	Хb	Хb				√d	√d	√d
Guillemot	√c	√c	√c	√c	√c	√c	Хb	Хb	Хb	Хb	Хb	Хb				√d	√d	√d
Razorbill	√c	√c	√c	√c	√c	√c	Хb	Хb	Хb	Хb	Хb	Хb				√d	√d	√d
Puffin	√c	√c	√c	√c	√c	√c	Хb	Хb	Хb	Хb	Хb	Хb				√d	√d	√d
Fulmar	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb						
European shag	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb						
Cormorant	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb						

#### Matrix 26: Flamborough and Filey Coast SPA

Evidence supporting conclusions

Xa These designated features are either beyond mean-maximum +1SD foraging range or not deemed sensitive to these offshore wind farm impacts (Bradbury *et al.*, 2014; Dierschke *et al.*, 2016). Therefore there is not potential for LSE.

The Project array is within the mean-maximum +1SD foraging ranges (Woodward *et al.*, 2019) for designated seabird species and therefore, has breeding season connectivity. Certain designated features have high or very high vulnerability to displacement from offshore windfarms (Bradbury *et al.*, 2014; Dierschke *et al.*, 2016). Therefore, there is a potential for LSE.
 Therefore, guillemot, razorbill, gannet and puffin have potential LSE for disturbance and displacement impacts during all phases.

The Project array is within the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore, has breeding season connectivity. Certain designated features have high or very high vulnerability to collision risk with turbines (Bradbury *et al.,* 2014). Therefore, there is a potential for LSE.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



#### Matrix 27: Outer Thames Estuary SPA Outer Thames Estuary SPA Name of designated site: Site Code: UK9020309 **Closest Distance to Project** 97.8 km to array / 84.8 km to ECC / 82.4 km to ANS / 69.7 km to biogenic reef / 104.0 km to ORCP Likely Effects of Project Effect Collisions for migratory effects Direct disturbance and Direct disturbance and Barrier Indirect imp displacement due to work displacement due to the waterbirds migratory waterbirds effects on activity vessel presence array prey species movements in both the infrastructure offshore and intertidal Stage of Development 0 0 0 0 Common tern Хa Little tern Хa Red-throated diver Хa Хa

#### **Evidence supporting conclusions**

Хa The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. The Project array is beyond the disturbance impact range for designated species and therefore has no connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site.

Therefore, LSE can be discounted in relation to all effects alone.



through ats and	In-combi	nation eff	ects
D	С	0	D
	Ха	Ха	Ха
	Ха	Ха	Ха
	Ха	Ха	Ха

#### Matrix 28: Alde-Ore Estuary Ramsar

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK1100			n to ECC /	136.2 km to	ANS / 110	.4 km to b	ogenic re	ef / 139.2 kn	n to ORCF	)							
Effect	activity	and ents in		displace presenc			Collision: waterbir		migratory	Barrier waterb		or migratory		igh eff ats an	impacts ects on id prey	Com		ion
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Lesser black-backed gull	Хb	Хb	Хb	Хb	Хb	Хb		√a		Хb	Хb	Хb				Хb	√c	Хb
Pied avocet	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Common redshank	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb

#### Evidence supporting conclusions

√a On the advice of Natural England, potential for LSE on Lesser black-backed gull due to collisions is screened in for the non-breeding season.
 Therefore, LSE cannot be discounted in relation to all effects alone.

Xb The Project array is beyond the site-specific mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity.
 Vc It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



#### Matrix 29: Alde-Ore Estuary SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9009			n to ECC /	136.2 km t	o ANS / 110	.4 km to	biogenic re	ef / 139.2 kn	to ORCP								
Effect	Direct displace activity movem offshor zones	and ents in	ie to work	displace presenc infrastru			Collision waterbi		migratory	Barrier waterbi		r migratory		gh eff ats an	impacts ects on nd prey	In comb effec		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Lesser black-backed gull	Хb	Хb	Хb	Хb	Хb	Хb		√a		Хb	Хb	Хb				Хb	√c	Хb
Pied avocet	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Common redshank	Хb	Хb	Хb	Хb	Хb	Xb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Ruff	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Little tern	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Sandwich tern	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb

Evidence supporting conclusions

On the advice of Natural England, potential for LSE on Lesser black-backed gull due to collisions is screened in for the non-breeding season. √a Therefore, LSE can not be discounted in relation to all effects alone.

The Project array is beyond the site-specific mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. The Хb maximum site-specific foraging range for lesser black-backed gull from this site is 124km (Woodward et al., 2019), therefore the Project is beyond the range of this species from this location. It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

√c



#### Matrix 30: Northumbria Coast SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9006			n to ECC /	173.6 km ti	o ANS / 191	.9 km to bi	ogenic re	ef / 193.2 km	to ORCP								
Effect	activity	ement due and ients in		displace presence			Collisions waterbirg		migratory	Barrier waterbii		r migratory	throu	gh eff ats ar	impacts fects on nd prey	com		ion
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Arctic Tern	Xa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Хa	Хa	Ха
Little Tern	Xa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.



#### Matrix 31: Foulness (Mid-Essex Coast Phase 5) SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9009	9246	sex Coast P 7 / 181.1 kn			ANS / 161	2 km to b	iogenic re	ef / 182.3 km	to ORCI	)							
Effect	activity	and ents in		displace presenc			Collision waterbir		migratory	Barrier waterb		or migratory	throug	gh effe ats an	impacts ects on d prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Sandwich tern	Xa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Xa	Ха	Ха	Ха				Ха	Хa	Хa

Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.



#### Matrix 32: Thanet Coast and Sandwich Bay SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK90120	071	Sandwich I / 213.1 km	·	21.7 km to	ANS / 191.	7 km to bic	ogenic reef	/ 214.2 km	to ORCP					
Effect	displace activity	ment due and ents in b	vessel	Direct displacem presence infrastruc	of		Collisions waterbird		migratory	Barrier e waterbird		migratory	through		combinations
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	D D	C O D
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa

Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.



#### Matrix 33: Northumberland Marine SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9020	)325	Marine SP/ y / 235.3 kr		′ 210.8 km t	:o ANS / 233	.3 km to t	piogenic re	ef / 235.3 km	to ORCP								
Effect	activity	ement du and ients in	ance and ie to work vessel both the intertidal	displace presence	ce of				migratory	Barrier waterbir	effects for ds	migratory	Indire throu habita specie	gh eff ats an	impacts ects on d prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Roseate tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Хa	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Guillemot	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Puffin	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Assemblage features	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa

Evidence supporting conclusions

X<sub>a</sub> This is a marine SPA designated for foraging seabirds. Impacts from outside the SPA are considered to have no connectivity to the site. Therefore, LSE can be discounted in relation to all effects alone.



#### Matrix 34: Coquet Island SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9006			to ECC / 2	231.0 km to	ANS / 256.3	3 km to bi	ogenic reef	/ 258.8 km t	o ORCP								
Effect	activity movem	and ents in	nce and e to work vessel both the tidal zones	displace presence infrastru	e of	nce and to the array	Collision waterbi		migratory	Barrier waterbii		r migratory	1	gh eff ats ar	impacts ects on id prey	In coml effec		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Puffin	√a	√a	√a	√a	√a	√a										√d	√d	√d
Roseate tern	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Common tern	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Sandwich tern	Хb	Хb	Хb	Хb	Хb	Хb	Хb	√c	Хb	Хb	Хb	Хb				Хb	√d	Хb
Arctic tern	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Puffin	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Black-headed gull	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Fulmar	Хb	Хb	Хb	Хb	Хb	Xb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Herring gull	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb
Lesser black-backed gull	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb				Хb	Хb	Хb

#### Evidence supporting conclusions

- The Project array is within the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore, has breeding season connectivity. Certain designated √a features have high or very high vulnerability to displacement from offshore windfarms (Bradbury et al., 2014; Dierschke et al., 2016). Therefore, there is a potential for LSE. Therefore, puffin have potential LSE for disturbance and displacement impacts during all phases.
- The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хb potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone. The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. Migrations of √c
- sandwich terns in the non-breeding season are likely to result in negligible numbers passing through the site. Sandwich tern have potential LSE in relation due to collision impacts during O&M.

It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √d



#### Matrix 35: Dungeness, Romney Marsh and Rye Bay SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9012	.091	ey Marsh a / 246.7 km	ŗ	·	ANS / 227	.2 km to bi	ogenic re	ef / 248.2 km	to ORCP								
Effect	activity	and ents in	e to work	presenc			Collisions waterbird		migratory	Barrier e waterbir		migratory	throug	gh effe its and	impacts ects on d prey	comt		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa

Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site.



#### Matrix 36: Farne Islands SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9006			m to ECC ,	/ 257.9 km	to ANS / 285	.9 km to	biogenic re	ef / 289.1 k	m to ORCI	P						
Effect	activity	ement du and nents in	ance and ue to work vesse both the intertida	displac presen infrastr	ement du ce of	ie to the			migratory	/ Barrier waterb		or migratory	Indire throu habit speci	igh efi ats ai	impacts fects on nd prey	In combinati effects	on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C O	D
Kittiwake								√a								Xc <mark>√d</mark>	Хc
Arctic tern	Хс	Хс	Хc	Хc	Хc	Хс	Хc	Хс	Хc	Хc	Хc	Хc				Xc Xc	Xc
Common guillemot	√b	√b	√b	√b	√b	√b	Хc	Хс	Хc	Хc	Хс	Хc				√d √d	√d
Puffin	√b	√b	√b	√b	√b	√b	Хc	Хс	Хc	Хс	Хc	Хc				√d √d	√d
Roseate tern	Хс	Хс	Хc	Хc	Хc	Хс	Хc	Хс	Хc	Хc	Хс	Хc				Xc Xc	Хc
Sandwich tern	Хс	Хс	Хc	Хс	Хc	Хс	Хc	√a	Хс	Хc	Хс	Хc				Xc √d	Хc
European shag	Хс	Хс	Хc	Хс	Хc	Хс	Хc	Хс	Хс	Хc	Хс	Хс				Xc Xc	Xc
Great cormorant	Хс	Хс	Хc	Хс	Хc	Хс	Хc	Хс	Хс	Хc	Хс	Хс				Xc Xc	Xc
Common tern	Хс	Хс	Хc	Хc	Хc	Хс	Хc	Хс	Хc	Хс	Хc	Хc				Xc Xc	Xc

#### Evidence supporting conclusions

- The Project array is within the mean-maximum +1SD foraging ranges (Woodward *et al.*, 2019) for designated seabird species and therefore, has breeding season connectivity. Designated features √a have high or very high vulnerability to collision risk with turbines (Bradbury et al., 2014). Therefore, Kittiwake has been screened into the assessment based on potential collision risk impacts. LSE can be discounted in relation to all other species and effects alone.
- Natural England have advised to screen in guillemot and puffin for displacement effects. √b
- The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хc potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √d



#### Matrix 37: Solent and Southampton Water SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9012	1061	ampton W y / 282.0 k		<sup>/</sup> 339.1 km	to ANS / 267	.7 km to	biogenic re	ef / 289.0 kr	n to ORCP	)						
Effect	activity	and ents in	ie to worl	displace present infrastr		ie to the			migratory	Barrier waterb		r migratory	Indirec throug habitat species	h effe ts and	impacts ects on d prey	combir	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D	C O	) D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Roseate tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Mediterranean gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Black-tailed godwit	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Ringed plover	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Eurasian teal	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa
Dark-bellied brent goose	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa X	(a Xa

Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone



#### Matrix 38: St Abb's Head to Fast Castle SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	XXXXXX		Fast Castle y / 331.4 km		305.3 km t	o ANS / 328	.9 km to bic	ogenic re	eef / 331.5 km	n to ORCP							
Effect	activity movem	displacement due to work activity and vessel movements in both the offshore and intertidal zones		Collisions waterbird		migratory	Barrier e waterbiro		migratory	throug	sh effects c ts and pre	n con		on			
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	O D	С	0	D
Guillemot	√b	√b	√b	√b	√b	√b		Ха			Ха				√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b		Ха			Ха				√c	√c	√c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b					√c	

Evidence supporting conclusions

Xa The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore has no breeding season connectivity. Outside the breeding season, impacts LSE cannot be discounted in relation to all effects alone.

The Project array is outside of the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore, has no breeding season connectivity. Designated features have high or very high vulnerability to collision risk with turbines or displacement (Bradbury *et al.,* 2014). Therefore, species have been screened in for non-breeding season impacts.
 It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination



Matrix 39: Firth of Forth SPA Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9004			n to ECC / 3	27.9 km tc	) ANS / 353	.2 km to bic	ogenic ree	ef / 355.4 km	to ORCF	1				
Effect	displace activity	ment du and ents in	vessel	displacem	of		Collisions waterbird		migratory	Barrier waterb		r migratory	through	n effects on s and prey	combination
Stage of Development	C	0	D	C	0	D	C	0	D	С	0	D	C	O D	C O D
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa

Хa The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. Therefore, LSE can be discounted in relation to all effects alone



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900			m to ECC ,	/ 335.9 km 1	to ANS / 361	L.2 km to bic	ogenic re	eef / 363.4 kn	n to ORCF	þ							
Effect	activity	ement du / and nents in	ance and ue to work vessel both the intertidal	displace present infrastr	ce of	nce and e to the array			migratory	Barrier waterb		or migratory		gh eff ats an	impacts ects on id prey		binatio cts	on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Gannet	√a	√a	√a	√a	√a	√a		√a								√c	√c	√c
Kittiwake	Xd	Хd	Хd	Хd	Xd	Хd		√b								√c	√c	√c
Guillemot	√b	√b	√b	√b	√b	√b		Хd								√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b		Хd								√c	√c	√c
Puffin	√b	√b	√b	√b	√b	√b		Хd								√c	√c	√c
Lesser black-backed gull	Xd	Хd	Хd	Хd	Хd	Хd		Хd								Хd	Xd	Хd
Herring gull	Xd	Xd	Хd	Хd	Хd	Xd		Хd								Хd	Xd	Хd
European shag	Xd	Хd	Хd	Хd	Хd	Хd		Хd								Хd	Xd	Хd
Sandwich tern	Xd	Хd	Хd	Хd	Хd	Хd		Хd								Хd	Xd	Хd
Roseate tern	Xd	Хd	Хd	Хd	Хd	Хd		Хd								Хd	Xd	Хd
Arctic tern	Xd	Хd	Xd	Хd	Xd	Хd		Хd								Хd	Xd	Хd
Common tern	Xd	Xd	Xd	Xd	Xd	Xd		Хd								Xd	Xd	Xd

- √a The Project array is within the mean-maximum +1SD foraging ranges (Woodward *et al.*, 2019) for designated seabird species and therefore, has breeding season connectivity. Designated features have high or very high vulnerability to collision risk with turbines and/or displacement effects (Bradbury et al., 2014). Therefore, these species have been screened into the assessment based on potential collision risk and disturbance/displacement impacts.
- These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

√c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.

Хd The Project array is outside the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore, has breeding season connectivity. Designated seabird species is not vulnerable to the impact and therefore, LSE can be discounted in relation to this effect alone.



#### Matrix 41: Poole Harbour Ramsar

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK11054			n to ECC / 3	381.1 km to	ANS / 309	.6 km to bio	ogenic ree	ef / 329.9 km	to ORCP					
Effect	displace activity	and ents in k	to work vessel	displacen			Collisions waterbird		migratory	Barrier e waterbiro		migratory	through		combination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	D D	C O D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa

# Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. Хa Therefore, LSE can be discounted in relation to all effects alone



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK110	Harbour R 54 (1005) km to arra		n to ECC /	′ 381.1 km <sup>-</sup>	to ANS / 309	.6 km to bi	ogenic re	ef / 329.9 km	n to ORCF	)							
Effect	Direct disturbance and displacement due to work activity and vessel movements in both the offshore and intertidal zones						Collisions waterbird		migratory	Barrier waterb	effects for irds	migratory	throu	gh eff ats an	impacts ects on d prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Mediterranean gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Xa

Xa The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore has no breeding season connectivity. Therefore, LSE can be discounted in relation to all effects alone



#### Matrix 43: Imperial Dock Lock, Leith SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9004	451	k, Leith SP/ / 378.1 kn		355.8 km to	ANS / 377	.3 km to bio	ogenic re	eef / 378.4 km	1 to ORCP							
Effect	displace activity	and ents in		displace presenc			Collisions waterbird		migratory	Barrier waterbi	effects for irds	migratory	through	n effects on s and prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	O D	С	0	D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Хa	Ха	Ха	Ха	Ха			Хa	Хa	Хa

# Evidence supporting conclusions

Хa The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone



#### Matrix 44: Firth of Tay and Eden Estuary SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9004:	121	len Estuar / 396.7 kn		67.6 km to	ANS / 394	.2 km to bic	ogenic re	ef / 396.7 km	to ORCP							
Effect	displace activity	and ents in l	to work vessel	displacen	of		Collisions waterbird		migratory	Barrier e waterbir		migratory	through	impacts effects on and prey	comb		
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	0 D	C	0 D	
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Ха	Xa X	а

#### Evidence supporting conclusions

Хa The Project array is beyond the site-specific mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone



#### Matrix 45: Chesil Beach and The Fleet SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9010				11.2 km to	ANS / 341	.0 km to bio	ogenic ree	ef / 360.5 km	to ORCP					
Effect	activity	and ents in l	to work vessel	displacen	of		Collisions waterbirc		migratory	Barrier e waterbiro		migratory	through		combination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	D D	C O D
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa

# Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. Хa Therefore, LSE can be discounted in relation to all effects alone



Matrix 46: Fowlsheugh SPA																		
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900			m to ECC	/ 393.4 km ti	o ANS / 426	5.7 km to	piogenic re	eef / 430.9 kr	n to ORCF	)							
Effect	activity	ement du v and nents in	vesse	displac presen infrasti	ement due ce of				migratory	Barrier waterbi		or migratory		igh eff ats ar	impacts fects on nd prey			on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D			
Kittiwake	√b	√b	√b	√b	√b	√b		√b			√b					√d	√d	√d
Herring gull	Хc	Хc	Хc	Хc	Хc	Хc	Хс	Хc	Хc	Хc	Хс	Хc				Хс	Хc	Хc
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√d	√d	√d
Razorbill	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√d	√d	√d
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

Xa Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury *et al.,* 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. Therefore, LSE can be discounted in relation to all effects alone.

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore, has no breeding season connectivity. However, designated features have high or very high vulnerability to collision risk with turbines or displacement effects (Bradbury *et al.,* 2014). Therefore, some vulnerable species have been screened into the assessment for the non-breeding season based on potential collision risk and disturbance/displacement impacts.

Xc The Project array is beyond the site-specific mean-maximum +1SD foraging ranges (Woodward *et al.*, 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.

 $\sqrt{d}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



#### Matrix 47: Ythan Estuary, Sands of Forvie and Meikle Loch SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9002	2221			eikle Loch Sl 451.1 km to		.0 km to bio	ogenic re	eef / 454.6 km	n to ORCP	)							
Effect	activity	ement du and nents in		displace presenc infrastru					migratory	Barrier waterb	effects for irds	migratory	throu	gh effe Its an	impacts ects on d prey	comt		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Common tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Little tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward *et al.,* 2019) for designated seabird species and therefore has no breeding season connectivity. Ха Therefore, LSE can be discounted in relation to all effects alone



# Matrix 48: Ythan Estuary and Meikle Loch Ramsar

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK1306	1 (939)		ch Ramsar 1 to ECC / 4		ANS / 464	.3 km to bic	ogenic re	ef / 469.2 km	n to ORCP					
Effect	displace activity	ment due and ents in l	vessel		of		Collisions waterbird		migratory	Barrier e waterbirc		migratory	through		combination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C (	D D	C O D
Sandwich tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa

# Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. Хa Therefore, LSE can be discounted in relation to all effects alone



### Matrix 49: Buchan Ness to Collieston Coast SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	XXXXXX		ollieston Co / / 469.8 kn		433.8 km to	o ANS / 464	.8 km to bic	genic re	ef / 469.8 km	to ORCP							
Effect	activity	ment du and ents in		displace presenc			Collisions waterbird		migratory	Barrier e waterbire		migratory	throug	gh effe ts and	impacts ects on d prey	coml	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0 D
Guillemot	√b	√b	√b	√b	√b	√b		Хa			Ха					√c	√c √
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха		√b			√b						√c

## Evidence supporting conclusions

- Ха The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. Designated seabird species is not vulnerable to the impact and therefore, LSE can be discounted in relation to this effect alone.
- The Project array is outside of the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore, has no breeding season connectivity. Designated √b features have high or very high vulnerability to collision risk with turbines or displacement (Bradbury et al., 2014). Therefore, species have been screened in for non-breeding season impacts. √c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination



## Matrix 50: Troup, Pennan and Lion's Heads SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900	2471	nd Lion's H y / 511.7 k		/ 470.5 km	to ANS / 506	5.8 km to	biogenic re	ef / 511.7 kn	n to ORCI	)							
Effect	activity	ement du / and nents in		displac presen infrastr		e to the	Collisio waterb		migratory	Barrier waterb		or migratory		gh effe ats an	impacts ects on d prey			on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Хa
Herring gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c

Evidence supporting conclusions

Xa The Project array is beyond the mean-maximum +1SD foraging ranges for all designated seabird species (Woodward *et al.,* 2019) and therefore has no breeding season connectivity. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.

These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

 $\sqrt{c}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Matrix 51: East Caithness Cliffs SPA Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9001			m to ECC ,	<sup>/</sup> 554.4 km t	o ANS / 587	7.0 km to t	biogenic re	ef / 590.9 km	n to ORCP	,							
Effect	activity	ement du and ents in	nce and e to work vessel both the intertidal	displace present infrastr	ce of				migratory	Barrier waterbi	effects for irds	migratory		gh eff ats ar	impacts fects on nd prey	In comt effec		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Хa
Great black-backed gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Herring gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
European shag	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Great cormorant	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

Xa The Project array is beyond the site-specific mean-maximum +1SD foraging ranges (Woodward *et al.*, 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site.
 Therefore, LSE can be discounted in relation to all effects alone.

These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

 $\sqrt{c}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900			n to ECC /	582.5 km to	) ANS / 618.6	5 km to bio	genic reef	7 / 623.4 km t	o ORCP							
Effect	activity moven	y and nents in		displace present infrastr			Collision waterbin		migratory	Barrier waterbir		migratory	throug	h effects on ts and prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	O D	С	0	D
Puffin	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха			√c	√c	√c
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха			√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха			√c	√c	√c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха			Хa	√c	Хa
Fulmar	Xd	Xd	Xd	Xd	Xd	Xd	Xd	Xd	Xd	Xd	Xd	Xd			Хd	Xd	Vd

### Matula Collegethe Colle

## **Evidence supporting conclusions**

The Project array is beyond the site-specific mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We Ха conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.

These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c

Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Хd Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury et al., 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range.



## Matrix 53: Pentland Firth Islands SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9001			ו to ECC /	591.1 km tc	ANS / 627	.7 km to bio	ogenic re	eef / 632.7 km	n to ORCP							
Effect	activity	and ents in I	to work vessel	displace presenc			Collisions waterbird		migratory	Barrier waterbi	effects for rds	migratory	through	n effects on s and prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	C	0	D	C	O D	С	0	D
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Хa	Хa	Хa

# Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone



Matrix 54: Copinsay SPA																		
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Copins XXXXX 630.9 k	x	y / 646.2 km	ו to ECC /	<sup>/</sup> 608.8 km t	o ANS / 641	.2 km to b	iogenic re	ef / 646.6 km	n to ORCF	)							
Effect	activity	and nents in		present			Collision waterbir		migratory	Barrier waterb		or migratory		gh eff ats an	impacts ects on id prey			on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Ха
Great black-backed gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c

- Хa The Project array is beyond the mean-maximum +1SD foraging ranges for all designated seabird species (Woodward *et al.,* 2019) and therefore has no breeding season connectivity. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.
- These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).
- √c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Matrix 55: Hoy SPA																		
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Hoy SP/ UK9002 634.8 k	2141	y / 647.5 kı	m to ECC /	′ 607.0 km †	to ANS / 642	.8 km to	biogenic re	ef / 647.5 kn	n to ORCP								
Effect	activity	and ents in	ance and le to work vessel both the intertidal	displace present infrastr		e to the	Collisio waterb		migratory	Barrier waterbi		r migratory	Indire throu habit speci	gh eff ats ar	impacts fects on nd prey	In coml effec		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Arctic skua	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Peregrine falcon	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Red-throated diver	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Great skua	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Puffin	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Хa	√c	Хa
Great black-backed gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Хa	Хa	Хa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

- Хa Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury et al., 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward et al., 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. √b These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).
- √c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Matrix 56: Calf of Eday SPA Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	XXX	Eday SPA m to arra	y / 682.4 ki	n to ECC /	645.2 km	to ANS / 678	3.0 km to b	iogenic re	eef / 683.5 km	ו to ORCI	5						
Effect	activity movem	ement du and ients in	ince and e to work vessel both the intertidal	displace presenc infrastru	e of	e to the			migratory	Barrier waterb		or migratory	throug	gh eff ts ar	impacts fects on nd prey	combi	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С (	D C
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Xa 🗸	<mark>∕c</mark> Xa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c ∖	√c √c

- Хa The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.
- These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 57: Rousay SPA																		
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Rousay <mark>8573</mark> 668.0 k		y / 683.2 kr	n to ECC /	645.8 km	to ANS / 677	7.9 km to b	iogenic re	ef / 683.2 kn	n to ORCP								
Effect	activity	ement du and nents in		displace presence infrastru	e of	ue to the	Collision waterbin		migratory	Barrier waterbi		or migratory	throu	gh ef ats a	impacts ffects on nd prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Хa	√c	Хa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c

- The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.
- These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 58: Marwick Head SPA Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9002			n to ECC / 64	12.6 km to	o ANS / 679	.0 km to bi	ogenic re	eef / 683.9 km	to ORCP								
Effect	activity movem	ement du and nents in	vessel	Direct displaceme presence infrastruct	of		Collisions waterbirc		migratory	Barrier waterbi		r migratory	throu	gh ef its ai	impacts fects on nd prey	com		on
Stage of Development	С	0	D	C	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Хa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c

- The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.
- These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 59: Fair Isle SPA																		
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Fair Isle UK9002 674.7 k	2091	y / 690.0 k	m to ECC	/ 648.7 km	to ANS / 690	).2 km to	biogenic re	eef / 696.7 kn	n to ORCF	)							
Effect	activity	ement du and ients in	ance anc ue to work vesse both the intertida	displac presen infrasti	ce of	ue to the			migratory	Barrier waterb		or migratory		gh ef ats a	impacts fects on nd prey	In comk effec		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Great skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Arctic skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Хa
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
European shag	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Fair Isle wren	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Ха	Ха
Puffin	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Ха
Gannet	√b	√b	√b	√b	√b	√b	Ха	√b	Ха	Ха	√b	Ха				√c	√c	√c

- The Project array is beyond the mean-maximum +1SD foraging ranges (and maximum site-specific foraging range for fulmar) (Woodward *et al.*, 2019) for designated seabird species and therefore has Ха no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.
- These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is no potential for LSE during the breeding season. However, √b as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).
- It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination. √c



Matrix 60: West Westray SPA																		
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900			m to ECC	/ 650.9 km	to ANS / 688	3.6 km to	biogenic re	eef / 693.9 kn	n to ORCI	)							
Effect	activity	ement du / and nents in	ue to worl	displac presen infrastr		e to the			migratory	Barrier waterb		or migratory	throu	gh eff ats ar	impacts ects on nd prey			on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Arctic skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Хa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Razorbill	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

X a Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance.
 Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury *et al.,* 2014).

It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range.

The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward *et al.*, 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site.

This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.

These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

 $\sqrt{c}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



# Matrix 61: Papa Westray (North Hill and Holm) SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9002	2111	orth Hill and 1 / 699.9 km			) ANS / 695	.3 km to bio	ogenic re	ef / 700.7 km	to ORCP								
Effect	activity	and ients in	e to work	presenc			Collisions waterbird		migratory	Barrier e waterbirc		migratory	throug	gh eff ts ar	impacts fects on nd prey	coml		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Arctic skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

# Evidence supporting conclusions

The Project array is beyond the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species and therefore has no breeding season connectivity. We conclude negligible Хa potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. Therefore, LSE can be discounted in relation to all effects alone.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9002			n to ECC ,	<sup>7</sup> 681.8 km to	) ANS / 724	.3 km to	biogenic re	ef / 731.1 kn	n to ORCI	)						
Effect	activity	ement du and ients in		displace present			Collisio waterb		migratory	Barrier waterb		or migratory	throu	gh effe its an	impacts ects on d prey	combi	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C C	) D
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa >	(a Xa
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Xa 🗸	'c Xa
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				Xa >	(a Xa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				√c v	′c √o

# Matrix C2. Sumburgh Hoad SDA

Evidence supporting conclusions

Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Ха Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury et al., 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward et al., 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.

√b These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

√c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Noss S UK900 733.3 I	2081	y / 749.0 k	m to ECC /	<sup>/</sup> 709.5 km	to ANS / 752	.7 km to b	iogenic re	ef / 759.8 km	ו to ORCP								
Effect	activity	ement du and nents in		displace present infrastr		ue to the			migratory	Barrier waterbi		migratory	throu	gh effe ats an	impacts ects on d prey	comb		pn
Stage of Development	С	0	D	С	0	D	С	0	D	C	0	D	С	0	D	С	0	D
Puffin	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Хa
Gannet	√b	√b	√b	√b	√b	√b	Ха	√b	Ха	Ха	√b	Ха				√c	√c	√c
Great skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Xa	Ха	Ха	Ха				Ха	Хa	X a

Xa Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury *et al.*, 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward *et al.*, 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.

These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

 $\sqrt{c}$  It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Matrix 64: Foula SPA															
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Foula S XXXXXX 746.7 k	xx	y / 761.5 kr	n to ECC ,	/ 726.1 km t	:0 ANS / 76	1.2 km to l	piogenic re	ef / 767.6 kn	n to ORCP	)				
Effect	activity movem	ement du and	ance and le to work vessel both the intertidal	displace present infrastr			e waterbi		migratory	Barrier waterb		r migratory	Indirect through habitats species	impacts effects on and prey	combination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C C	) D	C O D
Puffin	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха			√c √c √c
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха			√c √c √c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха			Xa <mark>√c</mark> Xa
Great skua	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Хa	Ха	Ха	Ха	Ха			Xa Xa Xa
Arctic tern	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Хa	Ха	Ха	Ха	Ха			Xa Xa Xa
Shag	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Хa	Ха	Ха	Ха	Ха			Xa Xa Xa
Red-throated diver	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa
Leach's storm petrel	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa
Fulmar	Ха	Ха	Ха	Ха	Хa	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Xa Xa Xa

Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Ха Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury et al., 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward et al., 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.

√b These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

√c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Matrix 65: Fetlar SPA Name of designated site: Site Code: Closest Distance to Project	Fetlar 5 UK9002 777.5 k	2031	y / 793.4 k	m to ECC ,	<sup>/</sup> 754.7 km t	o ANS / 798	.6 km to b	iogenic re	ef / 805.8 km	ו to ORCP						
Likely Effects of Project Effect	activity	ement du and nents in	ince and e to work vesse both the intertida	displace present infrastr			Collision waterbir		migratory	Barrier waterbi		<sup>•</sup> migratory	Indire throu habita specie	gh eff ats an	impacts ects on id prey	combination
Stage of Development	С	0	D	C	0	D	C	0	D	С	0	D	С	0	D	C O D
Great skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa
Arctic skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa
Arctic tern	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa
Red-necked phalarope	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa
Dunlin	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa
Whimbrel	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Xa Xa Xa

X a Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury *et al.*, 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward *et al.*, 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.



Matrix 66: Hermaness,	Saxa Vord and	Valla Field SPA
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Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK900	2011	a Vord and y / 814.6 k			to ANS / 819	.3 km to I	piogenic re	ef / 826.5 km	n to ORCP	,							
Effect	activity	v and nents in	ue to work	displac presen infrasti					migratory	Barrier waterb		r migratory		gh eff its an	impacts ects on d prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	C	0	D
Great skua	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
European shag	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa
Red-throated diver	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Puffin	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Guillemot	√b	√b	√b	√b	√b	√b	Ха	Ха	Ха	Ха	Ха	Ха				√c	√c	√c
Kittiwake	Ха	Ха	Ха	Ха	Ха	Ха	Ха	√b	Ха	Ха	√b	Ха				Ха	√c	Хa
Gannet	√b	√b	√b	√b	√b	√b	Ха	√b	Ха	Ха	√b	Ха				√c	√c	√c
Fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха				Ха	Хa	Хa

Site has connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Ха Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury et al., 2014). It is therefore determined that significant effects would not manifest on this distant SPA/ Ramsar after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within the foraging range. The Project array is beyond the mean-maximum +1SD foraging ranges for all other designated seabird species (Woodward et al., 2019) and therefore has no breeding season connectivity. We conclude negligible potential for impact on migratory birds from this SPA/ Ramsar passing through the site based on the distance from the site. This SPA is therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.

√b These designated features are beyond mean-maximum +1SD foraging range (Bradbury et al., 2014; Dierschke et al., 2016). Therefore there is not potential for LSE during the breeding season. However, as the species BDMPS spans the colony and the Project, there is potential for connectivity in the non-breeding season(s).

√c It is considered that where there is a potential for LSE alone, there is a potential for LSE in-combination.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Various			Waddenze	ee; and Duir	nen Vlieland	1										
Effect	displace activity	ement du and ents in		displace presence infrastru			Collisions waterbird		migratory	Barrier waterbi	effects for rds	migratory	throug	h effects on s and prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	O D	С	0	D
Lesser black-backed gull	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Хa	Ха	Xa

# Matrix 67: Transboundary sites for Lesser black-backed gull (3 sites)

### Evidence supporting conclusions

Xa Sites have connectivity with breeding lesser black-backed gull based on mean-maximum +1SD foraging range, however the distance is at the extent of the foraging range and the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement (Bradbury *et al.,* 2014).

It is therefore determined that significant effects would not manifest on these distant SPAs/ Ramsars after the likelihood and severity of effects on the SPAs have been apportioned to all SPAs within the foraging range.

These SPAs are therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.



# Matrix 68: Transboundary sites for Northern fulmar (9 sites)

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Camare Various	t; Falaise d	lu Bessin C			•	· •	· ·	d'Erquy-Cap ssant-Molèn								
Effect	activity	and ents in	e to work vessel	Direct displacen presence infrastruc	of		Collisions waterbird		migratory	Barrier e waterbird		migratory	throug	n effects on s and prey	coml		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	C	O D	C	0	D
Northern fulmar	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Ха	Ха	Ха

## Evidence supporting conclusions

Xa Sites have connectivity with breeding fulmar based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury *et al.*, 2014).

It is therefore determined that significant effects would not manifest on these distant SPAs/ Ramsars after the likelihood and severity of effects on the SPAs have been apportioned to all SPAs within the foraging range.

These SPAs are therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Various			s; Iles Houa	at-Hoedic; (	Duessant-N	∕lolène; anc	Baie de	Morlaix.								
Effect	activity movem	ement du and ents in		displacen presence infrastrue	e of		Collisions waterbird		migratory	Barrier waterbir		migratory	throug	h effects or s and prey	com		on
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	O D	С	0	D
Manx shearwater	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха	Ха			Хa	Ха	Хa

## Matrix 69: Transboundary sites for Manx shearwater (4 sites)

### Evidence supporting conclusions

X a Sites have connectivity with breeding Manx shearwater based on mean-maximum +1SD foraging range, however the significance of effects at a population level is considered to decrease exponentially with distance. Due to the large foraging range for this species, the likelihood and or severity of the effect experienced locally is considered negligible. In addition, this species has very low vulnerability to displacement and collision (Bradbury *et al.,* 2014).

It is therefore determined that significant effects would not manifest on these distant SPAs/ Ramsars after the likelihood and severity of effects on the SPAs have been apportioned to all SPAs within the foraging range.

These SPAs are therefore not considered relevant in the context of the HRA and LSE can be discounted in relation to all effects alone.



### Sites designated with Migratory Fish Features 3.4

# Matrix 70: Humber Estuary SAC

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK00	030170			m to E(	CC / 47	.5 km	to ANS	/ 23.8	km to	bioger	nic reef	/ 19.7	to ORC	CP												
Effect	Unde noise	erwate e	r	sedir	ended nent / osition		Indir	ect pol	lution		dental Ition		EMF			INNS			loss /	ical hal ′ rbance		Chan	iges to	prey	In-co effeo	ombina cts	tion
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Sea lamprey	√a	Хb	√a	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb
River lamprey	√a	Хb	√a	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb	Хb

# Evidence supporting conclusions

- The range between the array areas and designated site mean that there is a potential for LSE for this species at this site. √a
- No potential for LSE. These features have been screened out from assessment as a result of the distance between the Project and the designated site and the nature of effect. Хb



### Sites Designated with Onshore Ecology Features 3.5

### Matrix 71: Humber Estuary SPA

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Humber Estuary SPA UK9006111 54.0 km to array / 12.5 km to ECC / 15.3 km to ANS / 47.5 km to biogenic reef / 18.2 km to ORCP Risk of loss of or Risk of disturbance/ Loss of foraging, roosting and Risk of pollution											
Effect				Risk of disturbance/ displacement			g habitat for outside	r birds inside the SPA ation of the				
Stage of Development	C	O D	C	0	D	C	0	D	С	0	D	
Great bittern			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Common shelduck			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Eurasian marsh harrier			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Hen harrier			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Pied avocet			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
European golden plover			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Red knot			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Dunlin			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Ruff			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Black-tailed godwit			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Bar-tailed godwit			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Common redshank			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Little tern			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	
Waterbird assemblage			√a	√a	√a	√a	Хb	Хb	√a	Хb	√a	

# Evidence supporting conclusions

√a

Risk of disturbance, and of loss of foraging, roosting and nesting habitat for birds outside the SPA only based on ranges of the ornithological features.

No potential for LSE. These features have been screened out from assessment as a result of the distance between the Project and the designated site and the nature of the works and activities in Хb these different phases.





## Matrix 72: Humber Estuary Ramsar Site

Matrix 72: Humber Es	tuary	кать	ar Site	e								
Name of designated site:	Hun	nber E	Estuar	y Ran	nsar S	ite						
Site Code:	UK1	1031	(663)									
				ıv / 12	2.5 kn	n to E	CC / 1	.5.3 kı	n to A	ANS /	47.5 k	km to biogenic reef / 18.2 km to ORCP
Project												
Likely Effects of Proje	ect											
Effect		of lo		Risk		of	Loss		of	Risk	of po	llution
		lamag itats	ge to		urbar blacer		fora	ging, ting	and			
	TIAU	Itals		uisp	Jacer	nem	nest	<u> </u>	anu			
							habi		for			
							bird		iside			
							and	out	tside			
							the		SPA			
								endin				
								tion o ve gro				
								astruc				
Stage of	С	0	D	С	0	D	C	0	D	С	0	D
Development												
Criterion 1- dune	Хb	Хb	Хb				Хb	Хb	Хb	Хb	Хb	Хb
systems and humid												
dune slacks;												
Criterion 5 – assemblages of	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
international												
importance												
(waterfowl, non-												
breeding season);												
Criterion 6 –	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
species/populations												
occurring at levels of international												
importance												
Common shelduck	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
Eurasian golden		√a	Xb			√a			Xb	√a	Xb	√a
plover	V U	V U		V u		V u	V u			l • u		
Red knot	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
Dunlin	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
Black-tailed godwit	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
Bar-tailed godwit	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
Common redshank	√a	√a	Хb	√a	√a	√a	√a	Хb	Хb	√a	Хb	√a
/a Poten	tial fo		duo ta	dict	urhan	<u> </u>	ad loc	c of fo	ragin	a and	rooct	ing babitat This is limited to birds and babitats outside of the RAMSAR

✓a Potential for LSE due to disturbance, and loss of foraging and roosting habitat. This is limited to birds and habitats outside of the RAMSAR.
 Due to the mobile nature of the birds, the ornithological features are considered to have potential for LSE.





No potential for LSE. These features have been screened out from assessment as a result of the distance between the Project and the designated site and the nature of the works and activities in these √b different phases.



Matrix 73: Humber Estuary SAC Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Humber Estuary SAC         UK0030170         54.4 km to array / 18.9 km to ECC / 19.7 km to ANS / 47.5 km to biogenic reef / 23.8 km to ORCP         Risk of loss of or damage to       Risk of disturbance         Loss of foraging, roosting and       Risk of pollution												
Effect		habitats			f disturbanco	e	nestir and o on loo	of foraging, ng habitat fo outside the S cation of the tructure					
Stage of Development	C	0	D	C	0	D	С	0	D	C	0		
Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks	Ха	Xa	Xa							Ха	Xa		
Estuaries	Ха	Ха	Xa							Ха	Xa		
Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats	Ха	Ха	Xa							Ха	Ха		
Coastal lagoons	Ха	Ха	Ха							Ха	Ха		
Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand	Ха	Xa	Ха							Ха	Xa		
Atlantic salt meadows	Ха	Ха	Ха							Ха	Ха		
Embryonic shifting dunes	Ха	Ха	Ха							Ха	Ха		
Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	Ха	Ха	Xa							Ха	Ха		
Shifting dunes with marram	Ха	Ха	Ха							Ха	Ха		
Fixed dunes with herbaceous vegetation (grey dunes)	Ха	Ха	Xa							Ха	Ха		
Dune grassland	Ха	Ха	Ха							Ха	Ха		
Dunes with <i>Hippophae rhamnoides</i> ; Dunes with sea-buckthorn	Ха	Ха	Xa							Ха	Ха		

Хa

Due to the distance between the Order Limits and the SAC, and the nature of the habitats, there is no risk of undermining the conservation objectives for this SAC.



D
Ха
Xa Xa
Xa Xa
Ха
Ха
Xa Xa Xa
Xa Xa
V a
Xa Xa

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC UK0030270 54.4 km to array / 11.9 km to ECC / 15.5 km to ANS / 51.5 km to biogenic reef / 1.6 km to ORCP											
Effect	Risk of habitat		r damage to	Risk of	disturbanc	e	nestin and or on loc	of foraging, g habitat foutside the S ation of the cructure				
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	
Embryonic shifting dunes	√a	√a	√a	√a		√a				√a	√a	
Shifting dunes along the shoreline with Ammophila arenaria (""white dunes"")	√a	√a	√a	√a		√a				√a	√a	
Fixed coastal dunes with herbaceous vegetation (""grey dunes"")	√a	√a	√a	√a		√a				√a	√a	
Dunes with Hippophae rhamnoides	√a	√a	√a	√a		√a				√a	√a	
Humid dune slacks	√a	√a	√a	√a		√a				√a	√a	

# Matrix 74: Saltfloothy Thoddlothorno Dunos & Cibraltar Doint SAC

Evidence supporting conclusions

Risk of loss of or damage to Annex I habitats depending on location of the above ground infrastructure. Potential for LSE on all qualifying features. This is a precautionary conclusion based on project √a design uncertainties.



D
√a
√a
√a
√a
√a

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK9008	The Wash SPA UK9008021 66.3 km to array / 16.5 km to ECC / 22.7 km to ANS / 74.0 km to biogenic reef / 3.8 km to ORCP												
Effect		Risk of loss of or damage to habitats			listurbance/ d	lisplacement	habitat the SPA	for birds ins	sting and nesting side and outside n location of the ructure					
Stage of Development	C	0	D	C	0	D	C	0	D	С	0	D		
Bewick's swan				√a	√a	√a	√a			√a		√a		
Pink-footed goose				√a	√a	√a	√a			√a		√a		
Dark-bellied brent goose				√a	√a	√a	√a			√a		√a		
Common shelduck				√a	√a	√a	√a			√a		√a		
Eurasian wigeon				√a	√a	√a	√a			√a		√a		
Gadwall				√a	√a	√a	√a			√a		√a		
Northern pintail				√a	√a	√a	√a			√a		√a		
Black (common) scoter				√a	√a	√a	√a			√a		√a		
Common goldeneye				√a	√a	√a	√a			√a		√a		
Eurasian oystercatcher				√a	√a	√a	√a			√a		√a		
Grey plover				√a	√a	√a	√a			√a		√a		
Red knot				√a	√a	√a	√a			√a		√a		
Sanderling				√a	√a	√a	√a			√a		√a		
Dunlin				√a	√a	√a	√a			√a		√a		
Black-tailed godwit				√a	√a	√a	√a			√a		√a		
Bar-tailed godwit				√a	√a	√a	√a			√a		√a		
Eurasian curlew				√a	√a	√a	√a			√a		√a		
Common redshank				√a	√a	√a	√a			√a		√a		
Ruddy turnstone				√a	√a	√a	√a			√a		√a		
Common tern				√a	√a	√a	√a			√a		√a		
Little tern				√a	√a	√a	√a			√a		√a		
Waterbird assemblage				√a	√a	√a	√a			√a		√a		



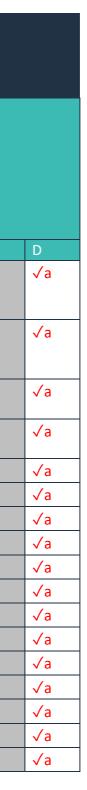
Risk of disturbance and loss of foraging, roosting and nesting habitat for birds inside and outside the SPA depending on location of the above ground infrastructure and Risk of pollution. Potential for √a LSE on all qualifying features.



Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK110 66.2 kr		/ 16.5 km to			NS / 74.0 km to					
Effect	Risk of habitat		r damage to	Risk displac	of ement	disturbance/	nesting and ou on loca	f foraging, g habitat fo itside the S ition of the ructure	Risk of pollution		
Stage of Development	С	0	D	С	0	D	С	0	D	С	0
Criterion 1 – Saltmarshes, major intertidal banks of sand and mud, shallow water, and deep channels	√a			√a	√a	√a	√a			√a	
Criterion 3 – Inter-relationship between saltmarshes, intertidal sand, mudflats, and estuarine waters	√a			√a	√a	√a	√a			√a	
Criterion 5 – Bird assemblages of international importance				√a	√a	√a	√a			√a	
Criterion 6 – Bird species/ populations occurring at levels of international importance				√a	√a	√a	√a			√a	
Common redshank				√a	√a	√a	√a			√a	
Eurasian curlew				√a	√a	√a	√a			√a	
Eurasian oystercatcher				√a	√a	√a	√a			√a	
Grey plover				√a	√a	√a	√a			√a	
Red knot				√a	√a	√a	√a			√a	
Sanderling				√a	√a	√a	√a			√a	
Black-headed gull				√a	√a	√a	√a			√a	
Common eider				√a	√a	√a	√a			√a	
Bar-tailed godwit				√a	√a	√a	√a			√a	
Common shelduck				√a	√a	√a	√a			√a	
Dark-bellied brent goose				√a	√a	√a	√a			√a	
Dunlin				√a	√a	√a	√a			√a	
Pink-footed goose				√a	√a	√a	√a			√a	

Risk of loss of or damage to estuary habitats. Risk of disturbance and loss of foraging and roosting habitat inside and outside the Ramsar site, depending on location of the above ground infrastructure.
 Risk of pollution. Potential for LSE on all qualifying features.





# Matrix 77: The Wash & North Norfolk Coast SAC

Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	The Wash & North Norfolk Coast SAC UK0017075 47.8 km to array / 13.4 km to ECC / 19.3 km to ANS / 50.4 km to biogenic reef / 0.0 km to ORCP															
Effect	Risk of loss of or damage to habitats, reduction of habitat quality.				displacement			Loss of foraging, roosting and nesting habitat for birds inside and outside the SPA depending on location of the above ground infrastructure						Displacement of otter and reduction of otter habitat		
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	
Atlantic salt meadows	√a	√a	√a	√a		√a										
Mediterranean and thermo-Atlantic halophilous scrubs	√a	√a	√a	√a		√a										
Coastal lagoons	√a	√a	√a	√a		√a										
Otter				√a	√a	√a							√a		√a	

Evidence supporting conclusions

Risk of loss of or damage to Annex I habitats depending on location of the above ground infrastructure. Displacement of otter and reduction of otter habitat. Potential for LSE on all qualifying features. √a This is a precautionary conclusion based on project design uncertainties.



Matrix 78: Greater Wash SPA													
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	UK902			ECC / 0.0 km to ANS / 24.0 km to biogenic reef / 0.0 km to ORCP Risk of Loss of foraging, roosting and Risk of pollu									
Effect	habita				ance/displa		of Loss of nestin and ou on loca infrast		pollution				
Stage of Development	С	0	D	С	0	D	С	0	D	С	0		
Sandwich tern	√a			√a	√a	√a	√a			√a			
Common tern	√a			√a	√a	√a	√a			√a			
Little tern	√a			√a	√a	√a	√a			√a			

Risk of disturbance of nesting birds inside the SPA and loss of foraging habitat outside the SPA, depending on location of the above ground infrastructure; and Risk of pollution. Potential for LSE on all qualifying features.



D
√a
√a
√a

Matrix 79: Gibraltar Point SPA											
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	Gibraltar Point SPA UK9008022 62.9 km to array / 13.4 km to ECC / 19.3 km to ANS / 70.5 km to biogenic reef / 1.6 km to ORCP										
Effect			Risk displace	of ment	disturbance/	nesting h and outsi	abitat for k de the SPA on of the abo	osting and birds inside depending bve ground	Risk of pollution		
Stage of Development	С	0	D	С	0	D	С	0	D	С	0
Grey plover				√a	√a	√a	√a			√a	
Sanderling				√a	√a	√a	√a			√a	
Bar-tailed godwit				√a	√a	√a	√a			√a	
Little tern				√a	√a	√a	√a			√a	

Risk of disturbance, and of loss of foraging, roosting and nesting habitat outside the SPA depending on location of the above ground infrastructure. Risk of pollution. Potential for LSE on all qualifying √a features.



 D	
√a	
√a	
√a	
√a	

Matrix 80: Gibraltar Point RAMSAR											
ame of designated site:Gibraltar Point Ramsar Siteite Code:UK11027 (589)losest Distance to Project62.8 km to array / 13.4 km to ECC / 19.3 km to ANS / 70.5 km to biogenic reef / 1.6 km to ORCPikely Effects of Project62.8 km to array / 13.4 km to ECC / 19.3 km to ANS / 70.5 km to biogenic reef / 1.6 km to ORCP											
Effect			r damage to on of habitat	Risk displac	of ement	disturbance/	nestin and ou on loca infrast decline	f foraging, g habitat fo utside the S ation of the ructure, e in populat ebrates and			
Stage of Development	С	0	D	С	0	D	С	0	D	С	0
Ramsar Criterion 1: Coastal habitats – estuarine mudflats, sandbanks, and saltmarsh	√a		√a	√a	√a	√a				√a	
Ramsar Criterion 2: Red Data book invertebrates				√a	√a	√a	√a			√a	
Notable plant species				√a	√a	√a	√a	'a		√a	
Ramsar Criterion 5: Waterfowl				√a	√a	√a	√a			√a	
Ramsar Criterion 6: Grey plover, sanderling, bar- tailed godwit, dark-bellied brent goose				√a	√a	√a	√a			√a	

Risk of pollution, affecting aquatic invertebrates, plants and birds. Risk of disturbance and loss of foraging and roosting habitat outside the Ramsar site for dark-bellied brent goose. Potential for LSE √a on some coastal habitats, waterfowl, invertebrates and plants.

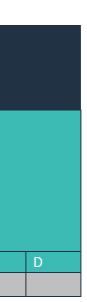


D	
√a	
	_
 √a	
√a	
√a	
√a	

Matrix 81: North Norfolk SPA											
Name of designated site: Site Code: Closest Distance to Project Likely Effects of Project	North Norfolk SPA UK9009031 56.4 km to array / 29.9km to ECC / 31.4 km to ANS / 59.0 km to biogenic reef / 10.8 km to ORCP										
Effect	Risk of loss of or damage to habitats, reduction of habitat quality.					sturbance/	E/ Loss of foraging, roosting and nesting habitat for birds inside and outside the SPA depending on location of the above ground infrastructure.				llution
Stage of Development	С	0	D	С	0	D	С	0	D	С	0
Pink-footed goose				√a	√a	√a	√a				

 $\sqrt{a}$  Risk of disturbance and loss of foraging and roosting habitat outside the SPA. Potential for LSE on pink-footed goose.





# Matrix 82: North Norfolk RAMSAR

designated site: Site Code:	76 56	.4 km		k RAN		m to E	CC / 31.	3 km t	o ANS	5 / 59	9.0 kr	n to biogenic reef / 10.8 km to ORCP					
Effect	of da ha re of	sk of mage bitats ductio hal ality.	or e to s, on oitat		irbanc acem		roostin nestin for bi and o	ng g ha irds i outside deper ation o gr	and abitat nside the nding of the ound		Risk of pollution						
Stage of Development	С	0	D	С	0	D	С	0	D	C	0	D					
Pink-footed goose				√a	√a	√a	√a										

Evidence supporting conclusions

 $\sqrt{a}$  Risk of disturbance and loss of foraging and roosting habitat outside the SPA. Potential for LSE on pink-footed goose.



