NORTH FALLS

Offshore Wind Farm

Report to Inform Appropriate Assessment

Appendix 1.1 Habitats Regulations Assessment Screening

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NORTH FALLS
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Glossary of Acronyms

AfL	Agreement for Lease
AoO	Advice on Operations
BDMPS	Biologically Defined Minimum Population Scales
BEIS	Business Energy and Industrial Strategy
CIS	Celtic and Irish Sea
cSAC	Candidate Special Areas of Conservation
DCO	Development Consent Order
EACN	East Anglia Connection Node
EC	European Commission
EIA	Environmental Impact Assessment
EMF	Electromagnetic fields
EPP	Evidence Plan Process
EPS	European Protected Species
ETG	Expert Topic Group
EU	European Union
GGOW	Greater Gabbard Offshore Wind Farm
GWF	Galloper Wind Farm
HAT	Highest Astronomical Tide
HRA	Habitat Regulations Assessment
IFCA	Inshore Fisheries and Conservation Authority
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
km	Kilometres
LSE	Likely Significant Effects
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MU	Management Unit
NE	North East
NFOW	North Falls Offshore Wind Farm Limited (the Applicant)
nm	Nautical miles
NRMM	Non-Road Mobile Machinery
NS	North Sea
NSER	No Significant Effects Report
OCP	Offshore Converter Platform
O&G	Oil and Gas
O&M	Operation and Maintenance
OSP	Offshore Substation Platforms
OSPAR	Oslo and Paris Convention
OWF	Offshore wind farm

PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
pSAC	Possible Special Areas of Conservation
pSPA	Potential Special Protection Area
RIAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCANS	Small Cetacean Abundance In North Sea
SCI	Sites of Community Importance
SD	Standard deviation
SE	South East
SMRU	Sea Mammal Research Unit
SNCBs	Statutory Nature Conservation Bodies
SPA	Special Protection Areas
SoS	Secretary of State
TCC	Temporary Construction Compounds
TCPA	Town and Country Planning Act 1990
UK	United Kingdom
WS	West Scotland
WTG	Wind turbine generators
ZOI	Zone of Influence

Glossary of Terminology

Array area	The offshore wind farm area, within which the wind turbine generators, array cables, platform interconnector cable, offshore substation platform(s) and/or offshore converter platform will be located.
Array cables	Cables which link the wind turbine generators with each other, the offshore substation platform(s) and/or the offshore converter platform.
Haul road	The track along the onshore cable route used by construction traffic to access different sections of the onshore cable route.
Horizontal directional drill (HDD)	Trenchless technique to bring the offshore cables ashore at landfall. The technique will also be the primary trenchless technique used for installation of the onshore export cables at sensitive areas of the onshore cable route.
Jointing bay	Underground structures, constructed at regular intervals along the onshore cable route to connect the sections of cable together so that each cable is a continuous length, as well as facilitating the installation of the cables into the buried cable ducts.
Landfall	The location where the offshore export cables come ashore at Kirby Brook.
National Grid connection point	The grid connection location for the Project. National Grid are proposing to construct new electrical infrastructure (a new substation) to allow the Project to connect to the grid, and this new infrastructure will be located at the National Grid connection point.
Offshore cable corridor	The corridor of seabed from the array area to the landfall within which the offshore export cables will be located.
Offshore converter platform	Should an offshore connection to a third party HVDC cable be selected, an offshore converter platform would be required. This is a fixed structure located within the array area, containing HVAC and HVDC electrical equipment to aggregate the power from the wind turbine generators, increase the voltage to a more suitable level for export and convert the HVAC power generated by the wind turbine generators into HVDC power for export to shore via a third party HVDC cable.
Offshore export cables	The cables which bring electricity from the offshore substation platform(s) to the landfall, as well as auxiliary cables.
Offshore project area	The overall area of the array area and the offshore cable corridor.
Offshore substation platform(s)	Fixed structure(s) located within the array area, containing HVAC electrical equipment to aggregate the power from the wind turbine generators and increase the voltage to a more suitable level for export to shore via offshore export cables.
Onshore cable route	Onshore route within which the onshore export cables and associated infrastructure would be located.
Onshore export cables	The cables which take the electricity from landfall to the onshore substation. These comprise High Voltage Alternative Current (HVAC) cables, buried underground.
Onshore project area	The boundary within which all onshore infrastructure required for the Project will be located (i.e. landfall; onshore cable route, accesses, construction compounds; onshore substation and cables to the National Grid substation).
Onshore substation	A compound containing electrical equipment required to transform and stabilise electricity generated by the Project so that it can be connected to the National Grid.
Onshore substation construction compound	Area set aside to facilitate construction of the onshore substation. Will be located adjacent to the onshore substation.
Platform interconnector cable	Cable connecting the offshore substation platforms (OSP); or the OSP and offshore converter platform (OCP)
Safety zones	A marine zone outlined for the purposes of safety around a possibly hazardous installation or works / construction area
Scour protection	Protective materials to avoid sediment being eroded away from the base of the wind turbine generator foundations and offshore substation platform (OSP) or / and offshore converter platform (OCP) foundations as a result of the flow of water.

Temporary construction compound	Area set aside to facilitate construction of the onshore cable route. Will be located adjacent to the onshore cable route, with access to the highway where required.
The Applicant	North Falls Offshore Wind Farm Limited (NFOW).
The Project or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure
Transition joint bay	Underground structures that house the joints between the offshore export cables and the onshore export cables.
Trenchless crossing compound	Areas within the onshore cable route which will house trenchless crossing (e.g. HDD) entry or exit points.
Wind turbine generator (WTG)	Power generating device that is driven by the kinetic energy of the wind.

1 Introduction

1.1 Purpose of this document

1. This document provides the screening of European sites[1] in relation to the North Falls Offshore Wind Farm (herein 'North Falls' or 'the Project'). This is the first stage in the development of information to support Habitats Regulations Assessment (HRA).
2. European sites are proposed to be "screened out" where no Likely Significant Effect (LSE) from the Project is predicted, alone or in-combination with other plans and projects. Where LSE cannot be ruled out at this stage, the European site(s) are "screened in" and assessed further in the Report to Inform Appropriate Assessment (RIAA), provided with the Development Consent Order (DCO) application.
3. Further information on the legislation, policy and guidance regarding HRA is provided in Section 1.3 of the RIAA Part 1 Introduction (Document Reference 7.1.1), and an overview of the HRA process is provided in Section 1.4 of the RIAA Part 1.
4. Consultation on draft versions of the HRA screening report was undertaken in October 2021 and November 2022 via the Evidence Plan Process and in May 2023 alongside the Preliminary Environmental Information Report (PEIR) (see Section 3). This document includes the revised HRA screening based on stakeholder comments.

1.2 Project background

5. North Falls is an extension to the existing Greater Gabbard Offshore Wind Farm (GGOW) and would be located approximately 40km (at its nearest point) off the East Anglian coastline.
6. GGOW was commissioned in 2012 and in February 2017, the Crown Estate launched an opportunity for existing wind farms to apply for project extensions. North Falls Offshore Wind Farm Limited (NFOW) applied for a lease to develop an extension located immediately adjacent to the western boundary of the existing GGOW array areas. In August 2019, the Crown Estate consulted on and then concluded a plan-level HRA for the proposed extension projects and confirmed that North Falls (formerly 'Greater Gabbard Extension') would be among seven projects that would be awarded an Agreement for Lease (AfL).
7. The following three grid connection options are included in the Project design envelope.
    - Option 1: Onshore electrical connection at a National Grid connection point within the Tendring peninsula of Essex, with a project alone onshore cable route and onshore substation infrastructure.
    - Option 2: Onshore electrical connection at a National Grid connection point within the Tendring peninsula of Essex, sharing an onshore cable route and

[1] Includes European offshore marine sites

onshore cable duct installation (but with separate onshore export cables) and co-locating separate project onshore substation infrastructure with Five Estuaries Offshore Wind Farm; or

- Option 3: Offshore electrical connection supplied by a third-party.

2 Project location

8. The following sections provide an overview of the project location. A description of the Project is provided in Section 2 of the RIAA Part 1 (Document Reference: 7.1.1) and further information is available in the Environmental Statement (ES) Chapter 5 Project Description (Document Reference: 3.1.7).

9. The offshore and onshore project areas have been selected taking into consideration relevant consultation feedback, environmental impacts and engineering constraints, discussed further in ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference 3.1.6) and in the HRA Derogation Provision of Evidence (Document Reference 7.2).

2.1 Offshore project area

10. In the context of this report, “offshore” refers to the area below mean high water springs (MHWS).

11. The offshore project area lies in the region of the Outer Thames Estuary, in the southern North Sea.

12. The array area is approximately 95km^{2,} within which the wind turbine generators (WTGs), array cables, platform interconnector cables, offshore substation platforms (OSPs) and offshore converter platform (OCP, if required) will be installed. At closest point, the array area lies approximately 40km from shore.

13. The electricity will be connected to the shore by offshore export cables which will be located within an offshore cable corridor running from the array area to the landfall search area between Clacton-on-Sea and Frinton-on-Sea. The offshore cable corridor runs along the northern boundary of the Margate and Long Sands Special Area of Conservation (SAC) and has a small area of overlap with the Outer Thames Estuary Special Protection Area (SPA). The offshore cable corridor was selected in consultation with Natural England and other stakeholders and was designed to minimise effect on designated sites.

14. The North Falls array area and offshore cable corridor are collectively referred to as the ‘offshore project area’ (Figure 2.1).

15. The seabed in the array areas is between 5m and 59m below sea level and the substrate is predominantly sand and gravel.

360000 400000 440000 480000

5800000 5760000 5720000 5680000

N

HARLESTON
DISS
HALESWORTH
SOUTHWOLD
FRAMLINGHAM
STOWMARKET
LEISTON
ALDEBURGH
DBRIDGE
IPSWICH
HADLEIGH
FELIXSTOWE
HARWICH
WIVENHOE
WALTON-ON-THE-NAZE
FRINTON-ON-SEA
BRIGHTLINGSEA
CLACTON-ON-SEA
WEST MERSEA
MARGATE
WHITSTABLE
HERNE BAY
RAMSGATE
FAVERSHAM
CANTERBURY
SANDWICH
DEAL

Outer Thames Estuary (SPA)
Minsmere-Walberswick (SPA)
Outer Thames Estuary (SPA)
Alde-Ore Estuary (SPA)
Alde, Ore and Butley Estuaries (SAC)
Deben Estuary (SPA)
Orfordness-Shingle Street (SAC)
Southern North Sea (SAC)
Stour and Orwell Estuaries (SPA)
Hamford Water (SPA)
Colne Estuary (SPA)
Blackwater Estuary (SPA)
Dengie (SPA)
Essex Estuaries (SAC)
Crouch and Roach Estuaries (SPA)
Outer Thames Estuary (SPA)
Foulness (SPA)
Margate and Long Sands (SAC)
Benfleet and Southend Marshes (SPA)
Thanet Coast and Sandwich Bay (SPA)
Thanet Coast (SAC)
The Swale (SPA)

Legend

- North Falls Array Area
- Offshore Cable Corridor
- Greater Gabbard Offshore Wind Farm
- Galloper Offshore Wind Farm
- Five Estuaries Offshore Wind Farm
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

0 2.5 5 10 nm

0 5 10 20 km

Drawing Title

North Falls Offshore Project Area and Surrounding European Sites

Rev	Date	Remarks	Drwn	Chkd
02	12/12/2023	Second issue	FC	GK
01	20/09/2021	First issue	FC	GK

Drawing Number	Figure Number
PB9244-RHD-ZZ-OF-DR-GS-0093	2.1

Scale	Plot Size	Datum	Projection
1:500,000	A3	WGS84	UTM31N

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NORTH FALLS
Offshore Wind Farm

File ref: C:\Users\305050\OneDrive - Royal HaskoningDHV\Team - Project-PB9244-North-Falls-Team-Space\WIP\E02 GIS\02_Shared\02_Figures\06_HRA\HRA_Screening\PB9244_RHD_ZZ_OF_DR_GS_0093_OffshoreHabitatsSites.mxd

2.2 Landfall area

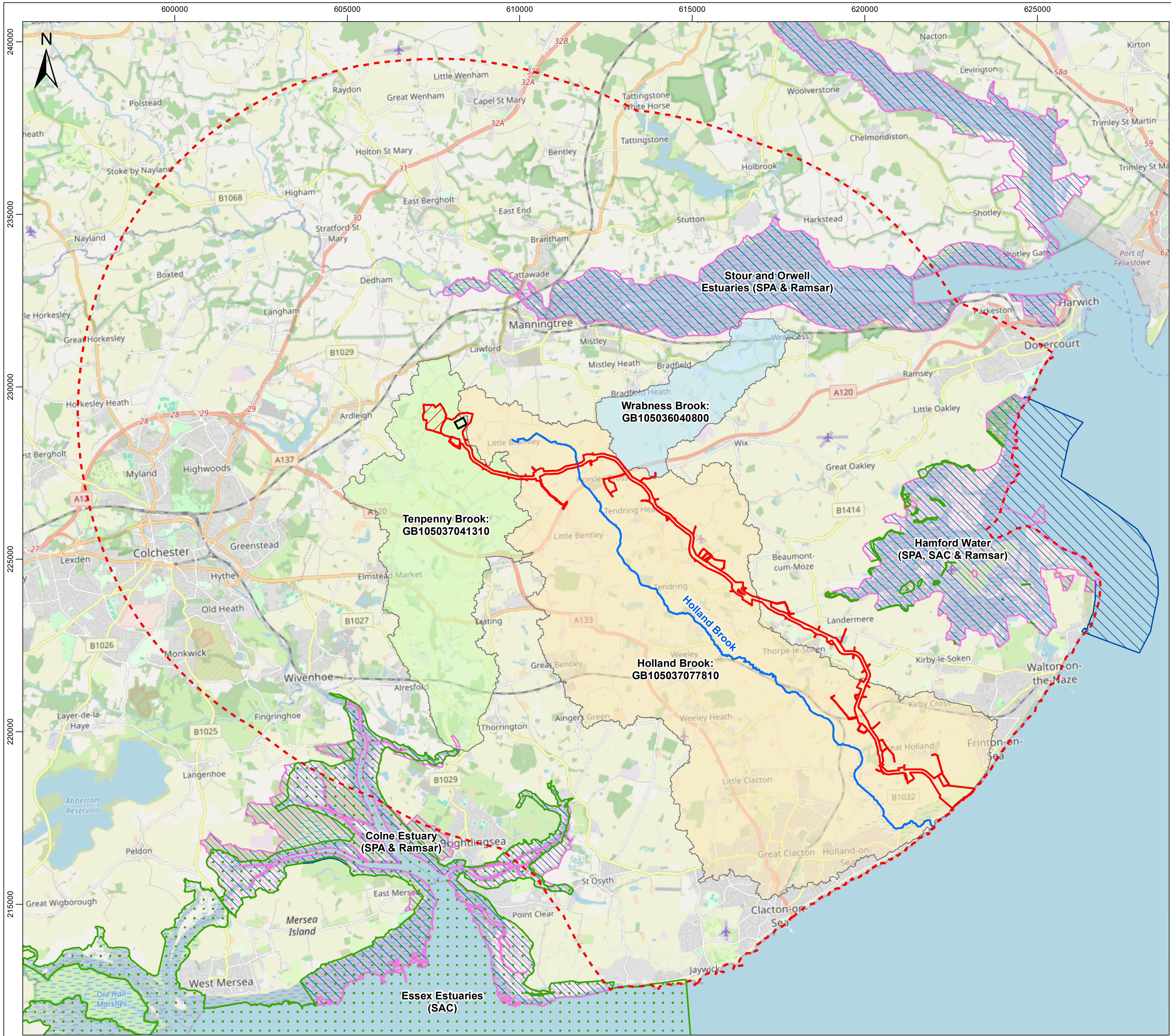
16. The offshore export cables will be brought ashore ('landfall') at Kirby Brook in Essex.

2.3 Onshore project area

17. The project's onshore infrastructure is proposed to be located entirely within the Tendring peninsula of Essex. The Project's onshore infrastructure comprises the following elements:

    - Onshore cable route, between approximately 72 - 130m wide and including space for temporary works for the installation of cable ducts and the installation of onshore export cables, including areas for temporary construction compounds (TCCs), construction and operation and maintenance accesses;
    - Onshore substation, proposed to be located west of Little Bromley;
    - Onshore substation works area, which includes land required for temporary construction, export cables, means of access, drainage, landscaping, environmental mitigation; and
    - The search area for the East Anglia Connection Node (EACN) (the Project's National Grid connection point) within which the cables from the onshore substation will connect to the national grid.

18. The footprint of the project's onshore infrastructure is referred to herein as the 'onshore project area', shown on Figure 2.2.



Legend

- Onshore Project Area
- Onshore Substation
- East Anglia Connection Node (EACN)
- North Falls Onshore Project Area 10km Buffer
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Ramsar
- WER River Water Body

WER River Water Body Catchment

- Holland Brook
- Tenpenny Brook
- Wrabness Brook

0 1.25 2.5 5 km

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Drawing Title

North Falls Onshore Project Area and Surrounding European Sites

Rev	Date	Remarks	Drwn	Chkd
01	10/07/2024	First issue	FC	GC

Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0607	2.2

Scale	Plot Size	Datum	Projection
1:110,000	A3	OSGB36	BNG

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File ref: C:\Users\305050\OneDrive - Royal HaskoningDHV\Team - Project-PB9244-North-Falls-Team-Space\WIP\E02 GIS\02_Shared\02_Figures\06_HRA\HRA_Screening\PB9244_RHD_ZZ_ON_DR_GS_0607_OnshoreHabitatsSites.mxd

3 Consultation

19. The draft offshore HRA screening (including Annex I habitats and Annex II fish, marine mammal and offshore ornithology species) was submitted to the relevant ETGs on 1st October 2021. The following stakeholders were consulted:
    - Natural England;
    - Royal Society for the Protection of Birds (RSPB);
    - Kent and Essex Inshore Fisheries and Conservation Authority (IFCA);
    - Essex Wildlife Trust;
    - Environment Agency;
    - Marine Management Organisation (MMO); and
    - The Wildlife Trusts.
20. A revised draft HRA screening which included updates to the offshore HRA screening based on stakeholder comments, as well as incorporating the onshore HRA screening, was submitted to the above stakeholders, as well as Essex County Council and the Essex Wildlife Trust in November 2022.
21. The draft HRA screening report was further updated in response to stakeholder comments and submitted alongside the RIAA and the PEIR for Section 42 consultation.
22. Feedback received to date relating to HRA screening is detailed in Table 3.1, along with responses from the Applicant showing how this has been addressed.
23. Further consultation relating to the shadow Appropriate Assessment and HRA compensation is detailed in the following sections of the RIAA:
    - RIAA Part 2 Benthic Ecology (Annex I habitat in SACs and SPA supporting habitation), Section 2.2.1 (Document Reference: 7.1.2);
    - RIAA Part 3 Marine Mammals (Annex II Species), Section 3.2.1 (Document Reference: 7.1.3);
    - RIAA Part 4 Offshore Ornithology (Birds Directive Annex I and Migratory Species), Section 4.2.1 (Document Reference: 7.1.4); and
    - RIAA Part 5 Onshore European and Ramsar Sites, Section 5.2.1 (Document Reference: 7.1.5).

Table 3.1 HRA screening consultation responses

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Natural England Discretionary Advice Service - North Falls Offshore Wind Farm Habitats Regulations Assessment Screening (02/12/22)			
Benthic Ecology	We note that the advice we provided in our earlier response (29 October 2021) to the North Falls Offshore HRA Screening Report has been followed, which we welcome. We have no further comments to make at this stage, but look forward to providing our comments on the wider EIA.		Noted.
Fish Ecology	We note that our earlier advice on the North Falls Offshore HRA Screening Report has been taken on board, which we welcome. We have no further comments to make at this stage, but look forward to providing our comments on the wider EIA.		Noted.
Marine Mammals	Natural England agrees with the summary of potential effects, and we note that the Applicant considered our previous advice to screen in "changes to prey availability and any disturbance to foraging at sea" during decommissioning.		Noted.
Marine Mammals	In-combination assessment should take in to consideration geophysical surveys and any potential oil and gas (O&G) surveys.		Geophysical surveys have been assessed within the in-combination assessment (Sections 3.4.3.4, 3.5.3.4, 3.6.3.4 of the RIAA Part 3 Marine Mammals (Annex II Species) (Document Reference 7.1.3). Oil and gas projects are considered in screening (discussed further in ES Appendix 12.6 Marine Mammals Cumulative Effects Assessment (Document Reference: 3.3.11). No new oil and gas activities are scheduled to overlap with the construction of North Falls.
Marine Mammals	The foraging distance of grey seals should be revised following new information from Carter *et al* (2022) which suggest that grey seal undertake foraging trips up to 448km. This information should also be used to revise the connectivity between the project area and protected sites.		Carter *et al*. (2022) has been used to update the HRA Screening (Section 7), including maps from Carter *et al* (2022) as shown in Figure 7.2.
Marine Mammals	More up to date maps are available from Carter *et al* 2020 should be used to depict global position system (GPS) tracking data for seals. We consider the approach of using telemetry data to determine connectivity is favourable compared to using a single foraging range, which is oversimplistic and does not reflect the variation in movements intra- and inter-sites. Telemetry data can also be used to determine connectivity to transboundary sites.		
Marine Mammals	We note the use of Greater North Sea OSPAR region II as a MU for grey seals. This region can be useful for screening in transboundary sites. We, however, advise the use of OSPAR AUs as presented in SCOS reports (please see SCOS 2021, Figure 4 and Figure 8). All AUs which have connectivity to the project should be considered as well as telemetry data and known foraging ranges (See Best Practice Phase III document). Thus, for grey seals, South East (SE) England and North East (NE) England AUs (or Seal MU as per SCOS 2021) should be considered.		This has been revised in Section 7.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Marine Mammals	The foraging distance of harbour seals should be revised following new information from Carter *et al* 2022 which suggest that they undertake foraging trips up to 273km. This information should also be used to revise the connectivity between the project area and protected sites.		Carter *et al* (2022) has been used to update the HRA Screening (Section 7).
Marine Mammals	We note the use of Greater North Sea OSPAR region II as a MU for harbour seal. This region can be useful for screening in transboundary sites. We, however, advise the use of OSPAR AU as presented in SCOS reports (please see SCOS 2021, Figure 4 and Figure 8). All AUs which have connectivity to the project should be considered as well as telemetry data and known foraging ranges (See Best Practice Phase III document). Thus, we advise the use of Seal MUs from SCO 2021 whereby SE England Seal MU for harbour seals should be considered.		This has been revised in Section 7.
Marine Mammals	Berwickshire and Northumberland Coast SAC for grey seal should be added to the list of screened in sites as per our previous advice due to the connectivity between the B&NNC SAC and the project site based on Vincent *et al*. (2017) and more broadly the known wide-ranging foraging habitat of grey seal in the North Sea.		The Carter *et al*. (2022) report shows no presence of grey seal associated with the Berwickshire and North Northumberland Coast SAC within the North Falls project areas (Figure 7.5), with the closest presence of any grey seal from that SAC being 28.7km from the closest point of the North Falls offshore project area, which is further than any potential effect range.
Marine Mammals	Natural England advises North Falls to revise this table [Table 7.2] in the light of new information on foraging distances of seals as per Carter *et al* 2022. B&NNC SAC for grey seal should be scoped in. We also suggest putting the UK sites at the top of the table, not at the end.		Table 7.2 has been updated as requested.
Offshore Ornithology	We can confirm the responses provided to our offshore ornithology comments on the HRA Screening have been adequately addressed and we have no further comments to make at this stage.		Noted.
Onshore SPAs and SACs	We note that North Falls has chosen an area of 10km for the desk-based study area for designated sites, and the rationale for this buffer should be provided. However, we advise that the scoping area should be based on the potential for species to be present within the area, the Impact Risk Zone (IRZ) for designated sites as available on Magic, the ecology, i.e. foraging areas of designated species of sites in proximity to the proposed development area, and consideration given to Functionally Linked Land. We repeat our earlier advice, that the onus is on the Applicant to determine whether there is sufficient information/evidence to exclude areas from the desk-based study and for surveys.		The 10km buffer used to identify sites for screening has been selected as the largest buffer from the various buffers applied when considering different potential indirect effects (see Table 9.1). The largest buffer relates to effects upon functionally linked land, and here the 10km buffer has been used based on existing literature which identifies that potential foraging ranges of up to 10km for typical geese and wader species of the east of England can commonly occur from core feeding grounds (Hearn, 2004; Gillings and Fuller, 1999). NFOW notes that SSSI Impact Risk Zones for the SSSI which underpin the European and Ramsar sites considered in the HRA Screening extend at most to 5km, so are covered by using this 10km buffer.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
			NFOW understands that this is now agreed with Natural England
Onshore SPAs	<u>Potential Effects Considered in Screening: Section 9.3, Table 9-3 - Direct temporary damage / disruption of habitats within site boundaries which support qualifying features.</u> This has not been included for the Construction, Operation or Decommissioning stages. Whilst impacts to functionally linked land habitats have been considered, suitable habitats at the site that may support the qualifying features of the SPA have not been considered. Habitats within the project area could potentially support qualifying features of the protected sites, e.g. dark-bellied brent geese (Hamford Water SPA 0.3km and Stour and Orwell Estuaries SPA 3.3km).		'Direct effects' is being used to refer to those effects which occur upon habitats within the European site boundary. As the Project's onshore project area has been routed to avoided European designations / Ramsar sites, then no direct effects under this definition can occur. Separately, potential effects upon functionally linked land habitats located outside the European site boundary but within the onshore project area up to 10km from the European site have been screened in for further assessment within the Appropriate Assessment (Table 9.3). NFOW understands that this is now agreed with Natural England
Onshore SPAs	<u>Section 9.4 Screening: Pages 172-177, Table 9-4 Onshore Ornithology - Screening Summary</u> Potential for a Direct temporary effect to habitats within the project area that support the qualifying features of the sites listed in the table (Hamford Water SPA and Ramsar, Stour and Orwell Estuaries SPA and Ramsar, Colne Estuary (Mid-Essex Coast Phase 2) SPA and Ramsar) need to be included as per the above comment.		
Onshore SPAs and SACs	We also advise that the project should fully consider cumulative impacts for the different construction scenarios with Five Estuaries e.g. concurrently, sequentially etc., as was discussed in the ETG.		NFOW agrees, and has considered the Five Estuaries project within the in-combination assessment provided in the RIAA Part 5 Onshore European Sites (Document Reference: 7.1.5).
Onshore SPAs and SACs	Water Quality and Quantity - Depending on the final red line boundary and infrastructure area it may be necessary to consider potential impacts to water tables and water quality and quantity in relation to designated sites and features within the water catchments.		NFOW agrees, and this has been considered within the screening, with such potential effects upon Hamford Water screened in for further assessment (see Table 10.3).
Natural England advice on Habitats Regulations Assessment Offshore Screening Report (29/10/21)			
Benthic Ecology	Potential effects from 'Maintenance' activities were missed off the list. However, we note that it is included in para. 66.	Add maintenance to the list of activities.	Added
Benthic Ecology	Natural England notes that site preparation works including impacts to the seabed from UXO detonation has been included.	Natural England advises that affects from site preparation works need to be thoroughly considered in the HRA as part of the construction phase	Noted, this has been included in the worst case scenario for the assessment in the RIAA Part 2 Benthic Ecology (Annex I habitat in SACs and SPA supporting habitat) (Document Reference: 7.1.2).

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Benthic Ecology	Please be advised that Natural England considers impacts over the life time of the project to be 'lasting' rather than persistent. And given the duration of the projects it is hard to justify that they are temporary.	Please see the SoS decision for Hornsea Project Three and update the screening report.	This terminology has been revised
Benthic Ecology	Natural England agrees with scoping out EMP for benthic habitats	N/A	Noted
Benthic Ecology	Natural England welcomes the use of 50km zone of impact.	N/A	Noted
Benthic Ecology	Natural England agrees with the scoping in of Margate and Long Sands SAC.	N/A	Noted
Benthic Ecology	Welcome wider ecosystem approach in relation to benthic impacts.	N/A	Noted
Fish Ecology	The table covering potential effects on fish ecology is missing INNS (invasive non-native species) and accidental pollution as potential impacts.	These potential effects should be included in the screening exercise.	These effects have been added and considered in the HRA screening (Section 6)
Fish Ecology	"Underwater noise, particularly from piling activity may have effects on fish at up to c.30km from the North Falls wind farm site, thus effects would be limited to that range."	Other projects in the vicinity have used 100km as a precautionary range for scoping sites in or out in relation to migratory fish. This HRA should follow similar principles.	A 100km study area has been added and considered in the HRA screening (Section 6).
Fish Ecology	Herring and Sandeel as key prey species for SAC / SPA species.	This advice relates to prey availability for SPA/SAC species. It is noted that in tables 6.1 and 7.1 impacts to habitats and prey are screened in. However, Natural England wishes to highlight that: Herring are known to use the greater Thames estuary as a spawning and nursery ground (Ellis *et al.,* 2012), which lies within the 100km buffer used to scope in or out sites and species as used by nearby windfarm HRAs. As herring are a hearing specialist species and are a key food species of bird species such as terns they should be considered for inclusion in the HRA scoping, specifically during construction and when considering in combination impacts. See Perrow *et al.,* 2011 which highlights a drop in	As noted by Natural England, herring and sandeel within the 100km study area are potential prey resource for marine mammals and ornithology and these effects have been screened in. The advice provided by Natural England is noted and will be considered further in the RIAA. Herring and sandeel within the study area are not a designated feature of a European site and therefore they remain screened out of the HRA under the section relating to Annex II fish species (Section 6).

Topic	Stakeholder comments	Stakeholder recommendations	Project response
		herring numbers and resulting impacts on Little Tern following Offshore windfarm construction in North Norfolk. Sandeels should also be considered for inclusion as they are a key prey species for a number of bird and cetacean species that have been scoped into the HRA and are known to use the vicinity of the offshore wind farm (OWF) for spawning and nursey areas. Their benthic habits means that populations are sensitive to local impacts such as habitat loss, habitat change, and underwater noise. They should be considered for inclusion in the HRA during construction and when assessing in combination impacts.	
Marine mammals	Natural England does not consider that “changes to prey availability and any disturbance to foraging at sea” can be screened out during the decommissioning phase. There is currently little information on the activities that will be taken as part of decommissioning and no information provided to demonstrate that this will not affect the prey and/or foraging of marine mammals.	The pathway of “changes to prey availability and any disturbance to foraging at sea” during decommissioning should be screened into the HRA.	Amended in Section 7.2
Marine mammals	As this is a standalone report, we advise that a summary of the presence of Annex II marine mammal species in the project area would be beneficial, to demonstrate why certain species have been considered and not others.	Include a summary of the presence of Annex II marine mammal species in future versions of the screening report.	Added in Section 7.3
Marine mammals	We advise that the report should include information to demonstrate the appropriateness of the Management Units (MU) screened in for seals e.g., maps of telemetry showing connectivity to the Mus outside of those that the project is located within.	Update for future versions of the HRA Screening Report.	Added in Section 7.3
Marine mammals	We advise that the report should include a figure showing the extent of the Mus being used for screening. In addition, references should be added to demonstrate where the Mus have come from.	Update for future versions of the HRA Screening Report.	Added in Section 7.3

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Marine mammals	We advise that the Wadden Sea population is not included in the reference population. Although we acknowledge the connectivity between the populations, the Wadden Sea population should be considered as part of the transboundary assessment, rather than in the core assessment.	Update for future versions of the HRA Screening Report.	Amended in Section 7.4
Marine mammals	We note that, here, the report states that the extent of the reference population for seals are certain Mus. However, this does not appear to be the same as the screening extent in Table 6.2, which is referred to as OSPAR Region II. Greater clarity is needed.	Update for future versions of the HRA Screening Report.	Amended in Section 7.4
Marine mammals	Given that the report is proposing to include the north-east England MU in their reference population for grey seals, we question why you not screened in Berwickshire and North Northumberland Coast (B&NNC) SAC for grey seal. By including the north-east MU in the reference population, the report is acknowledging that there is connectivity between the project and the MU population, in that seals in the project area could originate from either the south-east or north-east MU as these two populations act as a single large population. However, grey seals in the north-east MU are almost certainly connected to the B&NNC SAC as it is the only SAC in the MU and supports the vast majority of August hauled-out seals (SCOS, 2020). Furthermore, we consider that there is potential for connectivity between the B&NNC SAC and the project site based on Vincent *et al*. (2017) and more broadly the known wide-ranging foraging habitats of grey seal in the North Sea. We therefore advise that the grey seal feature of the B&NNC SAC is screened in to the HRA.	Future versions of the report should be updated and grey seals of the B&NNC SAC should be screened in.	Amended in Section 7.4
Marine mammals	We advise that the Humber Estuary is also a Ramsar site and, as per UK policy, should be assessed in the same way as the SAC.	Update for future versions of the HRA Screening Report.	Amended

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Marine mammals	The report states that the typical foraging ranges for grey seal is 100km, and for harbour seal 80km.	Please provide references to demonstrate that these distances are appropriate. Furthermore, we advise that telemetry data is also considered when determining the potential for connectivity between the project area and designated sites.	Added in Section 7.3
Marine mammals	Although we acknowledge that non-UK sites are outside of Natural England's remit, we note that there are several non-UK sites designated for harbour porpoise that are within the North Sea MU but have been screened out.	We advise that any updated report provide more information on the exact process for screening out harbour porpoise sites specifically, and that the relevant international Regulators are contacted for consultation on this process.	As North Falls is located within the Southern North Sea SAC, it is assumed that any harbour porpoise affected by the Project would be from this SAC and assessments for the SNS SAC are deemed as worst case scenario. Given the distance between the Project and other SACs the potential effects on harbour porpoise would likely to be less than those assessed in the SNS SAC Therefore no further SACs with harbour porpoise as a qualifying feature are screened in (Section 7)
Offshore ornithology	"The northern array boundary lies approximately 12.0nm from shore, and the southern boundary approximately 20.3nm from shore."	Please could this be consistently expressed in kilometres?	Distances are provided in km. The northern array area has been removed from the offshore project area.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Offshore ornithology	"The minimum air gap between sea surface and the rotor tip would be 22m above MHWS." This minimum 22m draught height/air gap is the minimum required for navigation purposes. Natural England have provided regulators with our advice regarding our concerns about predicted levels of cumulative collision impacts on North Sea seabirds e.g., EIA scale great black-backed gull at East Anglia 3 and Norfolk Vanguard; Flamborough and Filey Coast SPA kittiwakes at Hornsea 2 and Norfolk Vanguard; Alde-Ore Estuary SPA lesser-black-backed gulls at Norfolk Vanguard. These concerns have intensified given the three further offshore wind farm NSIPs now submitted to PINS (Norfolk Boreas, East Anglia One North, East Anglia Two) and with further projects planned to submit in the future (Hornsea 4, Dudgeon Extension, Sheringham Extension, North Falls and Five Estuaries). Therefore, Natural England considers that without major project-level mitigation being applied to all relevant projects coming forward, there is a significant risk of large-scale impacts on seabird populations.	Natural England recommends that for all relevant future projects located in the North Sea, raising turbine draught height should be considered as standard mitigation practice, and that where appropriate relevant proposals should include this measure in order to minimise their contributions to the cumulative/in-combination collision totals by as much as is possible. Therefore, we strongly advise that North Falls consider at an early stage raising the draught height of their turbines by as much as possible in order to minimise their contribution to the cumulative/in-combination collision totals by as much as is possible. We would also recommend that North Falls provide evidence/justification (e.g., engineering or technological constraints) for the draught heights they arrive at.	NFOW has now committed to increasing the draught height to 27m above MHWS (26.6m above highest astronomical tide (HAT)). An assessment of alternative solutions is provided with the DCO application which will include evidence relating to the maximum feasible draught height.
Offshore ornithology	Natural England broadly agree with the approach to screening, i.e., use of Woodward *et al.,* 2019 for screening breeding seabirds. For seabirds outside the breeding season, we agree with the use of Biologically Defined Minimum Population Scales (BDMPS; Furness, 2015), however we disagree with a 1% criterion is used for screening.	The use of a 1% criterion is contrary to the advice we provided to North Falls under DAS [discretionary advice service] earlier. Therefore, we advise again that this 1% criterion for screening is not appropriate and that LSE should be seen as a coarse filter. Moreover, if there is a potential for connectivity in the non-breeding season for birds from an SPA colony to pass through the site on migration, or that could potentially be present within the North Falls site during the non-breeding season, then these should be screened in as potential for LSE.	Screening has been revised and the 1% criterion has been removed. Qualifying features of seabird SPAs have been screened in for non-breeding season connectivity where they lie within the same non-breeding season BDMPS area as North Falls (during passage periods and/or winter), where there is considered to be a possibility that birds from the SPA might occur at North Falls.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Offshore ornithology	For migratory birds other than seabirds, SPAs within 100km of the Project are considered, which we agree is acceptable, although it is not clear what the distance of 100km is based on.	Further information is required to justify the use of the 100km range for scoping.	It is welcomed that Natural England find the 100km distance acceptable. The distance has been based on expert judgement. Further justification is provided in Section 8.4.3, and includes consideration of migratory corridors in Wright *et al*. (2012).
Offshore ornithology	We note that the approach taken was informed by the HRA screening reports for OWFs most recently submitted to The Planning Inspectorate (PINS) (e.g., East Anglia One North (Scottish Power Renewables, 2019)). Natural England provided advice to EA One North in relation to the approach for the in-combination assessment on Outer Thames Estuary SPA that will also apply to North Falls.	We advise that North Falls follows Natural England's recommended approach to assessing displacement effects on red throated diver from Outer Thames Estuary Special Protection Area. See Natural England's submission (REP1-172) to EA1N examination	North Falls has consulted Natural England over a detailed method statement for the shadow appropriate assessment of red-throated diver at the Outer Thames Estuary SPA. As a result of this consultation there has been some updating of the advice from Natural England in relation to red-throated diver at the Outer Thames estuary (although it still in essence reflects the advice provided for East Anglia ONE North). The approach taken by North Falls will follow this recommendation from Natural England.
Offshore ornithology	We note that advice on operations for Marine Protected Areas were not considered necessary for screening. However, we advise that Advice on Operations (AoO) would also have been useful to inform screening, as this would help inform any potential for an impact pathway to a Qualifying feature	We note that Advice on Operations will be referred to as required for appropriate assessment, and advise that these are fully considered.	Noted the Advice on Operations will be considered within the RIAA.
Offshore ornithology	Direct Impacts: Disturbance/displacement/barrier effect due to presence of turbines and other infrastructure – construction not considered	In our earlier comments on the information provided to Natural England ahead of the July ETG meeting, we advised that: "The construction phase presents a range of potential drivers that may cause displacement of seabirds. This includes vessel movement and construction activities (which may be both spatially and temporally limited), however the physical presence of the constructed turbines is also likely to cause a displacement response. As the construction phase progresses, more turbines are built and the spatial scale increases, until a point when the entire array is constructed, yet not operational,	The shadow appropriate assessment for construction displacement will follow this advice of Natural England.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
		and may present the same displacement stimulus as an operational farm. Therefore, it should not be asserted that displacement will only occur where vessels and construction activities are present; instead, we consider that displacement is likely to occur within and around the constructed array area (due to the presence of turbines) and where construction activities are ongoing. This will represent an increasing spatial impact as construction progresses. For assessment of construction phase displacement, we advise North Falls consider the pragmatic method employed at Dogger Bank Creyke Beck A&B and Teesside A&B (section 4.3.5.1. in Appendix A to Chapter 11 in Dogger Bank Creyke Beck A&B) of calculating operational displacement per species and reducing by 50% during the construction period (to broadly reflect reduced spatial and temporal scale) across the range of displacement mortality advised by Natural England for a particular species. We recommend this approach is taken for construction displacement assessments for red-throated diver, gannet, and auks."	
Offshore ornithology	"Population estimates are design-based estimates calculated as described in HiDef (2020, 2021)."	Note the concerns we have raised regarding the survey design and levels of coverage and its appropriateness to characterise the baseline. Please refer to our latest comments on the response to the aerial survey.	Survey coverage has been increased to 15% in all monthly surveys.
Offshore ornithology	We welcome that the analysis of partially identified records will be undertaken with the final baseline data set.	N/A	Noted. The population estimates presented for seabirds in this report are subject to apportionment of partially identified records to species.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Offshore ornithology	The process described in this section is the Natural England advised approach for apportionment of impacts (e.g., CRM) to SPAs in the non-breeding season, after the screening stage. However, it is not generally carried out at the screening stage, instead this approach is undertaken in stage 2 for those sites where Likely Significant Effect (LSE) cannot be ruled out.	LSE should be seen as a coarse filter and, therefore, if there is the potential for connectivity in the non-breeding season since birds may pass through the site on migration, or could potentially be present during the non-breeding season, then this should be screened in as potential for LSE.	(As noted above) screening has been revised and the 1% criterion has been removed (Table 8.4). Qualifying features of seabird colony SPAs have been screened in for non-breeding season connectivity where they lie within the same non-breeding season BDMPS area as North Falls (during passage periods and/or winter), where there is considered to be a possibility that birds from the SPA might occur at North Falls.
Offshore ornithology	We have already advised that we do not agree with this approach. The use of 1% of SPA population breeding adults predicted to occur within the North Falls site is not an appropriate approach for screening sites for LSE. Please note that for Vanguard OWF application, Deadline 2, we advised on their HRA screening and integrity matrices that the Applicant should screen in/consider SPAs where there is an impact pathway in the non-breeding season (even if there is no impact pathway in the breeding season). Given the potential for all three auks to winter in the North Sea, this would therefore include consideration of the Farne Islands SPA (guillemot and the seabird assemblage feature, which Includes razorbill and puffin) and Coquet Island SPA (seabird assemblage feature, which includes puffin). The same should apply here.		
Offshore ornithology	Natural England agree that 100km appears a reasonable and pragmatic cut off point, however we are not aware of anything specific regarding migrant non seabird and distances for screening at other sites.	N/A	Noted. It is welcomed that Natural England find the 100km distance acceptable.
Offshore ornithology	Outer Thames Estuary – Common Tern, breeding – Screened Out	No consideration has been given to any possible connectivity of the tern features on migration. This should be considered in an updated report.	The screening has been revised and this feature has been screened in for possible connectivity on migration (Table 8.4).

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Offshore ornithology	Alde-Ore Estuary SPA and Ramsar Site – Sandwich Tern, breeding – Screened In	We agree that sandwich tern should be screened in based on the overlap of foraging range for breeding season. However, we disagree with the approach for the non-breeding season, as there is a need to consider whether there is potential for birds on migration from the site passing the North Falls site. If this is the case, then LSE cannot be ruled out for the non-breeding season as well.	The screening has been revised and this feature has been screened in for possible connectivity on migration (Table 8.4).
Offshore ornithology	A number of SPAs where breeding common tern, Sandwich tern and little tern are a feature have been screened out. We would question whether there is the possibility of connectivity with the OWF and birds on migration from the site.	Consideration should be given to the possibility of connectivity with the OWF and birds on migration for SPAs where breeding little tern are a feature	The screening has been reviewed and additional SPAs have been screened in for possible connectivity on migration (Table 8.4).
Offshore ornithology	Greater Wash SPA – Common tern, breeding – Screened Out	Greater Wash SPA is designated for foraging areas of the tern features of the site and these actually nest at other coastal colonies. Therefore, applying foraging range from North Falls to the Greater Wash here is not appropriate. However, as the North Falls site is not located within or adjacent to the Greater Wash SPA, we agree that it is acceptable for screening out in breeding season. Please also note that there is a need to include the tern colonies that the birds foraging in Greater Wash come from, in this screening and apply foraging range to those. Following on from this, if there is no overlap with North Falls then it is appropriate for screening out in breeding season. Please also note our comments above on the inappropriateness of the use of 1% criterion for screening in non-breeding season. In addition, there is the need to consider whether birds on passage from the site may pass through the North Falls site and if there is potential	According to the SPA Departmental brief (Natural England and JNCC 2016), the Greater Wash SPA protects foraging areas for breeding common terns at the North Norfolk SPA and Breydon Water SPA, where the species is also a qualifying feature. Common tern has been screened in for LSE at both these breeding colony SPAs for potential connectivity outside the breeding season (Table 8.4). (As noted above) screening has been revised and the 1% criterion has been removed.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
		connectivity. Hence, in this case LSE could not be ruled out.	
Offshore ornithology	There are a large number of SPA features that have been screened in for non-seabird migrants. Whilst we note the criteria used to screen in a site is within 100km, it is worth considering whether Wright *et al*. (2012) indicates that the North Falls site sits within the migration front. This would help determine if there is potential connectivity with impact pathway, and ensure the relevant features are screened in.	For the non-seabird migrant features on SPAs within 100km of North Falls, it is recommended that consideration is given to Wright *et al* (2012) to determine if North Falls sits with the migration front.	The screening for non-seabird migrants has been checked against migratory corridors in Wright *et al*. 2012. See Section 8.4.3.
RSPB comments on the North Falls HRA Offshore Screening Report (20/10/21)			
Offshore ornithology	Please correct: (sea)birds are not Annex II species under the EU Habitats and Species Directive. Their protection derives from the EU Birds Directive. The correct reference would be to: "Annex I or regularly occurring migratory seabirds", as per your para 33 below		Corrected.
Offshore ornithology	The RSPB would be seeking to increase this height, with an agreement to do so early on in the Evidence Plan process.		NFOW has now committed to increasing the draught height to 27m above MHWS, 26.6m above HAT.
Offshore ornithology	Please check for colony specific data, and include 1 standard deviation around mean max (given in Woodward *et al*)		The screening has been revised and mean maximum foraging range plus 1 standard deviation (SD) has been used to identify breeding season connectivity with North Falls for qualifying species of breeding seabird SPAs. Colony-specific data will be considered as appropriate for species screened in for appropriate assessment.
Offshore ornithology	Not necessarily the best approach if there is a body of land in the way. We acknowledge it may be more precautionary though.		Noted. The straight-line approach was taken on a pragmatic basis.
Offshore ornithology	We recommend that you check whether there is available data from local colonies to see if it would modify these e.g. given that using a 1983 reference for some species whose phenology may have changed since then due to climate warming.		While the point is agreed in principle, the 1983 reference has been used for three species only: black-headed gull, common gull and little gull; and no SPAs for any of these species have been screened in for appropriate assessment.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Offshore ornithology	Many species show activity peaks early or late and these will be missed by aerial surveys. Please provide details of survey timings.		While the point is acknowledged, timings for digital aerial surveys are constrained by logistics such as distance from airfields and length of transect lines to be flown.
Offshore ornithology	Red throated diver will be displaced at a greater distance than this, so this needs to be considered		For the HRA in relation to the Outer Thames Estuary SPA, the appropriate assessment considers displacement of red-throated diver to 12km from North Falls, where the 12km buffer of North Falls overlaps with the SPA. The aerial survey boundary was extended in January and February 2021 to include a 12km buffer to the north and west of the North Falls array areas. These baseline data plus data from the 2018 survey of the Outer Thames Estuary SPA have been used to model red-throated diver abundance in areas where the 12km buffer overlaps with the SPA.
Offshore ornithology	Please check for colony specific data in addition to Woodward *et al* 2019. This should be with +1SD and that approach should be applied to Table 7.5 and then, explicitly, to Table 7.6 which appears to focus on mean maximum only.		Mean maximum foraging range plus 1SD has been used to identify breeding season connectivity with North Falls for qualifying species of breeding seabird SPAs. Colony-specific data has been considered, as appropriate, for species screened in for appropriate assessment.
Offshore ornithology	Please confirm that, in addition to the formal SPA citations and Standard Data Forms, you have considered the implications of the recommendations in the various UK SPA Reviews in respect of qualifying features, in particular the 2001 and 2016 UK SPA Reviews.		Screening has taken account of qualifying features for which SPAs are currently designated and formally proposed.
Offshore ornithology	Please check against +1SD as per our comment above. This is the first reference to mean max foraging range, hence we have made it here. This comment applies to any species scoped out on the basis of mean maximum foraging range when it should be mean maximum foraging range +1SD.		The screening has been revised and mean maximum foraging range plus 1SD has been used to identify breeding season connectivity with North Falls for qualifying species of breeding seabird SPAs.
Offshore ornithology	See earlier comment on +1SD. Also, please provide further information on why you consider other colonies are the most likely source.		Sandwich tern as a qualifying feature of Foulness SPA has been screened in for LSE.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
The Wildlife Trusts response to the North Falls Offshore Wind Farm HRA Offshore Screening Report (29/10/21)			
Benthic Ecology	We urge RWE to progress the MCZ [Marine Conservation Zone] screening as soon as possible, alongside a full exploration of alternatives. The North Falls OWF array area of search overlaps with Kentish Knock East MCZ, where two of the three designated features are already in unfavourable condition (subtidal coarse sediment and subtidal mixed sediments). Discussions on how to avoid this site are needed and adequate time must be allowed for these discussions to take place before the application is entered to the Planning Inspectorate. Avoidance is an essential part of the mitigation hierarchy and proposals must demonstrate that the hierarchy has been followed e.g. Section 126 of the Marine and Coastal Access Act 2009, Policy SE-MPA-1 Marine protected areas of the South East Marine Plan.		MCZ Screening has been consulted on separately and is provided with the MCZ Assessment (Document Reference: 7.3).
Benthic Ecology	The report states that “cables, cable protection and scour protection may be left in situ” instead of being decommissioned. These should not be left as a matter of course; at the end of the wind farm’s life, surveys should be conducted to assess the quality of the communities established and a decision on their removal made in conjunction with the statutory authorities. Developers in the marine environment have a legal requirement to remove cable protected through: • Requirements to decommission under UNCLOS 1982. • Requirements to decommission under the Energy Act 2004. • OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations states that the leaving wholly or partly in place of disused offshore installations within the maritime area is prohibited. • Objectives of the South East and East Marine Plans. • Objectives of the Defra 25 year Environmental Plan for a recovered marine environment.		The report also states the following which is in keeping with the Wildlife Trust’s comment: “*The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator*.” A realistic worst case scenario has been assessed based on information at this time.
All	It would be helpful for the project to also consider statements made by BEIS in the recently published Energy White Paper (December 2020)1 regarding site selection and the assessment of alternatives given the proximity of the project to the proposed Five Estuaries Offshore Wind Farm. We would welcome further information on RWE’s involvement in any Early Opportunities discussions as part of the Offshore Transmission Network Review (OTNR) on coordination of cabling infrastructure with other developers.		The offshore and onshore project areas have been selected taking into consideration relevant consultation feedback, environmental impacts and engineering constraints, discussed further in ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference 3.1.6) and in the HRA Derogation Provision of Evidence (Document Reference 7.2).

Topic	Stakeholder comments	Stakeholder recommendations	Project response
All	We are disappointed that fishing has been considered as part of the baseline and has not been included in the in-combination assessment. Fishing is a licensable activity that has the potential to have an adverse impact on the marine environment. This is supported in the leading case C-127/02 Waddenzee [2004] ECR I-7405, the CJEU held at para. 6. "The act that the activity has been carried on periodically for several years on the site concerned and that a licence has to be obtained for it every year, each new issuance of which requires an assessment both of the possibility of carrying on that activity and the site where it may be carried on, does not itself constitute an obstacle to considering it, at the time of each application, as a distinct plan or project within the meaning of the Habitats Directive". This case law demonstrates that fishing is considered a plan or a project and therefore, not part of the baseline.		The approach proposed in the North Falls HRA screening is consistent with that of numerous offshore wind farms that have been consented since the Waddenzee 2004 case (e.g. most recently, Norfolk Vanguard, Norfolk Boreas, Hornsea Three, East Anglia ONE North and East Anglia TWO). Commercial fisheries are a long-standing pressure on the environment which is a factor in the baseline conditions for marine Annex I habitats and Annex II species.
Marine Mammals	Following the same logic applied to the Outer Thames Estuary SPA, will the potential pathway of effects on benthic ecology impact on food source for harbour porpoise, which are a designated feature of the Southern North Sea SAC (also overlapping), be considered?		Reference has been added to consideration of associated habitats (RIAA Part 3 Marine Mammals (Annex II Species) Document Reference: 7.1.3) as requested by The Wildlife Trust in the comment below. However it should be noted that no habitat mapping of the Southern North Sea SAC is available from the statutory nature conservation body to enable a quantified assessment.
Benthic Ecology	TWT agree that Likely Significant Effect (LSE) on Margate and Long Sands SAC cannot be ruled out at this stage.		Noted
Benthic Ecology	The potential for direct/indirect impacts from the placement of rock protection adjacent to the SAC boundary and potential movement of the rock into the SAC should also be considered further at this stage. The Southern North Sea is a dynamic sediment environment and the movement of rock protection within this region has been known to occur.		Cable and scour protection will be engineered to remain in place in order to fulfil its function of protecting the cables and foundations, and therefore movement of rock into the SAC / other impacts from the placement of rock has not been screened in.
Marine Mammals	The HRA should consider "changes to prey availability and associated habitats, and any disturbance to foraging at sea" to marine mammal features. TWT are not comfortable with "barrier effects due to the physical presence of offshore infrastructure" being screened out at this stage.		Reference has been added to associated habitats (Section RIAA Part 3 Marine Mammals (Annex II Species) Document Reference: 7.1.3). Marine mammals are highly mobile species which are able to navigate around fixed structures and therefore the presence of structures causing a barrier effect is screened out. However, the potential for disturbance, as a result of noise from the Project, causing a barrier effect has been screened in.

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Summary	The meaning of this sentence needs to be made clearer in order to ensure consistency with the other receptors. Is this a list of marine mammal sites where LSE could not be ruled out?		Amended (Section 11.1.3)
Natural England's further response to North Falls Offshore Windfarm HRA Onshore Screening Report (10/02/23)			
Onshore SPAs	*[Response to NFOW comments]* We are content with the sites that have been scoped into the assessment, however, we advise that the Project should be mindful of the IRZs, foraging areas of designated species, and FLL on a site-by-site basis.		Sites screened in are detailed in HRA Screening Report.
Onshore SPAs	*Response to NFOW comments]* We are content with the information and explanation provided. We are, therefore, content with the proposed screening for direct temporary damage/disruption of habitats within site boundaries which support qualifying features.		Effects screened in are detailed in HRA Screening Report.
Natural England PEIR Statutory Consultation (14/07/23)			
Onshore SPAs and SACs	We agree with the onshore Special Area of Conservation (SAC) site screened in to the HRA in relation to onshore ecology.		Noted
Onshore SPAs and SACs	We note the avoidance of land within designated site boundaries, although we note that the onshore project area is in close proximity to Hamford Water SAC, SPA/Ramsar site (300m at closest point). Consideration will therefore be required of impacts on Annex I birds that are utilising functionally linked land surrounding the SPA. As advised for all OWF Nationally Significant Infrastructure Projects (NSIPs) two years of data is required to support Applications to take account of interannual variation.		Impacts on SPAs, SACs and Ramsar sites are fully considered as part of this HRA screening and the RIAA. Two years of data for birds using functionally-linked land has been gathered and is reported in ES Appendices (all Volume 3.3): • 24.1 Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys Report (Document Reference 3.3.40); • 24.3 Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys Report (Document Reference 3.3.42); • 24.5 Onshore Cable Route: Non-breeding Bird Surveys 2021/22 Report (Document Reference 3.3.44); • 24.6 Onshore Cable Route: Non-breeding Bird Surveys 2022/23 Report (Document Reference 3.3.45).

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Onshore SPAs	We note that the potential effects considered do not appear to include cable protection in the intertidal area. The offshore considerations go up to MLWS. If the Holland Haven Marshes SSSI is functionally linked to Hamford Water SPA/Ramsar, then the intertidal area has the potential to provide a feeding resource, so potential hard structures and working in that area should be considered. We advise that the potential for intertidal working (including any additional compound) and placement of rock changing the habitat conditions should be included in the screening process.		Impacts on SPAs and Ramsar sites are fully considered as part of this HRA screening and the RIAA. Works and inclusion of structures in the intertidal area are not proposed. Further details on the project description are provided in the RIAA.
Onshore SPAs	Reference is included to Chapter 24- Onshore Ornithology and that embedded mitigation for onshore ornithology includes that monitoring will be carried out to 'ensure' no significant disturbance to overwintering birds. We note that no reference is included to avoiding (where possible) work in land identified as potentially important to Hamford Water SPA features during key periods of the non-breeding season or keeping hedgerows etc. for visual screening (Chapter 24, para 249-251). We note that this mitigation could conflict with embedded mitigation around not removing vegetation, which relates to ground nesting birds, in the nesting season. We advise that any mitigation included in the chapters, should be included in the HRA where it relates to impacts on designated sites. This includes the mitigation included in chapter 24. We advise that consideration is given to functional links to Hamford Water SPA.		Impacts on SPAs and Ramsar sites are fully considered as part of this HRA screening and the RIAA. Embedded mitigation relating to the project is described in the RIAA.
Onshore SPAs and SACs	We agree with the methodology that has been used to assess potential impact pathways to international notified features e.g. wintering and breeding birds, and Fishers Estuarine Moth as a feature of Hamford Water SAC.		Noted.
Benthic & Intertidal Ecology	Natural England has no comments to make on the screening.		Noted
Marine Mammals	When assessing connectivity, the maximum rather than the average foraging range should be considered, thus Natural England recommends that the list of screened in European sites is revised to account for this.	An updated screening report should revise the list of European sites based on the maximum foraging ranges.	The screening has been updated based on maximum foraging ranges.
Marine Mammals	We note that NE England SMU for grey seals is no longer included within the assessment population of grey seals. This is inconsistent with the PEIR document where this SMU is included in the assessment. We advise consistency in the approach.	Apply the consistent approach for grey seal SMUs and provide a clear justification for the approach chosen for the assessment in both assessments.	The North East (NE) England Management Unit (MU) is no longer included in the RIAA as evidence from Carter *et al*. (2022) shows there is no connectivity of grey seal from the relevant SAC from this MU, the Berwickshire and North Northumberland Coast SAC. In the PEIR chapter (now ES Chapter 12 Marine Mammals, Document Reference 3.1.14), the South East (SE) MU is used as the reference population, however the assessments are also put into context of the wider

Topic	Stakeholder comments	Stakeholder recommendations	Project response
			reference population which includes the NE and SE MUs.
Marine Mammals	As in the PEIR, there is a discrepancy in the indicated soft start duration. Natural England recommends that soft start and ramp up are clearly defined and the same terms/durations are used across the documents. It would be beneficial to state which best practice documents and procedures will be implemented to reduce the collision risk.	Clarification and consistency are needed in relation to soft start and ramp up duration and methods used. Provide reference to relevant best practice documents.	Soft start and ramp up durations have been reviewed and consistent approach used throughout the shadow Appropriate Assessment. References to relevant best practice documents have been made throughout the RIAA Part 3 Marine Mammals (Annex II Species) (Document Reference 7.1.3.) including: • Natural England Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards (Phase III and IV) (Parker *et al*. 2022a and Parker *et al*. 2022b); • JNCC guidelines for minimising the risk of injury to marine mammals from using explosives (JNCC, 2010a); and • Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise (JNCC, 2010b).
Marine Management Organisation consultation on PEIR (14/07/2023) – Habitat Regulations Assessment			
All	The MMO defers to the statuary advice provided by the relevant Statutory Nature Conservation Body's regarding the potential impacts to the protected features of the identified nature conservation areas that may occur because of the North Falls OWF.		Noted
All	The summary of potential effects screened into Table 6-1 of (document reviewed in point 7i) of the HRA for fish ecology during the construction, operation and decommissioning phases is appropriate.		
All	The nearest SACs which have Annex II fish as qualifying features are outside the scope of the study area. I am therefore content that qualifying migratory fishes have been screened out but defer to Natural England as the Statutory Nature Conservation Body (SNCB) for further comment.		
All	The MMO will maintain a watching brief on anything that may fall within the MMO's remint – such as DML conditions.		

Topic	Stakeholder comments	Stakeholder recommendations	Project response
Frinton and Walton Town Council PEIR Consultation Response (13/06/23)			
Onshore SPAs	The Government has made a tentative submission for all wetland sites on the east coast, the application was submitted in July 22 by the RSPB, WWT [Wetlands Wildlife Trust] and NT [National Trust], to UNESCO for consideration as a World Heritage Site. The Hamford Backwaters are considered to be the 2nd most important site in Europe for over wintering birds. It is well known that pylons and overhead cables are not compatible with migrating birds.		Main migratory locations are designated sites and are fully assessed in this HRA screening and RIAA. Overhead cables are not being proposed as part of the project design.
Tendring District Council (Places Services) response to North Falls Offshore Windfarm HRA Onshore Screening Report (15/11/23)			
Onshore SPAs and SACs	If any of the SSSI features which underpin the qualifying features of European sites were identified as potentially subject to effects during construction or operation of the project, and therefore potentially giving rise to LSE upon the qualifying features, this will need to be taken into account during the HRA screening.		Features which support European sites have been considered in both this HRA screening and in the RIAA.

4 Stage 1 - Screening methodology

24. The types of effects associated with a wind farm development's infrastructure will vary in their magnitude and significance, depending on a range of factors including the type of technology and process involved and the location and timing of activity. In respect of designated habitats and species populations, these effects may be direct (e.g. habitat loss associated with infrastructure installation) or indirect (e.g. via changes in water quality).

25. Screening is based on a conceptual 'source-pathway-receptor' approach:

    - Source:
        - The origin of an effect (noting that one source may have several pathways and receptors).
        - Example: cable installation.
    - Pathway:
        - The means by which the effect of the activity could impact a receptor.
        - Example: noise from cable installation.
    - Receptor:
        - The element of the receiving environment that is impacted.
        - Example: SAC Annex II species within range of the noise disturbance.

26. This approach identifies likely significant effects resulting from the proposed construction, operation and maintenance, and decommissioning of the Project.

27. Where there is no pathway, or the pathway has sufficient distance such that the effect from the source has dissipated to a negligible level before reaching the receptor, there may be justification for the screening out of that particular receptor (i.e. feature) for the site in question.

28. Note that sites are screened in if, for any one of their qualifying features (i.e. a species or habitat), a source-pathway-receptor relationship and potential for LSE cannot be ruled out (including in-combination effects). However, each qualifying feature of that site will be considered separately, and it may be that the screening process rules out LSE for some features at this stage.

29. As described above, mitigation is not taken into account at Stage 1, but will be considered where relevant in the Stage 2 assessment.

30. The approach to screening for each receptor is outlined in Sections 5 and 10 and is based on the known distribution, ecology and sensitivities of each receptor group and therefore the potential for being affected by the Project.

31. Where there is insufficient information available at this stage to screen out a site, the site is screened in for further consideration.

4.1 In-combination screening methodology

32. The Habitats Regulations require that an assessment of the likely significant effects of a project on European sites are considered both alone and in-combination with other plans or projects.

33. Offshore plans or projects that may be considered include (but are not limited to):

- Other offshore windfarms;
- Other renewables developments;
- Mariculture;
- Aggregate extraction and dredging;
- Licenced disposal sites;
- Shipping and navigation;
- Planned construction of sub-sea cables and pipelines;
- Potential port/harbour development;
- Oil and gas development and operation, including seismic surveys; and
- UXO clearance.

34. Onshore plans or projects that may be considered include other applications submitted under the Planning Act 2008 or other planning regimes, and include (but are not limited to):

- Infrastructure developments (such as other utilities (including energy generation and transmission and water storage, abstraction, processing and infrastructure) and transport);
- Housing developments;
- Industrial and light industrial developments;
- Extraction developments; and
- Waste management facilities.

35. The assessment will present relevant in-combination effects of projects using the tiered approach as devised by Natural England (Natural England and Defra, 2022) and presented in Table 4.1.

Table 4.1 Tiered approach (Natural England and Defra, 2022)

Tier	Consenting or construction phase	Data availability
Tier 1	Built and operational projects should be included within the cumulative assessment where they have not been included within the environmental characterisation survey, i.e. they were not operational when baseline surveys were undertaken, and/or any residual impact may not have yet fed through to and been captured in estimates of "baseline" conditions e.g. background distribution or mortality rate for birds.	Pre-construction (and possibly post-construction) survey data from the built project(s) and environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project).
Tier 2	Tier 1 + projects under construction	As Tier 1 but not including post construction survey data
Tier 3	Tier 2 + projects that have been consented (but construction has not yet commenced)	Environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project) and possibly pre-construction

Tier	Consenting or construction phase	Data availability
Tier 4	Tier 3 + projects that have an application submitted to the appropriate regulatory body that have not yet been determined	Environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project)
Tier 5	Tier 4 + projects that have produced a PEIR and have characterisation data within the public domain.	Environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project) as well as information provided within the PEIR.
Tier 6	Tier 5 + projects that the regulatory body are expecting an application to be submitted for determination (e.g. projects listed under the PINS programme of projects), including projects where a Preliminary Environmental Information Report (PEIR) has been undertaken and submitted	Possibly environmental characterisation survey data (but strong likelihood that this data will not be publicly available at this stage.
Tier 7	Tier 6 + projects that have been identified in relevant strategic plans or programmes (e.g. projects identified in Round 3 wind farm ZAP documents)	Historic survey data collected for other purposes/by other projects or industries or at a strategic level.

36. Projects classified under Tiers 1-4 are included in the HRA screening. Tier 5 (including, for example projects that have submitted a detailed PEIR as part of their section 42 consultation) and Tier 6 and 7 projects will be considered to the extent that the available data allows.

5 Offshore SACs – Annex I habitats

5.1 Approach to screening

37. Direct or indirect effects on European sites in the southern North Sea which have benthic habitats (Habitats Directive Annex I) as a qualifying feature have been considered for HRA screening. LSE may arise from the permanent or temporary physical presence of infrastructure and/or activities relating to the construction, operation, maintenance or decommissioning of North Falls.

38. This HRA screening exercise considers sites which meet the following criteria:

- A component of the proposed project directly overlaps a site whose qualifying features include a habitat; and / or
- The distance between the proposed project and the offshore habitat qualifying feature is within the range for which there could be an interaction (i.e. within a zone of influence (ZOI) for a physical process change resulting from North Falls).

5.2 Effects considered in screening

39. Within the North Falls offshore project area, construction activities such as the installation of foundations, cables and ancillary structures, associated seabed preparation works, and the placement of jack-up vessel legs, would cause direct physical disturbance and indirect disturbance through the elevation of suspended sediment.

40. Operation of North Falls would create lasting effects (i.e. for the lifespan of the proposed project) or permanent effects (i.e. where infrastructure is not removed during decommissioning), through the loss of existing habitat and introduction of new substrate, such as rock or concrete mattresses used as cable and foundation scour protection as well as the foundation structures themselves.

41. Other temporary effects identified during operation will be caused by maintenance activities such as the use of jack up vessels and the replacement and repair of any cables.

42. Decommissioning effects will be primarily caused by the removal of structures from the seabed. Decommissioning would be expected to cause similar effects to that identified during construction.

43. LSE on offshore habitats from North Falls have been identified as shown in Table 5.1. These are aligned with the North Falls Scoping Report, with the exception that, while some benthic species may react to electromagnetic fields (EMFs) from cables and episodic noise such as that from pile driving of foundations, Annex I habitats, for which European sites are designated, are not known to have any EMF or noise sensitivity. These include:

    - Sandbanks which are slightly covered by sea water all the time;
    - Estuaries;
    - Mudflats and sandflats not covered by seawater at low tide;
    - Coastal lagoons;
    - Reefs;
    - Large shallow inlets and bays;
    - Submarine structures made by leaking gases; and
    - Submerged or partially submerged sea caves.

44. As a result, effects of EMFs and underwater noise are screened out of the HRA in relation to Annex I habitats.

Table 5.1 Summary of potential effects on Annex I habitats considered in HRA Screening (screened in (✓) and screened out (✖))

Potential effect	Construction	Operation	Decommissioning
Lasting habitat loss	✖ (considered under operation)	✓	✖ (considered under operation)
Temporary physical disturbance	✓	✓	✓
Increased suspended sediment concentrations	✓	✓	✓
Smothering due to increased suspended sediment	✓	✓	✓

Potential effect	Construction	Operation	Decommissioning
Re-mobilisation of contaminated sediments	✓	✓	✓
Interactions of EMF	×	×	×
Underwater noise and vibration	×	×	×
Colonisation of introduced substrate, including non-native species	× Assessed under operation	✓	× Assessed under operation

5.2.1 In-combination effects

45. In-combination effects will consider in-direct effects in conjunction with changes in physical processes based on the results of the physical processes assessment of other plans and projects. It is anticipated that the impacts will be localised, however as above, a highly conservative 50km search area has been used to identify plans and projects for consideration in the HRA.

46. Other projects within the 50km search area, include:

- Five Estuaries;
- East Anglia TWO;
- Greater Gabbard OWF maintenance activities;
- Galloper OWF maintenance activities;
- Thanet OWF;
- Gunfleet Sands OWF;
- London Array OWF;
- NeuConnect interconnector;
- Sealink interconnector;
- Nautilus interconnector;
- Tarchon Energy interconnector; and
- Aggregate areas.

47. Existing activities, such as commercial fisheries and operation of existing OWFs are considered to be a component of the baseline conditions and are therefore not considered in the in-combination assessment.

48. For the purpose of the screening assessment, the conclusions discussed below apply to the ‘project alone’ and the in-combination effects with other plans and projects.

5.3 Identification of sites and features

49. The potential for LSE would be dependent on the characteristics of the habitats and communities (receptors) present within the footprint of the effect and, in particular, the capacity of the affected communities to recover from those effects identified.

50. Based on evidence from other OWF EIAs, the range of indirect effects such as sediment plume dispersal is likely to be limited to a few kilometres from the source. In order to provide a highly conservative screening process, with consideration of potential in-combination interactions, European sites within 50km of the North Falls offshore project area are considered.

5.4 Screening

51. Table 5.2 provides the list of European sites within the 50km search area which have benthic (Annex I) features as a primary or secondary reason for designation. In summary, it is proposed that all sites are screened out with the exception of the Margate and Long Sands SAC, which is located adjacent to the cable corridor.

52. In addition, the RIAA includes consideration of effects on the supporting habitats for ornithology where appropriate. The Outer Thames Estuary SPA overlaps the North Falls offshore cable corridor and so the potential pathway of effects on benthic ecology to impact upon red-throated divers, which are a designated feature of the SPA is considered.

Table 5.2 European sites with benthic features – Screening summary

Site Code	Country	Designation name	Qualifying feature	Distance to array area(km)	Distance to offshore cable corridor (km)	Screened in/out	Rationale
UK0030076	UK	Alde, Ore and Butley Estuaries SAC	H1130 Estuaries; H1140 Mudflats and sandflats not covered by seawater at low tide	39.0	13.8	Out	Beyond the range of potential impact
UK0013690	UK	Essex Estuaries SAC	H1130 Estuaries; H1140 Mudflats and sandflats not covered by seawater at low tide; H1110 Sandbanks which are slightly covered by sea water all the time; H1310 Salicornia and other annuals colonising mud and sand; H1320 Spartina swards (*Spartinion maritimae*); H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); H1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	51.4	9.2	Out	Beyond the range of potential impact
UK0013107	UK	Thanet Coast SAC	H1110 Sandbanks which are slightly covered by sea water all the time; 1140 Mudflats and sandflats not covered by seawater at low tide; H1170 Reefs	38.3	45.4	Out	Beyond the range of potential impact
UK0030371	UK	Margate and Long Sands SAC	H1110 Sandbanks which are slightly covered by sea water all the time	10.9	0	In	Adjacent to offshore cable corridor
UK0014780	UK	Orfordness – Shingle Street SAC	H1150 Coastal lagoons; H1210 Annual vegetation of drift lines; H1220 Perennial vegetation of stony banks	39.0	13.8	Out	Beyond the range of potential impact

Site Code	Country	Designation name	Qualifying feature	Distance to array area(km)	Distance to offshore cable corridor (km)	Screened in/out	Rationale
BEMNZ0001	Belgium	Vlaamse Banken SAC	H1170 Reefs; H1110 Sandbanks which are slightly covered by sea water all the time	34.0	45.5	Out	Beyond the range of potential impact
FR3102002	France	Bancs Des Flandres SAC	H1110 Sandbanks which are slightly covered by sea water all the time	37.1	51.5	Out	Beyond the range of potential impact

53. It has not been possible to rule out LSE on the Margate and Long Sands SAC during screening, therefore information to inform Appropriate Assessment will be required for this site. Site specific benthic survey and consultation with statutory stakeholders, including Natural England have been undertaken to inform this process.

54. The Margate and Long Sands SAC contains a number of Annex I sandbanks composed of well sorted sandy sediments, with muddier and more gravelly sediments in the troughs between banks. The system is dynamic with higher species diversity in the troughs than on the bank crests. Reef-forming ross worm *Sabellaria spinulosa* is present but available data from the JNCC[2] indicate the distribution of *S. spinulosa* is patchy or that the aggregations form crusts rather than reefs.

55. The Margate and Long Sands SAC is located adjacent to the offshore cable corridor at its closest point, and therefore there is potential for its designated features, “Sandbanks which are slightly covered by sea water all the time”, to be impacted during construction, operation and maintenance or decommissioning of North Falls.

56. As there is no overlap between the offshore project area and the SAC, there is no pathway for direct effects to occur. The following indirect effects during construction, operation and maintenance and decommissioning are considered in the RIAA:

- Increased suspended sediment concentrations;
- Smothering due to increased suspended sediment; and
- Re-mobilisation of contaminated sediments.

6 Offshore SACs – Annex II fish species

6.1 Approach to screening

57. Direct or indirect effects on Annex II migratory fish species have been considered for HRA screening. Effects may arise from the permanent or temporary physical presence of infrastructure and/or activities relating to the construction, operation, maintenance or decommissioning of North Falls.

58. This HRA screening exercise considers sites which meet the following criteria:

- The offshore development area directly overlaps a site whose qualifying features include an Annex II migratory fish species;
- The distance between the offshore development area and a site with a fish qualifying feature is within the range for which there could be an interaction e.g. the distance of the site from the source of suspended sediment from the offshore development area is within the range at which sediment deposition could occur; and

[2] Margate and Long Sands - Special Areas of Conservation (jncc.gov.uk)

- The distance between the offshore development area and resources on which the qualifying feature depends (i.e. an indirect effect via prey or access to habitat) is within the range for which there could be an interaction; and
- The likelihood that a foraging area or a migratory route occurs within the offshore development area.

6.2 Effects considered in screening

59. During construction of North Falls, activities which result in disturbance to the seabed and the generation of suspended sediment have the potential to disturb and displace fish from supporting habitats or migratory routes. Underwater noise generated by construction activities, such as piling, also has the potential to displace fish from supporting habitats or migratory routes by acting as a barrier.

60. During the operational period, the physical presence of turbine foundations and associated components (offshore platforms, offshore export cables, array/ platform interconnector cables) will result in the loss or change of existing habitats. Maintenance activities during the operational phase may also result in localised disturbance or displacement.

61. Decommissioning would require the removal of foundation structures and either the cutting or removal of subsea cables resulting in physical disturbance, potential disturbance and displacement of impacts associated with suspended sediment and underwater noise. Effects caused during decommissioning would be similar to those during the construction phase.

Table 6.1 Summary of effects on fish ecology considered in HRA Screening (screened in (✓) and screened out (✗))

Potential effect	Construction	Operation	Decommissioning
Physical disturbance, displacement and temporary habitat loss	✓	✓	✓
Lasting habitat loss	✗[3]	✓	✗[3]
Increased suspended sediments and sediment re-deposition.	✓	✓	✓
Re-mobilisation of contaminated sediments	✓	✓	✓
Accidental release of pollutants	✓	✓	✓
Introduction of non-native species	✓	✓	✓
Underwater noise and vibration	✓	✓	✓
Electromagnetic Field	✗	✓	✗
Changes in fishing activity	✓	✓	✓

[3] Impacts which span the life of the project or which are permanent will be considered as part of the operation phase assessment and are therefore not considered in the construction or decommissioning phase assessments to avoid duplication.

6.2.1 In-combination effects

62. A highly conservative 100km search area has been used to identify plans and projects for consideration in the HRA screening. Other projects within the search area, include:

- Five Estuaries;
- Consented but not yet constructed OWFs;
- Maintenance activities of existing OWFs;
- Planned interconnector cables; and
- Aggregate areas.

63. Existing activities, such as commercial fisheries and operation of existing OWFs, are considered to be a component of the baseline conditions and are therefore not considered in the in-combination assessment.

64. For the purpose of the screening assessment, the conclusions discussed below apply to the 'project alone' and the in-combination effects with other plans and projects.

6.3 Identification of sites and features

65. Based on a review of available information the following Annex II species are known to either migrate through or spend part of their lifecycle in the North Sea; Atlantic salmon *Salmo salar*, allis shad *Alosa alosa*, twaite shad *Alosa fallax* and sea lamprey *Petromyzon marinus* (and the River lamprey *Lampetra fluviatilis* which is restricted to coastal waters). Therefore, there is the potential for these migratory fish to be present in the vicinity of the North Falls offshore project area and they are therefore considered in this screening exercise.

66. This exercise considers all European sites within the southern North Sea which have migratory fish species listed in Annex II of the Habitats Directive as a qualifying feature.

6.4 Screening

67. There are no UK sites designated for Atlantic salmon, allis shad or twaite shad in the southern North Sea. The nearest sites for these species are:

- Allis shad – Plymouth Sound and Estuaries SAC (c.475km from North Falls);
- Twaite shad – Severn Estuary SAC (c. 850km);
- Atlantic salmon – River Avon SAC (c. 300km)
- Sea lamprey and river lamprey – Humber Estuary SAC (c. 200km)

68. Disturbance to supporting habitats due to installation of infrastructure or due to temporary works will be localised within the offshore project area. Sediment plumes and changes to seabed characteristics are expected to be restricted to within a few kilometres of the offshore project area. Underwater noise, particularly from piling activity may have effects on fish at up to c.34km from the North Falls array area, thus effects would be limited to that range. A conservative search area of 100km has been used in this screening, in accordance with advice from Natural England (Section 3).

69. Given the distance of the UK SACs designated for fish receptors listed at 67 from the offshore project area there is no pathway for effects upon the sites themselves. There is theoretical potential for individual fish from these sites (and other UK sites beyond the southern North Sea) to be in the vicinity of the offshore project area. However, it is considered that there is no potential for LSE, as the absence of European sites for these species reflects the lack of importance of the southern North Sea to the species.

70. At this distance, there would be no pathway for physical interaction, either directly or indirectly, with the SACs themselves. Relatively little is known about the precise habitats occupied by adult sea lampreys and although adults are sometimes caught at sea, the precise conditions in which they occur have not been described. Most adults are found in freshwater, and spawning and larval stages occur in rivers (Maitland, 2003). Given the distance from the SACs, and the mostly freshwater life history of the species it is unlikely that there would be LSE from North Falls on this species. Table 6.2 presents the findings of the HRA screening exercise with justification for scoping individual sites out.

Table 6.2 Screening of European sites with Annex 2 migratory species as a qualifying feature

Site Code	Country	Designation name	Migratory fish qualifying feature	Distance (km)	Screened in/out	Rationale
UK0013111	UK	Plymouth Sound and Estuaries SAC	Allis shad	473	Out	Beyond study area
UK0013030	UK	Severn Estuary SAC	Sea lamprey	835	Out	
			River lamprey			
			Twaite Shad			
UK0013016	UK	River Avon SAC	Atlantic salmon	302	Out	
			Sea lamprey			
UK0030170	UK	Humber Estuary SAC	Sea lamprey	207	Out	The distance between the proposed project and the site is beyond that of potential impacts on the fish features or the supporting habitat and processes and no barrier impacts are predicted.
			River lamprey			
UK0030253	UK	River Derwent SAC	River lamprey	310	Out	
BEMNZ0001	Belgium	Vlaamse Banken SAC	Sea lamprey	34	Out	
			Twaite Shad			
BEMNZ0005	Belgium	Vlakte van de Raan SCI	Sea lamprey	85	Out	
			River lamprey			
			Twaite Shad			
FR3102005	France	Baie De Canche et Couloir Des Trois Estuaires SAC	Salmon	119	Out	
			Sea Lamprey			
			River lamprey			
			Allis Shads			
FR2200346	France	Estuaires et littoral Picards SAC	River lamprey	139	Out	

Site Code	Country	Designation name	Migratory fish qualifying feature	Distance (km)	Screened in/out	Rationale
FR3100479	France	Falaises et Dunes de Wimereux, Estuaire de la Slack, Garennes et Communaux d'Ambleteuse-Audresselles SAC	River lamprey	105	Out	
DE2104301	Germany	Borkum-Riffgrund (Borkum Reef Ground) SCI	Twaite Shad	356	Out	
DE1209301	Germany	Sylter Außenriff (Sylt Outer Reef) SAC	River lamprey	439	Out	
			Twaite Shad			
NL9802001	Netherlands	Noordzeekustzone SAC	Sea Lamprey	190	Out	
			Allis Shad			
			Twaite Shad			
NL2008003	Netherlands	Vlakte Van der Raan SAC	Twaite Shad*	82	Out	
NL4000017	Netherlands	Voordelta SAC	Sea Lamprey	87	Out	
			River lamprey			
			Allis Shads			
			Twaite Shad			
NL9803061	Netherlands	Westerschelde SAC	River lamprey	99	Out	
			Twaite Shad			

7 Offshore SACs – Annex II marine mammal species

7.1 Approach to screening

71. For marine mammals, the approach to HRA screening primarily focuses on the potential for connectivity between individual marine mammals from designated populations and the North Falls offshore project area (i.e. demonstration of a clear source-pathway-receptor relationship). This is based on the distance of the offshore project area from a European site, the range of each effect and the potential for animals from a European site, to be within range of an effect.

72. The HRA screening exercise therefore considers European sites which meet the following criteria:

- The distance between the North Falls offshore project area and a European site with marine mammals as a qualifying feature is within the range for which there could be an interaction. For example, the pathway is not too long for significant noise propagation and therefore the site is within the area of effect for underwater noise effects.
- The distance between the North Falls offshore project area and resources on which the qualifying marine mammal feature depends, such as key habitats or areas of prey species is within the potential area of effect. There is the potential for an indirect effect acting through prey or access to habitat.
- The likelihood that a foraging area or a migratory route occurs within any area of effect of the North Falls offshore project area. This applies to mobile qualifying features when outside of a European site.

7.2 Effects considered in screening

73. Direct or indirect effects to marine mammals may arise from permanent or temporary physical presence of the Project and / or activities relating to the construction, operation or decommissioning of North Falls and associated offshore infrastructure. Effects include indirect effects, for example through impacts on prey species, and direct effects, for example from underwater noise and vessel interactions.

74. Table 7.1 presents a summary of the potential effects during construction, operation and maintenance and decommissioning considered in the HRA screening. Further information on each of the potential effects are provided in the following sections of this report.

Table 7.1 Summary of potential effects on marine mammals considered in HRA Screening (screened in (✓) and screened out (✖))

Potential effect	Construction	Operation	Decommissioning
Physical or auditory injury and behavioural effects from underwater noise during the construction, operation, and decommissioning (including, but not limited to, piling, other construction activities, vessel noise, operation and maintenance activities, operational wind turbines, and decommissioning activities).	✓	✓	✓
Physical or auditory injury and behavioural effects from underwater noise during the clearance of Unexploded Ordnance (UXO) (separate Marine License).	✓	✖	✖
Any barrier effects as a result of underwater noise.	✓	✓	✓
Vessel interactions (increased risk of collision).	✓	✓	✓
Disturbance at seal haul-out sites.	✓	✓	✓
Changes to water quality.	✓	✓	✓
Changes to prey availability and supporting habitats, and any disturbance to foraging at sea.	✓	✓	✓
Barrier effects due to the physical presence of offshore infrastructure.	✖	✖	✖
EMF	✖	✖	✖

7.2.1 In-combination effects

75. A search area based on the reference populations described in Section 7.3 has been used to identify plans and projects for consideration in the HRA screening. Projects within the search area include (but are not limited to):

- Pre-consent OWFs;
- Consented but not yet constructed OWFs;
- Maintenance activities of existing OWFs;
- Geophysical surveys for OWFs;
- Oil and gas installation projects;
- Oil and gas seismic surveys;
- Subsea cable and pipelines; and
- Aggregate areas.

76. Existing activities, such as commercial fisheries and operation of existing OWFs, are considered to be a component of the baseline conditions and are therefore not considered in the in-combination assessment.

77. For the purpose of the screening assessment, the conclusions discussed in Section 7.3 apply to the 'project alone' and the in-combination effects with other plans and projects.

7.3 Summary of baseline information on North Falls

78. Two cetacean species (harbour porpoise *Phocoena phocoena* and bottlenose dolphin *Tursiops truncates*) and two seal species (grey seal *Halichoerus grypus* and harbour seal *Phoca vitulina*), present in UK waters are listed in Annex II of the Habitats Directive and are therefore afforded protection through the designation of SACs in the UK.

79. In addition, all species of cetacean occurring in UK waters are listed in Annex IV of the Habitats Directive as European Protected Species (EPS), which prohibits the deliberate killing, disturbance or the destruction of these species or their habitat. EPS have been considered further in the EIA and reported in the PEIR and ES.

7.3.1 Harbour porpoise

80. Results from the SCANS-III survey (undertaken in summer 2016; Hammond *et al.,* 2021) also indicate that the occurrence of harbour porpoise is greater in the central and southern areas of the North Sea compared to the northern North Sea. In the latest SCANS IV survey sightings of harbour porpoise were seen throughout the entire channel, which has not been seen in previous years (Gilles *et al.,* 2023). SCANS IV found harbour porpoise present in the survey block NS-B (Gilles *et al.,* 2023).

81. Two years of offshore aerial surveys for North Falls have been undertaken (March 2019 to February 2021). After being corrected for availability bias, the highest population estimate for harbour porpoise was in February 2020, with 266 individuals, while the lowest population estimate was 68 in May 2020.

82. In addition, GGOW carried out surveys between 2004 and 2006 (GGOW, 2005) and Galloper Wing Farm (GWF) carried out surveys between June 2008 and May 2011 (GWF, 2011). Harbour porpoise was by far the most commonly encountered marine mammal during these surveys.

83. Harbour porpoise within the eastern North Atlantic are generally considered to be part of a continuous biological population that extends from the French coastline of the Bay of Biscay to northern Norway and Iceland (Tolley and Rosel, 2006; Fontaine *et al.,* 2007, 2014; IAMMWG, 2015). However, for conservation and management purposes, it is necessary to consider this population as smaller, discrete MU. MUs provide an indication of the spatial scales at which effects of plans and projects alone, and in-combination, need to be assessed for the key cetacean species in UK waters, with consistency across the UK (IAMMWG, 2015). The IAMMWG defined three MUs for harbour porpoise: North Sea (NS); West Scotland (WS); and the Celtic and Irish Sea (CIS). The North Falls offshore project area is located within the North Sea MU (Figure 7.1). Therefore, this HRA

screening considers any European sites within the North Sea MU which have harbour porpoise as a qualifying feature of the designation. All European sites beyond the North Sea MU have been screened out from further consideration.

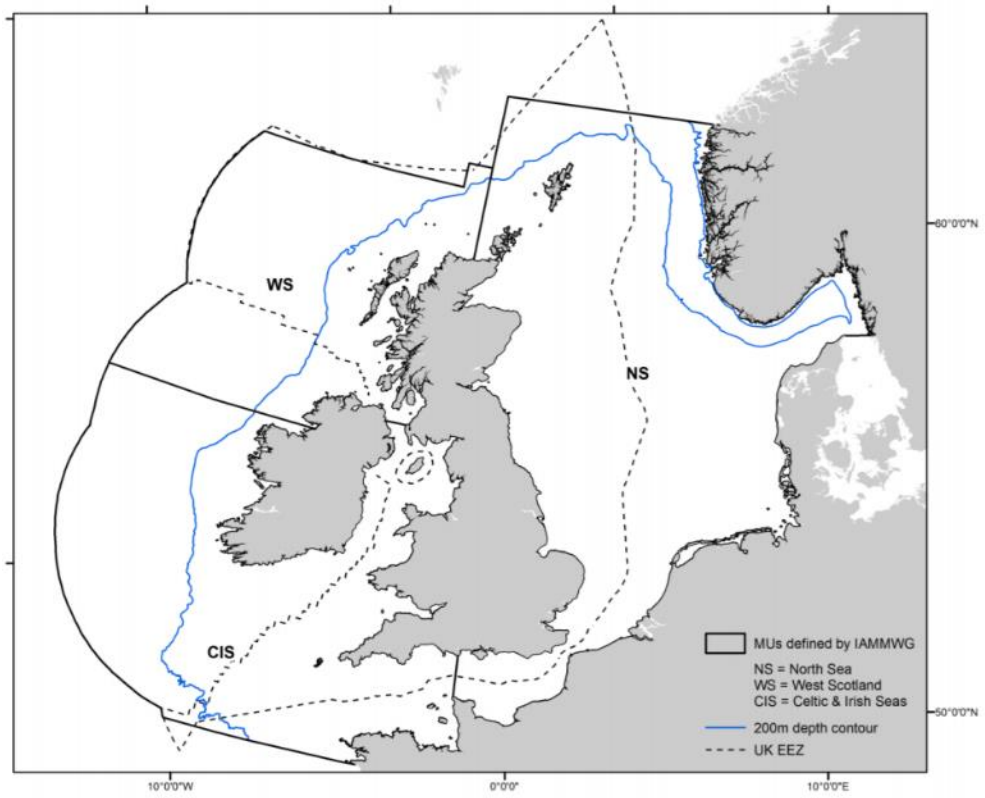


Figure 7.1 Harbour porpoise management units (IAMMWG, 2015)

7.3.2 Bottlenose dolphin

84. Bottlenose dolphin has not been positively identified during the aerial surveys of the North Falls array area. In addition, during SCANS-IV surveys in summer 2022, no bottlenose dolphins were recorded in or around the North Falls offshore project area (Gilles *et al.,* 2023). Between March 2019 and February 2021 HiDef undertook 24 surveys for Five Estuaries Offshore Wind Farm Limited, within these surveys no bottlenose dolphin sightings were made (Five Estuaries Offshore Wind Farm Limited, 2021). As a result, bottlenose dolphin will not be considered further in the HRA.

7.3.3 Grey seal

85. Grey seal is present in the southern North Sea, with a number of haul-out sites for species off the coasts of Essex and Kent (Barker *et al.,* 2014). Grey seals are wide ranging and can breed and forage in different areas (Russell *et al.,* 2013). Carter *et al.,* 2020 gained GPS tracking data for seals, 114 grey seals were tagged. Figure 7.2 shows tagged seal movements along the east coast of England and indicates that grey seal travel between haul-out sites along the east coast of England, as well as to Scotland. Foraging trips generally occur within 100km of their haul-out sites, although grey seal can travel up to several hundred kilometres offshore to forage (SCOS, 2018). Grey seal generally travel between known foraging areas and back to the same haul-out site, but will occasionally

move to a new site. However, new data has indicated grey seals can undertake foraging trips up to 448km (Carter *et al.,* 2022).

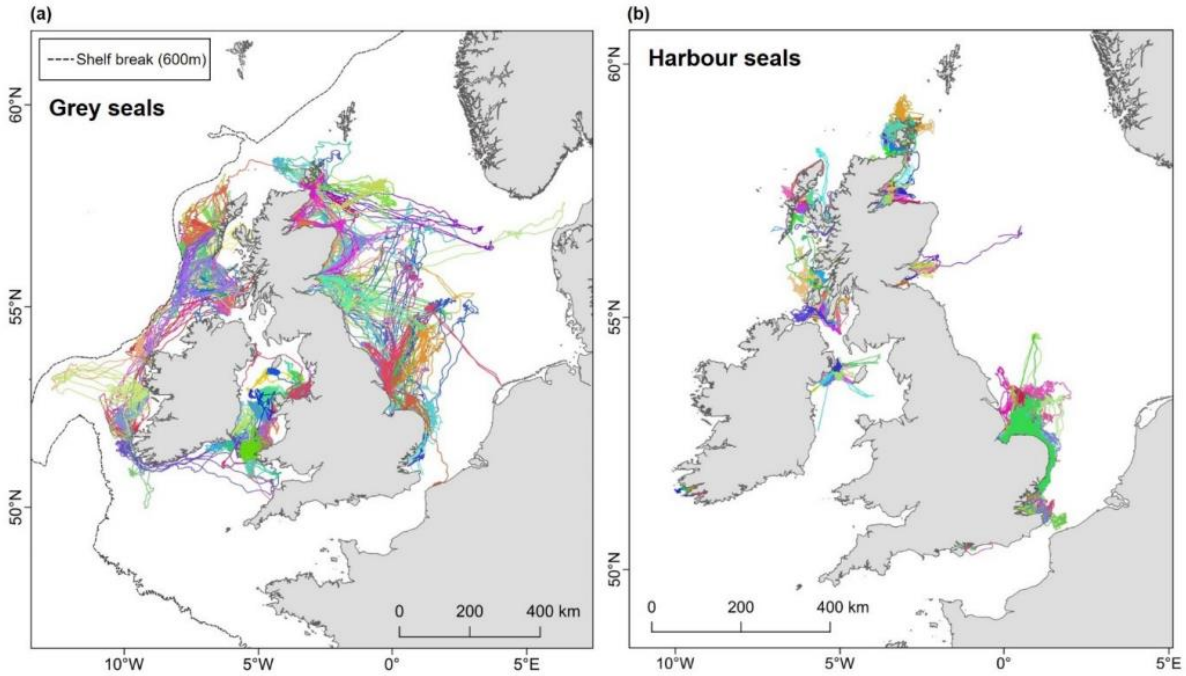


Figure 7.2 GPS tracking data for (a) grey and (b) harbour seals available for habitat preference models (Carter *et al.,* 2020).

86. Two years of offshore aerial surveys for North Falls recorded low numbers of grey seal (six in Year 1 and 17 in Year 2). In addition, there were only six individual grey seals recorded within the GWF study area over the entire survey period (GWF, 2011). This is consistent with Russell *et al.* (2017) which shows densities of grey seal within the North Falls array area is low, with relatively high densities closer to the coastlines, and within the outer Thames Estuary.

87. To take the wide range and movements of grey seal into account, UK designated sites) are considered, based on Carter *et al.,* 2022 SAC density data. This information is used to determine connectivity between North Falls and SAC sites, further information is detailed in Section 7.4. For transboundary European sites, the potential for connectivity to North Falls is based on tagging studies (e.g. Figure 7.2).

7.3.4 Harbour seal

88. As with grey seal, harbour seal is present in the southern North Sea, with a number of haul-out sites for species off the coasts of Essex and Kent (Barker *et al.,* 2014). Densities of harbour seal within the North Falls array area is low, with relatively high densities closer to the coastlines, and within the outer Thames Estuary (Russell *et al.,* 2017).

89. The Sea Mammal Research Unit (SMRU), in collaboration with others, deployed around 344 telemetry tags on harbour seals around the UK between 2001 and 2012. The spatial distributions indicate harbour seals persist in discrete regional populations, display heterogeneous usage, and generally stay within 50km of the coast (Russell and McConnell, 2014). A tagging study by Carter *et al*. 2020,

gained GPS data for 239 harbour seals, a map of the tracking data is shown above (Figure 7.2).

90. Other tracking studies have shown that harbour seals travel 50-100km offshore and can travel 200km between haul-out sites (Lowry *et al.,* 2001; Sharples *et al.,* 2012). The range of these trips varies depending on the location and surrounding marine habitat. The typical and average foraging range for harbour seal is 50-80km (SCOS, 2017). However, new information from Carter *et al.* 2022 details how harbour seal foraging ranges could reach up to 273km.

91. No harbour seals were recorded in the aerial surveys of the North Falls array area, however given the potential for harbour seal to be present, particularly in the nearshore areas in and around the offshore cable corridor, harbour seal are considered in screening.

92. To take the wide range and movements of harbour seal into account, UK designated sites are considered based on Carter *et al.,* 2022 SAC density data. This information was used to determine connectivity between North Falls and SAC sites, further information is detailed in Section 7.4. For transboundary European sites, the potential for connectivity to North Falls was based on tagging studies (e.g. Figure 7.2).

7.3.5 Summary

93. The following Annex II marine mammal species are screened into the HRA:

- Harbour porpoise;
- Grey seal; and
- Harbour seal.

7.4 Identification of sites and features

94. HRA screening for marine mammals considers European sites and potential in-combination effects within the relevant reference populations for each species. Designated sites for harbour porpoise within the North Sea MU have been considered during this HRA screening (Figure 7.1).

95. The approach to screening for seal species was undertaken based on the identified connectivity with SACs through tagging studies, and those SACs that are within the Management Units (MUs) with identified connectivity for seal species. Information on the distributions of both grey and harbour seal (Carter *et al.,* 2022) show the density of a seal species associated specifically with each SAC. This data has been used to determine which of the UK SACs designated for seal species may have connectivity with the North Falls offshore project area.

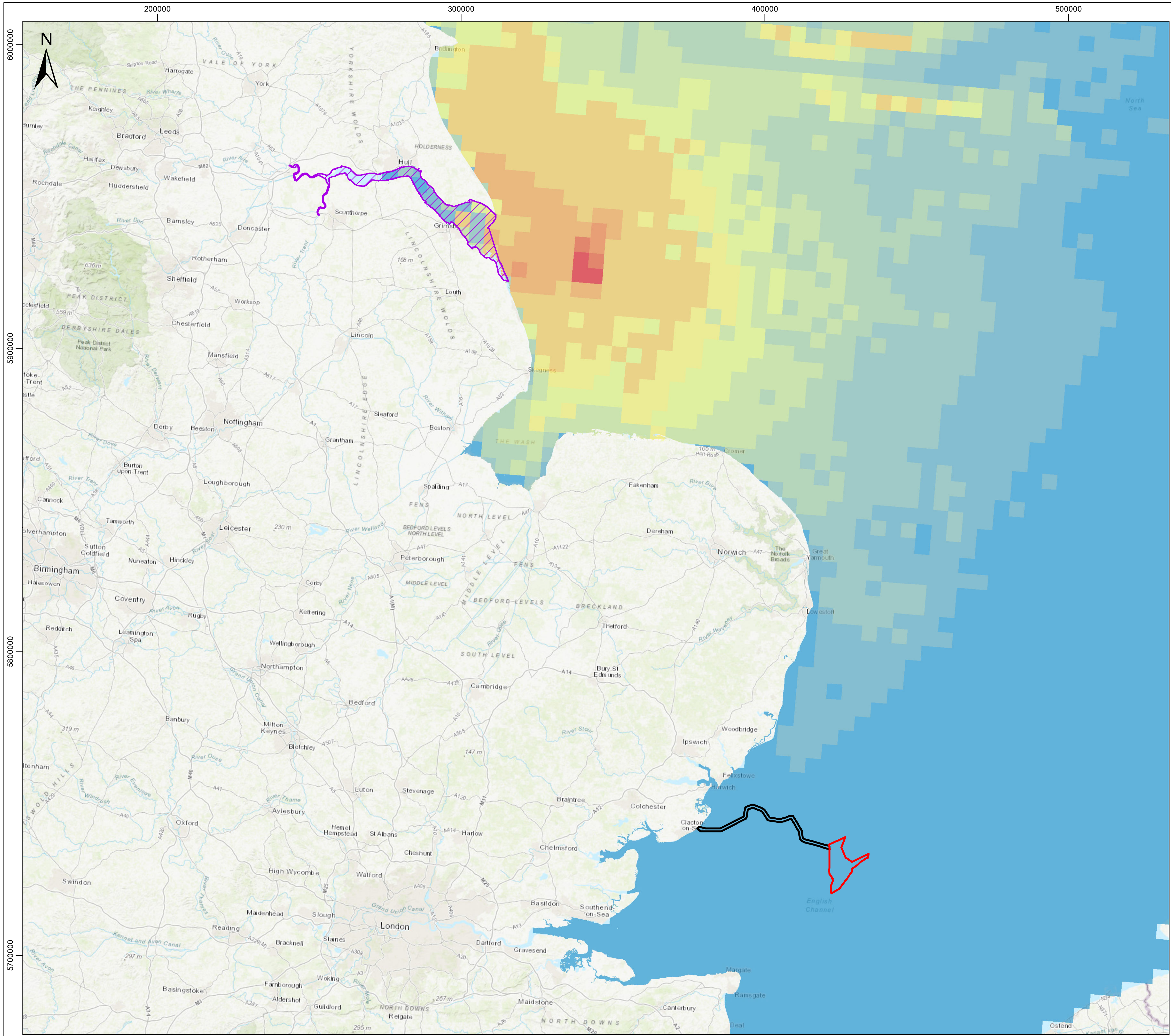
96. Tagging studies were used to determine the potential for grey and harbour seal connectivity of North Falls and transboundary European sites.

97. Natural England and Defra have also provided advice on the approach of assessment of marine mammal SACs (Natural England and Defra, 2022). In this document, Natural England and Defra advise that SACs for marine mammals be undertaken against the SAC population, rather than the MU (with the exception of for harbour porpoise). Therefore, the seal MUs are no longer used to inform

either the potential for connectivity with North Falls, or as the reference population for which assessments are made against.

98. In response to the HRA Screening Report, Natural England requested that the Berwickshire and North Northumberland Coast SAC be screened in, due to the inclusion of the north-east England MU in the reference populations to be assessed for North Falls. Since then, the HRA screening has been updated to take account of Carter *et al.* (2022).

99. The Carter *et al*. (2022) report shows no presence of grey seal associated with the Berwickshire and North Northumberland Coast SAC within the North Falls offshore project area, with the closest presence of any grey seal from that SAC being 28.7km from the closest point of the offshore project area, which is further than any potential effect range (Figure 7.5). In addition, the north-east England MU is no longer included within the assessed population of grey seal, which was the justification Natural England gave for the inclusion of the Berwickshire and North Northumberland SAC. Therefore, Berwickshire and North Northumberland Coast SAC remains screened out, as there is no potential for LSE due to there being no presence of grey seal associated with this SAC.



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Legend

- North Falls Array Area
- Offshore Cable Corridor
- Humber Estuary Special Area of Conservation (SAC)

Mean Grey Seal At-Sea Usage (% per 25km²)

- 0.001 - 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- 0.03 - 0.04
- 0.05 - 0.06
- 0.07 - 0.08
- 0.09 - 0.10
- 0.11 - 0.20
- 0.21 - 0.30
- 0.31 - 0.40
- 0.41 - 0.50
- 0.51 - 2.00

0 10 20 40 nm

0 20 40 80 km

Data Source: © JNCC, 2023. © Carter *et al*, 2022. © HaskoningDHV UK Ltd. 2023.
Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors.

Drawing Title
Grey Seal At-Sea Mean Densities for those Individuals Associated with the Humber Estuary SAC

Rev	Date	Remarks	Drwn	Chkd
01	12/12/2023	First issue	FC	GS

Drawing Number	Figure Number
PB9244-RHD-ZZ-OF-DR-GS-0407	7.3

Scale	Plot Size	Datum	Projection
1:1,250,000	A3	WGS84	UTM31N

Royal HaskoningDHV
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NORTH FALLS
Offshore Wind Farm

300000

400000

5900000

5800000

N

Outer Dowsing

Haddock Bank

Well Bank

Ower Bank

The Wash

Hunstanton

Cromer

Skegness

Boston

Sleaford

Grantham

Spalding

Fakenham

Kings Lynn

Dereham

Norwich

Peterborough

March

Ely

Thetford

Diss

Lowestoft

Huntingdon

St Neots

Newmarket

Bury St Edmunds

Cambridge

Bedford

Haverhill

Saffron Walden

Sudbury

Ipswich

Woodbridge

Baldock

Letchworth

Stevenage

Luton

Dunstable

Harpenden

Hemel Hempstead

St Albans

Hertford

Harlow

Braintree

Colchester

Felixstowe

Harwich

Clacton-on-Sea

Witham

Chelmsford

Chesham

Watford

Brentwood

Basildon

Southend-on-Sea

Grays

London

English Channel

Legend

- North Falls Array Area
- Offshore Cable Corridor
- The Wash and North Norfolk Coast Special Area of Conservation (SAC)

Mean Harbour Seal At-Sea Usage (% per 25km²)

- 0.001 - 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- 0.03 - 0.04
- 0.05 - 0.06
- 0.07 - 0.08
- 0.09 - 0.10
- 0.11 - 0.20
- 0.21 - 0.30
- 0.31 - 0.40
- 0.41 - 0.50
- 0.51 - 2.00

0 5 10 20 nm

0 10 20 40 km

Drawing Title

Harbour Seal At-Sea Mean Densities for those Individuals Associated with The Wash and North Norfolk Coast SAC

Rev	Date	Remarks	Drwn	Chkd
01	12/12/2023	First issue	FC	GS

Drawing Number	Figure Number
PB9244-RHD-ZZ-OF-DR-GS-0408	7.4

Scale	Plot Size	Datum	Projection
1:750,000	A3	WGS84	UTM31N

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NORTH FALLS
Offshore Wind Farm

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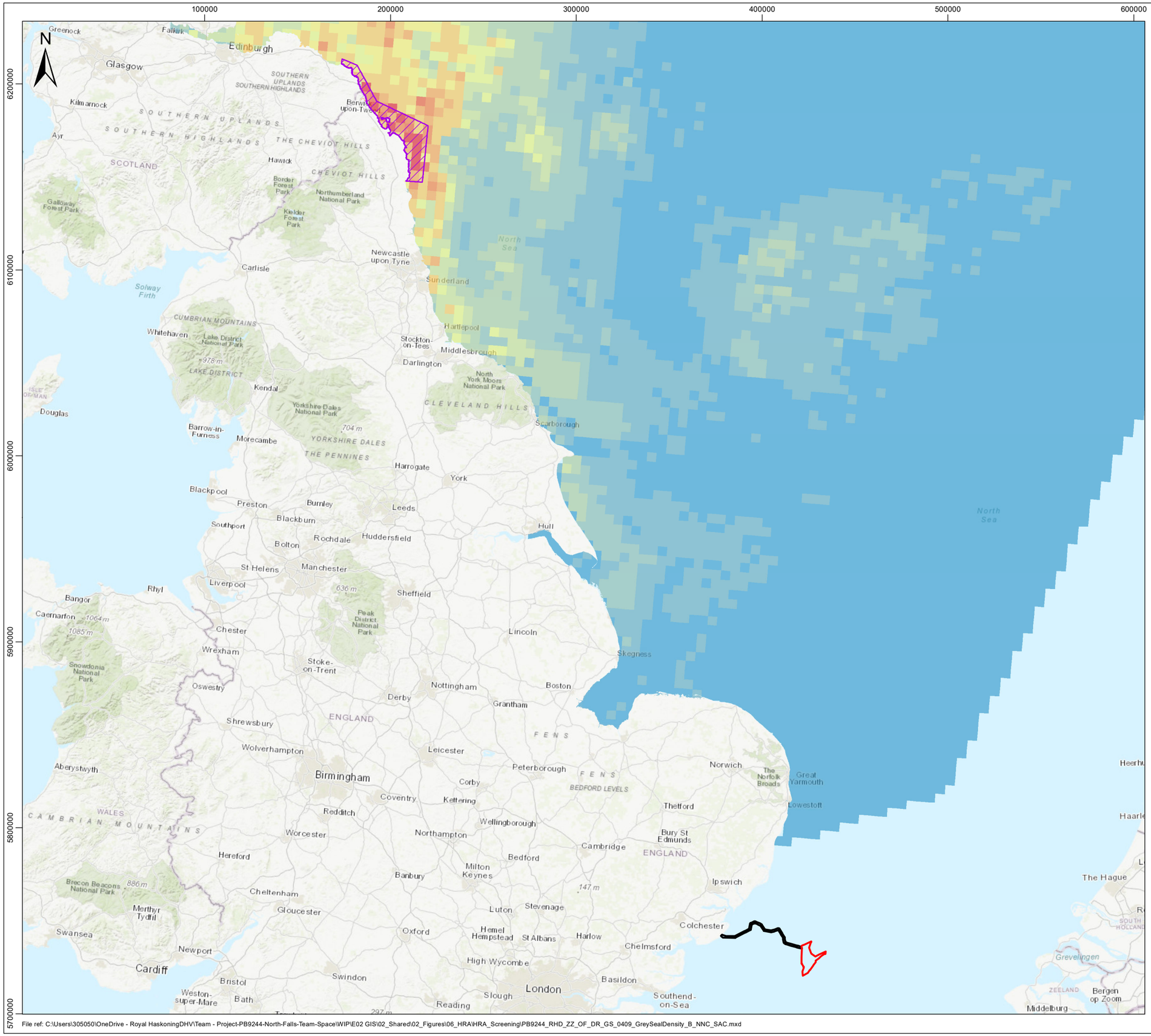

Legend

- North Falls Array Area
- Offshore Cable Corridor
- Berwickshire and North Northumberland Coast Special Area of Conservation (SAC)

Mean Grey Seal At-Sea Usage (% per 25km²)

- 0.001 - 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- 0.03 - 0.04
- 0.05 - 0.06
- 0.07 - 0.08
- 0.09 - 0.10
- 0.11 - 0.20
- 0.21 - 0.30
- 0.31 - 0.40
- 0.41 - 0.50
- 0.51 - 2.00

0 15 30 60 nm

0 30 60 120 km

Drawing Title

Grey Seal At-Sea Mean Densities for those Individuals Associated with Berwickshire and North Northumberland SAC

Rev	Date	Remarks	Drwn	Chkd
01	12/12/2023	First issue	FC	GS

Drawing Number	Figure Number
PB9244-RHD-ZZ-OF-DR-GS-0409	7.5

Scale	Plot Size	Datum	Projection
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Offshore Wind Farm

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7.5 Screening

100. Table 7.2 provides the screening assessment for all European sites, with either harbour porpoise, grey seal or harbour seal listed as a qualifying feature with a population grade of A, B, or C, within the relevant screening areas.

101. The three nearest European sites, with harbour porpoise, grey seal or harbour seal as a qualifying feature have been screened into the HRA for further assessment:

- Southern North Sea SAC, screened in for harbour porpoise;
- Humber Estuary SAC and Ramsar, screened in for grey seal; and
- The Wash and North Norfolk Coast SAC, screened in for harbour seal.

102. As North Falls is located within the Southern North Sea SAC, it is assumed as a worst case scenario that any harbour porpoise affected by the Project would be from this SAC. Given the distance between the Project and other SACs, the potential effects on harbour porpoise would likely be less than those assessed in the SNS SAC. Therefore, no further SACs with harbour porpoise as a qualifying feature are screened in.

103. There are a number of European sites, with either harbour seal or grey seal or both as a qualifying feature, that are within the maximum foraging ranges of 448km for grey seal and 273km for harbour seal. The screening of sites within the maximum foraging distances were initially undertaken before the European sites were screened further to only include those with the potential for connectivity with North Falls (using Carter *et al.,* 2022; Vincent *et al.,* 2017). Based on the potential for connectivity a further five European sites were screened out. Therefore, the European sites that have been screened in for further consideration in the HRA include (Figure 6.7 of the RIAA (Document Reference: 7.1.3):

- Vlaamse Banken SAC, screened in for both harbour seal and grey seal;
- SBZ 1 / ZPS 1 SPA, screened in for harbour seal;
- Vlakte van de Raan SCI, screened in for grey seal and harbour seal;
- Baie de Canche et couloir des trois estuaries SAC, screened in for grey seal;
- Bancs des Flandres SAC, screened in for both harbour seal and grey seal;
- Dunes De La Plaine Maritime Flamande SAC, screened in for harbour seal;
- Estuaire De La Canche, Dunes Picardes Plaquees Sur L'ancienne Falaise, Foret D'hardelot Et Falaise D'equihen SAC, screened in for grey seal;
- Estuaires et littoral picards (baies de Somme et d'Authie) SAC, screened in for grey seal;
- Falaises du Cran aux Oeufs et du Cap Gris-Nez, Dunes du Chatelet, Marais de Tardinghen et Dunes de Wissant SAC, screened in for grey seal;
- Recifs Gris-Nez Blanc-Nez SAC, screened in for both harbour seal and grey seal;

- Ridens et dunes hydrauliques du detroit du Pas-de-Calais SAC, screened in for grey seal;
- Borkum Riffgrund SCI, screened in for grey seal;
- Nationalpark Niedersachsisches Wattenmeer SAC, screened in for grey seal;
- Doggersbank SAC, screened in for grey seal;
- Duinen Ameland SAC, screened in for grey seal;
- Duinen en Lage Land Texel SAC, screened in for grey seal;
- Duinen Goeree & Kwade Hoek SAC, screened in for grey seal;
- Duinen Terschelling SAC, screened in for grey seal;
- Duinen Vlieland SAC, screened in for grey seal;
- Grevelingen SAC, screened in for both grey seal;
- Klaverbank SAC, screened in for grey seal;
- Noordzeekustzone SAC, screened in for grey seal;
- Oosterschelde SPA and SAC, screened in for grey seal;
- Vlakte van de Raan SAC, screened in for grey seal;
- Voordelta SAC and SPA, screened in for grey seal;
- Waddenzee SAC, screened in for grey seal; and
- Westerschelde and Saeftinghe SAC, screened in for grey seal.

Table 7.2 Screening of European sites with harbour porpoise, grey seal or harbour seal as a qualifying feature

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
UK0017072	UK	Berwickshire and North Northumberland Coast SAC	Grey seal	454	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK0019806	UK	Dornoch Firth and Morrich More SAC	Harbour seal	801	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK0017096	UK	Faray and Holm of Faray SAC	Grey seal	859	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK0030311	UK	Firth of Tay & Eden Estuary SAC	Harbour seal	583	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK0030170	UK	Humber Estuary SAC and Ramsar	Grey seal	207	OSPAR Region II	In	Nearest UK European site for grey seal. It is assumed that majority of grey seal in the North Falls offshore project area, or areas of potential effect, are from this European site.
UK0030172	UK	Isle of May SAC	Grey seal	554	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK9002361	UK	Mousa SAC	Harbour seal	912	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
							for direct or indirect effects, alone or in-combination.
UK0030069	UK	Sanday SAC	Harbour seal	854	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK0012687	UK	Yell Sound Coast SAC	Harbour seal	963	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
UK0030395	UK	Southern North Sea SAC	Harbour porpoise	0	North Sea MU	In	Nearest European site for harbour porpoise. It is assumed that all harbour porpoise in the North Falls project area, or areas of potential effect, are from this European site.
UK0017075	UK	The Wash and North Norfolk Coast SAC	Harbour seal	132	North Sea MU and OSPAR Region II	In	Nearest UK European site for harbour seal. It is assumed that majority of harbour seal in the North Falls project area, or areas of potential effect, are from this European site.
BEMNZ0001	Belgium	Vlaamse Banken SAC	Harbour porpoise	34	North Sea MU and OSPAR Region II	In	This site is within both the harbour seal and grey seal maximum foraging distances (of 273km and 448km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
			Harbour seal				
			Grey Seal				
BEMNZ0002	Belgium	SBZ 1 / ZPS 1 SPA	Harbour seal	63	OSPAR Region II	In	This site is within the harbour seal maximum foraging distance (of 273km) of North Falls, and will therefore be considered further in the HRA assessments.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
BEMNZ0005	Belgium	Vlakte van de Raan SCI	Harbour porpoise Grey seal Harbour seal	85	North Sea MU and OSPAR Region II	In	This site is within the grey seal and harbour seal maximum foraging distance (of 448km and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
DK00EY133	Denmark	Agger Tange, Nissum Bredning, Skibsted Fjord Og Agerø SAC	Harbour seal	668	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00FX122	Denmark	Ålborg Bugt, Randers Fjord Og Mariager Fjord SAC	Harbour seal	910	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00DX146	Denmark	Anholt Og Havet Nord For SAC	Harbour seal Grey seal	973	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00EX026	Denmark	Dråby Vig SAC	Harbour seal	730	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00VA259	Denmark	Gule Rev SAC	Harbour porpoise	701	North Sea MU	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
DK00FX257	Denmark	Havet Omkring Nordre Rønner SAC	Harbour seal Grey seal	896	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK003X202	Denmark	Hesselø Med Omliggende Stenrev SAC	Harbour seal Grey seal	1,042	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00FX113	Denmark	Hirsholmene, Havet Vest Herfor Og Ellinge Å's Udløb SAC	Harbour seal Grey seal	878	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00EY124	Denmark	Løgstør Bredning, Vejlerne Og Bulbjerg SAC	Harbour seal	737	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00EY134	Denmark	Lovns Bredning, Hjarbæk Fjord Og Skals, Simested Og Nørre Ådal, Samt Skravad Bæk SAC	Harbour seal	758	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00FX123	Denmark	Nibe Bredning, Halkær Ådal Og Sønderup Ådal SAC	Harbour seal	772	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00FX112	Denmark	Skagens Gren og Skagerrak SAC	Harbour porpoise	817	North Sea MU	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
DK00FX010	Denmark	Strandenge På Læsø Og Havet Syd Herfor SAC	Harbour seal Grey seal	912	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00VA258	Denmark	Store Rev SAC	Harbour porpoise	782	North Sea MU	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00VA347	Denmark	Sydlige Nordsø SAC	Harbour porpoise Grey seal Harbour seal	496	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00AY176	Denmark	Vadehavet med Ribe Å, Tved Å og Varde Å vest for Varde SAC	Harbour porpoise Grey seal Harbour seal	543	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DK00CY040	Denmark	Venø, Venø Sund SAC	Harbour seal	694	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR5300017	France	Abers - Côtes Des Legendes SAC	Grey seal	562	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR3102005	France	Baie de Canche et couloir des trois estuaires SAC	Harbour porpoise Grey seal Harbour seal	119	North Sea MU and OSPAR Region II	In	Potential connectivity for harbour seal seen in Sharples *et al.,* 2008 study between SAC and North Falls project area. Also, this site is within the grey seal and harbour seal maximum foraging

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
							distance (of 448km and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
FR5300015	France	Baie De Morlaix SAC	Grey seal	512	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR2502020	France	Baie de Seine occidentale SAC	Harbour porpoise Harbour seal	301	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR2502021	France	Baie de Seine orientale SAC	Harbour porpoise Harbour seal	274	North Sea MU and OSPAR Region II	Out	The distance between the potential impact range of the proposed project and the site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR2500077	France	Baie Du Mont Saint-Michel SAC	Harbour seal Grey seal	299	North Sea MU and OSPAR Region II	Out	No potential connectivity seen in Carter *et al.,* 2022 or Vincent *et al.,* 2017 studies.
FR3102002	France	Bancs des Flandres SAC	Harbour porpoise Grey seal Harbour seal	37	North Sea MU and OSPAR Region II	In	This site is within both the harbour seal and grey seal foraging distances (of 273km and 448km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
FR5300020	France	Cap Sizun SAC	Grey seal	642	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
FR2500079	France	Chausey SAC	Grey seal	450	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR5302007	France	Chaussée de Sein SAC	Grey seal	641	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR5300009	France	Cote De Granit Rose-Sept-Iles SAC	Grey seal	473	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR5302006	France	Cotes de Crozon SAC	Grey seal	622	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR3100482	France	Dunes de l'Authie et Mollieres de Berck SAC	Harbour seal	141	OSPAR Region II	Out	No potential connectivity seen in Carter *et al.,* 2022 or Vincent *et al.,* 2017 studies.
FR3100474	France	Dunes De La Plaine Maritime Flamande SAC	Harbour seal	69	OSPAR Region II	In	This site is within the harbour seal foraging distance (of 273km) of North Falls and will therefore be considered further in the HRA assessments.
FR3100480	France	Estuaire De La Canche, Dunes Picardes Plaquees Sur L'ancienne Falaise, Foret D'hardelot Et Falaise D'equihen SAC	Harbour seal	105	OSPAR Region II	In	The distance between the project and the site is within foraging range for harbour seal. Grey seal has been screened out as it is a Grade D feature for this site.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
FR2300121	France	Estuaire de la Seine SAC	Harbour seal	280	OSPAR Region II	Out	The distance between the potential impact range of the proposed project and the site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR2200346	France	Estuaires et littoral picards (baies de Somme et d'Authie) SAC	Grey seal Harbour seal	139	OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study between SAC and North Falls project area. Potential connectivity for harbour seal seen in Sharples *et al.,* 2008 study between SAC and North Falls project area.
FR3100478	France	Falaises du Cran aux Oeufs et du Cap Gris-Nez, Dunes du Chatelet, Marais de Tardinghen et Dunes de Wissant SAC	Harbour porpoise Grey seal Harbour seal	82	North Sea MU and OSPAR Region II	In	This site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
FR5300018	France	Ouessant-Molene SAC	Grey seal	593	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR2500088	France	Marais du Cotentin et du Bessin - Baie Des Veys SAC	Grey seal Harbour seal	323	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination for harbour seal. While this is within the potential foraging distance for grey seal, it is considered there is no potential connectivity seen in Carter *et al.,* 2022 or Vincent *et al.,* 2017 studies for grey seal.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
FR5300019	France	Presqu'ile De Crozon SAC	Grey seal	629	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
FR2500085	France	Récifs et Marais Arrière-Littoraux du Cap Lévi À la Pointe de Saire SAC	Grey seal Harbour seal	304	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination for harbour seal. While this is within the potential foraging distance for grey seal, it is considered there is no potential connectivity seen in Carter *et al.,* 2022 or Vincent *et al.,* 2017 studies for grey seal.
FR3102003	France	Recifs Gris-Nez Blanc-Nez SAC	Harbour porpoise Grey seal Harbour seal	73	North Sea MU and OSPAR Region II	In	This site is within both the harbour seal and grey seal foraging distances (of 273km and 448km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
FR3102004	France	Ridens et dunes hydrauliques du detroit du Pas-de-Calais SAC	Harbour porpoise Harbour seal Grey seal	82	North Sea MU and OSPAR Region II	In	This site is within marine mammal foraging distances of North Falls and there is potential connectivity, and will therefore be considered further in the HRA assessments.
FR5300010	France	Tregor Goëlo SAC	Grey seal	458	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE2104301	Germany	Borkum-Riffgrund SCI	Harbour porpoise Grey seal Harbour seal	368	North Sea MU and OSPAR Region II	In	The distance is within grey seal foraging distances.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
DE1003301	Germany	Doggerbank SCI	Harbour porpoise Harbour seal	405	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE1115391	Germany	Dünenlandschaft Süd-Sylt SAC	Grey seal	522	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE2016301	Germany	Hamburgisches Wattenmeer SAC	Harbour porpoise Grey seal Harbour seal	476	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE1813391	Germany	Helgoland mit Helgolander Felssockel SAC	Harbour porpoise Grey seal Harbour seal	463	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE2507301	Germany	Hund und Paapsand SCI	Harbour seal	376	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE1315391	Germany	Küsten- und Dünenlandschaften Amrums SAC	Grey seal	520	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE2424302	Germany	Muhlenberger Loch / Nesssand SAC	Harbour seal	589	OSPAR Region II	Out	The distance between the potential impact range of the proposed project and the site is beyond that of potential for direct or indirect effects, alone or in-combination.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
DE2306301	Germany	Nationalpark Niedersachsisches Wattenmeer SAC	Harbour porpoise Grey seal Harbour seal	370	North Sea MU and OSPAR Region II	In	The distance is within grey seal foraging distances
DE0916391	Germany	NTP S-H Wattenmeer und angrenzende Kustengebiete SAC	Harbour porpoise Grey seal Harbour seal	480	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE2323392	Germany	Schleswig-Holsteinisches Elbastuar und angrenzende Flachen SAC	Harbour seal	507	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE1011401	Germany	SPA Ostliche Deutsche Bucht SPA	Harbour porpoise Grey seal Harbour seal	468	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE1714391	Germany	Steingrund SAC	Harbour porpoise Grey seal Harbour seal	472	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE1209301	Germany	Sylter Außenriff SCI	Harbour porpoise Grey seal Harbour seal	439	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination for harbour seal. While this is within the potential foraging distance for grey seal, it is considered there is no potential connectivity seen in Carter *et al.,* 2022 or Vincent *et al.,* 2017 studies for grey seal.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
DE2018331	Germany	Unterelbe SAC	Harbour porpoise Harbour seal	511	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
DE2507331	Germany	Unterems und Aussenems SAC	Harbour seal	379	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
NL2008001	Netherlands	Doggersbank SAC	Harbour porpoise Grey seal Harbour seal	273	North Sea MU and OSPAR Region II	In	Potential connectivity for grey seal seen in Carter *et al.,* 2022 study between SAC and North Falls project area.
NL3009005	Netherlands	Duinen Ameland SAC	Grey seal	298	OSPAR Region II	In	The distance is within grey seal foraging distances and there is potential connectivity as shown in Vincent *et al.,* 2017.
NL2003060	Netherlands	Duinen en Lage Land Texel SAC	Grey seal	220	OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study between SAC and North Falls project area.
NL9801079	Netherlands	Duinen Goeree & Kwade Hoek SAC	Grey seal Harbour seal	126	OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study and harbour seal connectivity shown in Reijnders *et al.,* 2010 study between SAC and North Falls project area.
NL2003059	Netherlands	Duinen Terschelling SAC	Grey seal	267	OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study between SAC and North Falls project area.
NL2003061	Netherlands	Duinen Vlieland SAC	Grey seal	248	OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study between SAC and North Falls project area.
NL4000021	Netherlands	Grevelingen SAC	Grey seal	122		In	

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
			Harbour seal		OSPAR Region II		Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study and harbour seal in Reijnders *et al.,* 2010 between SAC and North Falls project area. Also, this site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls and will therefore be considered further in the HRA assessments.
NL2008002	Netherlands	Klaverbank SAC	Harbour porpoise Grey seal Harbour seal	219	North Sea MU and OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study between SAC and North Falls project area. Also, this site is within the grey seal foraging distance (of 448km) of North Falls and will therefore be considered further in the HRA assessments. While this is within the potential foraging distance for harbour seal, it is considered there is no potential connectivity seen in Carter *et al.,* 2022 or Reijnders *et al.,* 2010 studies for harbour seal.
NL9802001	Netherlands	Noordzeekustzone SAC	Harbour porpoise Grey seal Harbour seal	190	North Sea MU and OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study and harbour seal in Reijnders *et al.,* 2010 between SAC and North Falls project area. Also, this site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
NL3009016	Netherlands	Oosterschelde SPA and SAC	Harbour porpoise Grey seal Harbour seal	114	North Sea MU and OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study and harbour seal in Reijnders *et al.,* 2010 between SAC and North Falls project area. Also, this site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls,

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
							and will therefore be considered further in the HRA assessments.
NL2008003	Netherlands	Vlakte van de Raan SAC	Harbour porpoise Grey seal Harbour seal	82	North Sea MU and OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study and harbour seal in Reijnders *et al.,* 2010 between SAC and North Falls project area. Also, this site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
NL4000017	Netherlands	Voordelta SAC and SPA	Harbour porpoise Grey seal Harbour seal	87	OSPAR Region II	In	This site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls, and shows potential connectivity, therefore will be considered further in the HRA assessments.
NL1000001	Netherlands	Waddenzee SAC	Harbour porpoise Grey seal Harbour seal	217	OSPAR Region II	In	Potential connectivity for grey seal seen in Vincent *et al.,* 2017 study and harbour seal in Reijnders *et al.,* 2010 between SAC and North Falls project area. Also, this site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
NL9803061	Netherlands	Westerschelde & Saeftinghe SAC	Harbour porpoise Grey seal Harbour seal	99	OSPAR Region II	In	This site is within the grey seal and harbour seal foraging distance (of 448 and 273km respectively) of North Falls, and will therefore be considered further in the HRA assessments.
SE0510050	Sweden	Balgö SAC	Harbour seal	996	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
SE0520171	Sweden	Gullmarsfjorden SAC	Harbour seal	917	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0420002	Sweden	Hallands Vadero SAC	Harbour seal	1,041	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0520170	Sweden	Kosterfjorden-Väderöfjorden SAC	Harbour porpoise Harbour seal	929	North Sea MU and OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0510058	Sweden	Kungsbackafjorden 2011	Harbour seal	946	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0510084	Sweden	Nidingen 2011	Harbour seal	948	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0520057	Sweden	Malmöfjord SAC	Harbour seal	922	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0520058	Sweden	Måseskär SAC	Harbour seal	909	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.

Site Code	Country	Designation name	Qualifying Feature	Distance (km)	Screening area	Screened in/out	Rationale
SE0520043	Sweden	Nordre Älvs Estuarium SAC	Harbour seal	914	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0420360	Sweden	Nordvästra Skånes havsområde SCI	Harbour seal	1,015	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
			Grey seal				
SE0520176	Sweden	Pater Noster-Skärgården SAC	Harbour seal	908	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0520036	Sweden	Sälöfjorden SAC	Harbour seal	910	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0520188	Sweden	Soteskär SAC	Harbour seal	925	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.
SE0520001	Sweden	Vrångöskärgården SAC	Harbour seal	921	OSPAR Region II	Out	The distance between the potential effect range of North Falls and this European site is beyond that of potential for direct or indirect effects, alone or in-combination.

8 Offshore SPAs

8.1 Approach to screening

104. Birds present in offshore waters and potentially affected by the construction, operation and decommissioning of North Falls will be predominantly seabirds (defined for this report as auks, gulls, terns, gannets, skuas, shearwaters, petrels and divers). These species have the potential to be present during the breeding season and non-breeding season (including spring/autumn migration/passage periods). Other bird species that may be affected by the Project include waterfowl (e.g. swans, geese, ducks and waders) and other bird species which may fly through the Project areas during spring and/or autumn migration/passage periods. A summary of the baseline information is provided in Section 8.3 to inform the HRA screening.

105. The HRA screening for offshore ornithology considers European sites (SPAs and Ramsar sites) which meet at least one of the following criteria in relation to the North Falls offshore project area (including the array area and offshore cable corridor to MHWS at the landfall) and:

- A component part of the Project overlaps directly with a European site with bird species as qualifying features, or is located in close proximity to the boundary such that there may be an effect on one or more qualifying species within the SPA;
- The distance between the Project and a European site with a qualifying bird feature is within the range for which there could be an interaction (i.e. the pathway is not too long), discussed in further detail in Section 8.4.
- For seabirds during the breeding season this element of the screening process is informed by published information on foraging ranges from breeding colonies (mean maximum foraging range plus one standard deviation (SD); Woodward *et al.,* 2019);
- For seabirds outside the breeding season, Biologically Defined Minimum Population Scales (BDMPS; Furness, 2015) have been used to identify potential connectivity with North Falls;
- For migratory birds other than seabirds, SPAs within 100km of the Project are considered; and
- The distance between the Project(s) and resources on which the qualifying feature depends (i.e. an indirect effect acting through prey or access to habitat) is within the range for which there could be an interaction (i.e. the pathway is not too long), applying professional judgment.

106. The approach taken was informed by the HRA screening reports for OWFs most recently submitted to The Planning Inspectorate (PINS) (e.g. Dudgeon and Sheringham Shoal Extensions PEIR (Royal HaskoningDHV, 2021); East Anglia One North (ScottishPower Renewables, 2019)) and feedback from stakeholders on the North Falls HRA Screening Report (Section 3).

107. Assessment of species-specific risk to potential effects of OWFs is informed by industry standard advice and guidance, and relevant scientific papers, as well as assessments for recently proposed OWFs in the southern North Sea, and representations from stakeholders during DCO examinations.

108. Information on SPAs, Ramsar sites and their qualifying features is taken from SPA citations/Natura 2000 forms, conservation objectives, departmental briefs and Ramsar site lists and Information Sheets as published by the Statutory Nature Conservation Bodies (SNCBs), including Natural England's designated sites view[4], NatureScot's sitelink[5] and JNCC links to Ramsar Information Sheets[6].

109. In terms of qualifying features, the approach taken was to focus on qualifying species as listed in the European Site conservation objectives, and for SPAs also designated as Ramsar sites to consider if there were any additional qualifying features in the context of the Ramsar sites criteria under which a site was designated. This approach was considered appropriate in the context of advice on Natural England designated sites, that: "*For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, instead focussing on the production of High Level Conservation Objectives. As the provisions on the Habitats Regulations relating to Habitat Regulations Assessments (HRAs) extend to Ramsar sites, Natural England considers the Conservation Advice packages for the overlapping European Marine Site designations to be, in most cases, sufficient to support the management of the Ramsar interests*." Advice on operations for Marine Protected Areas were not considered necessary for screening but will be referred to as required for Appropriate Assessment.

110. Distances between North Falls and European sites were measured in GIS (the shortest straight-line distance) using SPA and Ramsar shapefiles downloaded from SNCB websites.

8.2 Effects considered in screening

111. Screening of European sites and Ramsar sites for offshore ornithology took account of the potential effect(s) of the Project on each qualifying feature. Direct or indirect effects to offshore ornithology receptors in offshore waters may arise from temporary and permanent infrastructure and activities associated with the construction, operation and decommissioning of the Project, as identified in Table 8.1. Thus, where an SPA and qualifying species are screened in for LSE, the potential effect(s) that are relevant (e.g. where a species is considered vulnerable to collision) are also stated.

[4] https://designatedsites.naturalengland.org.uk/
[5] https://sitelink.nature.scot/home
[6] https://jncc.gov.uk/our-work/ramsar-sites/

Table 8.1 Summary of the potential effects of the Project on offshore ornithology receptors considered in HRA Screening

Potential effect	Construction	Operation	Decommissioning
Direct impacts			
Disturbance and displacement due to work activity, presence / movements of vessels and other plant, and lighting	✓	✓	✓
Disturbance / displacement / barrier effect due to presence of turbines and other infrastructure	✓	✓	✓
Collision risk due to the presence of turbines and other infrastructure	×	✓	×
Indirect impacts			
Impacts through effects on habitats and prey species	✓	✓	✓

8.2.1 In-combination effects

112. For the purpose of the screening assessment, the conclusions discussed in Section 8.5 apply to the 'project alone' and the in-combination effects with other plans and projects.

113. All of the features screened in will be subject to in-combination assessment for those effects. For example, for an SPA breeding seabird species screened in for LSE in relation to collision risk during the breeding season, an in-combination assessment will be carried out considering combined collision risk for all OWFs and other projects and plans that may contribute to the effect under consideration.

8.3 Summary of baseline information on North Falls

8.3.1 Baseline surveys for North Falls

114. Monthly digital aerial surveys for offshore ornithology receptors took place between March 2019 and February 2021. Surveys were flown along strip transects (oriented roughly north-west to south-east and at a spacing of 2.5km) covering the array area and a 4km buffer (the survey area) (HiDef 2020, 2021). In January and February 2021 the survey area was extended to 12km from the OWF boundary in the west, to include additional areas for red-throated diver. Data was processed to give 15% coverage in all surveys. The findings of the surveys are provided in ES Appendix 13.2 Offshore Ornithology Technical Report (Document Reference: 3.3.13) and relevant species are considered in this HRA screening.

8.3.2 Biologically relevant seasons for seabirds

115. Biologically relevant seasons for each seabird species recorded during baseline surveys of North Falls are given in Table 8.2. Depending on evidence for patterns of movement, the non-breeding season for some species is sub-divided into spring and autumn migration and winter periods.

116. Species-specific seasons are from Furness (2015) except for black-headed gull, common gull and little gull, which are based on Cramp and Simmons (1983).

Table 8.2 Biologically relevant seasons for seabird species

Species	Season*				
	Breeding	Migration-free breeding	Autumn migration	Winter / non-breeding	Spring migration
Black-headed gull	Apr-Jul	n/a	n/a	Aug-Mar	n/a
Common gull	May-Jul	n/a	n/a	Aug-Apr	n/a
Common tern	May-Aug	Jun-m.Jul	l.Jul-e.Sep	n/a	Apr-May
Cormorant	Apr-Aug	n/a	n/a	Sep-Mar	n/a
Fulmar	Jan-Aug	Apr-Aug	Sep-Oct	Nov	Dec-Mar
Gannet	Mar-Sep	Apr-Aug	Sep-Nov	n/a	Dec-Mar
Great black-backed gull	l.Mar-Aug	May-Jul	n/a	Sep-Mar	n/a
Great skua	May-Aug	May-Jul	Aug-Oct	Nov-Feb	Mar-Apr
Guillemot	Mar-Jul	Mar-Jun	n/a	Aug-Feb	n/a
Herring gull	Mar-Aug	May-Jul	n/a	Sep-Feb	n/a
Kittiwake	Mar-Aug	May-Jul	Aug-Dec	n/a	Jan-Apr
Lesser black-backed gull	Apr-Aug	May-Jul	Aug-Oct	Nov-Feb	Mar-Apr
Little gull	Apr-Jul	May-Jul	n/a	Aug-Apr	n/a
Puffin	Apr-e.Aug	May-Jun	n/a	m.Aug-Mar	n/a
Razorbill	Apr-Jul	Apr-Jun	Aug-Oct	Nov-Dec	Jan-Mar
Red-throated diver	Mar-Aug	May-Aug	Sep-Nov	Dec-Jan	Feb-Apr
Sandwich tern	Apr-Aug	Jun	Jul-Sep	n/a	Mar-May
*Prefixes: e. = early in month, m. = mid-month and l. = late month.					

8.4 Identification of sites and features for screening

8.4.1 Seabirds - breeding season

117. The breeding season is the time when breeding seabirds are constrained in their foraging ranges by requirements to attend nests to incubate eggs and feed chicks. At this time they are considered most likely to be susceptible to effects due to the construction, operation and decommissioning of OWFs. For SPAs for breeding seabirds, published information on foraging ranges of seabirds during

the breeding season (Woodward *et al.,* 2019) was used to establish the likelihood of connectivity between the qualifying features of the SPA and the North Falls offshore project area.

118. The mean maximum foraging range for a species (the mean of the maximum foraging ranges recorded from each breeding colony for which foraging range data are available, Woodward *et al*. 2019) is generally considered to be the most appropriate measure in identifying spatial overlap between an OWF and the probable foraging grounds of a breeding seabird colony, and therefore connectivity between the colony and the habitat where the OWF is located. As a precautionary measure, and based on advice from Natural England, the mean maximum foraging range plus one standard deviation (SD) was used. Breeding seabird species which are qualifying features of SPAs and Ramsar sites within the species-specific mean maximum foraging range (+ 1SD) of the Project, and which were recorded in the survey area during the breeding season, are screened in, unless there is a justifiable biological reason for them being screened out. Such reasons would include the availability of information on the foraging ranges of species from particular breeding colonies which suggests that birds from a given colony would be unlikely to occur at North Falls (this relates for example to evidence for parapatric competition between kittiwake, guillemot and gannet colonies during the breeding season (Wakefield *et al.,* 2017, 2013), such that the foraging areas of birds from different colonies do not tend to overlap). Therefore, in some cases, utilisation distributions of key species (Cleasby *et al.,* 2020, 2018; Wakefield *et al.,* 2017) have been considered to assess the likely origin of particular species recorded within the baseline survey area for the Project.

Table 8.3 Mean maximum and maximum foraging ranges (Woodward *et al.,* 2019) from breeding colonies for seabird species considered in the HRA screening for North Falls

SPECIES	MEAN MAXIMUM FORAGING RANGE (KM ± STANDARD DEVIATION SD)[1]	MEAN MAXIMUM FORAGING RANGE + 1SD (KM)	MAXIMUM FORAGING RANGE (KM)
Arctic tern	25.7 (± 14.8)	40.5	46
Black-headed gull	18.5 (no S.D.)	18.5	19
Common gull	50 (no S.D.)	50	50
Common tern	18.0 (± 8.9)	26.9	30
Cormorant	25.6 (± 8.3)	33.9	35
Fulmar	542.3 (± 657.9)	1,200.2	2736
Gannet	315.2 (± 194.2)	509.4	709
Great black-backed gull	73 (no S.D.)	73	73
Great skua	443.3 (± 487.9)	931.2	1003
Guillemot	73.2 (± 80.5)	153.7	338

SPECIES	MEAN MAXIMUM FORAGING RANGE (KM ± STANDARD DEVIATION SD)[1]	MEAN MAXIMUM FORAGING RANGE + 1SD (KM)	MAXIMUM FORAGING RANGE (KM)
Herring gull	58.8 (± 26.8)	85.6	92
Kittiwake	156.1 (± 144.5)	300.6	770
Leach's petrel	657 (mean)	-	-
Lesser black-backed gull	127.0 (± 109)	236	533
Little tern	5 (no S.D.)	5	5
Manx shearwater	1346.8 (± 1018.7)	2365.5	2890
Mediterranean gull	20 (no S.D.)	20	20
Puffin	137.1 (± 128.3)	265.4	383
Razorbill	88.7 (± 75.9)	164.6	313
Red-throated diver	9 (no S.D.)	9	20
Roseate tern	12.6 (± 10.6)	23.2	23.9
Sandwich tern	34.3 (± 23.2)	57.5	80
Shag	13.2 (± 10.5)	23.7	46
Storm petrel	336 (no SD)	336	336
1. The mean maximum foraging range for a species is the mean of the maximum foraging ranges recorded from each breeding colony for which foraging range data were available.			

8.4.2 Seabirds – non-breeding season

119. Outside the breeding season seabirds are no longer constrained by requirements to attend nests and disperse over greater distances than breeding season foraging ranges from their colonies. During this time, breeding adults from SPA colonies may encounter OWFs from which they are at risk of displacement or collision, which would not have presented such a risk during the breeding season. These breeding adults are assumed to mix evenly with non-breeding birds which may be immature or sub-adults (most seabirds take several years to reach breeding age so that large proportions of the populations are sub-adult). In turn, this population is then assumed to mix evenly with seabirds from other colonies. BDMPS and total population estimates for UK seabirds outside the breeding season are described by Furness (2015), along with approximate seasonal movement patterns. BDMPS areas are extensive and overall population sizes for individual species are generally large, consisting of the combined populations of many seabird colonies from both the UK and overseas.

120. For seabird species covered by Furness (2015), the non-breeding season BDMPS was used to identify the area of search for UK SPAs and Ramsar sites with potential connectivity with the Project. On a precautionary basis, seabird qualifying features of breeding colony SPAs were screened in for LSE where there was overlap between one or more non-breeding season BDMPS (passage and/or winter periods depending on species) and North Falls. This coarse sift was employed on the basis that seabirds from breeding colony SPAs within the BDMPS could potentially occur at or pass through North Falls during the non-breeding season.

8.4.3 Migratory birds other than seabirds

121. In addition to seabirds, other offshore ornithology receptors that migrate across areas of open sea may encounter OWFs and be at risk of collision if they fly through a turbine array, or barrier effects if they avoid turbine arrays. Some of these species have been detected during the baseline surveys, although as with surveys at all OWFs in UK waters, the design of the baseline surveys is such that the numbers of a given migratory species passing through a site may be underestimated. This is because non-seabird species may migrate across offshore areas in large numbers over relatively restricted time periods (a few days or weeks), and sometimes at high altitude and/or at night. Thus, it is likely that the majority of migratory species passing through an offshore area will not be captured by monthly surveys during daylight hours,

122. Screening considered qualifying features of coastal and inland SPAs and Ramsar sites for migratory species within approximately 100km of the Project. These were primarily wetland and marine sites, but included some terrestrial sites for migratory species such as nightjar and woodlark. It was considered that 100km represents a reasonable cut off point for this exercise, based on professional judgement. The probability that waders, wildfowl or other migrants from a particular SPA located in excess of 100km from North Falls would migrate through the site in numbers sufficient to result in an LSE is considered to be highly remote. This assumes that migration pathways are generally in straight lines from SPAs across sea areas within migration corridors. The screening was checked against migration corridor maps in Wright *et al*. (2012) and migration routes in the migratory collision risk tool (the latter based on the assumption of straight-line migration). The Wright *et al*. (2012) report and collision tool consider risk for species in the context of i) sea crossing sections of their migration only, and ii) their migratory or biogeographic populations of each species with no apportioning to SPA populations. Where additional species were highlighted as potentially migrating through the North Falls array area, the list of UK SPAs for which the species is a qualifying feature (breeding and/or non-breeding features) was consulted. Sites in vicinity of the eastern regions of England and Scotland (closest to the North Sea and Channel waters geographic region as defined by Furness (2015)) were considered. Of these, sites within about 100km of the North Falls OWF were screened in as most likely to have SPA-level connectivity with North Falls.

8.4.4 Transboundary European sites

123. As well as UK SPAs and Ramsar sites, Screening considered Transboundary European sites designated by other European countries for birds, where the

distance between the Transboundary site and North Falls was such that an effect might be possible based on the criteria identified above.

8.5 Screening

124. The list of SPAs and Ramsar sites considered in screening for LSE is included in Table 8.4 for UK sites and Table 8.5 for Transboundary sites. These SPAs and Ramsar sites are listed in order of increasing distance from the Project. Screening considers each SPA qualifying feature and the season for which the SPA was designated for that feature, as well as the seasons when LSE may occur.

125. SPAs and Ramsar sites are screened in where LSE cannot be ruled out for one or more qualifying features and screened out where LSE can be ruled out for all qualifying features. A rationale is given for each SPA or Ramsar site and qualifying feature to explain the screening decision and identify the effect(s) for which a given qualifying feature has been screened in.

Table 8.4 North Falls: Screening outcome for UK SPA and Ramsar Sites with offshore ornithology features. Sites where LSE cannot be ruled out for at least one qualifying feature are shaded in darker blue.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9020309	Outer Thames Estuary SPA	4.5	0.00	Red-throated diver, non-breeding	IN	Potential risk of displacement/disturbance and displacement/barrier effects during the non-breeding season. The distance between North Falls and the SPA boundary is such that there may be disturbance to red-throated divers within the SPA during construction/decommissioning (of the offshore export cable (which passes through the SPA) and turbine arrays) and displacement/barrier effect during operation.
				Little tern, breeding	OUT	Species not recorded in the baseline surveys. North Falls is distant (*c.* 50km at the nearest point) from areas within the SPA boundary identified as important for foraging and nesting little terns, including the Scroby Sands and bank within the SPA boundary (Natural England and JNCC, 2015). There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b) and therefore no LSE is predicted.
				Common tern, breeding	IN	Potential risk of collision during the non-breeding (spring and autumn passage) period. North Falls is distant (*c.* 40km at the nearest point) from areas within the SPA boundary identified as important for foraging and nesting common terns, including the Scroby Sands and bank within the SPA boundary (Natural England and JNCC, 2015), therefore not screened in during the breeding season.
UK9009112 UK11002	Alde-Ore Estuary SPA and Ramsar site	39.1	13.89	Sandwich tern, breeding	IN	Potential risk of collision and displacement/barrier effects during the breeding season and non-breeding (migration) period. North Falls overlaps with the mean maximum foraging range from the SPA + 1SD. The species was recorded in the survey area.
				Little tern, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, although

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						the species does not fly regularly at collision height (Johnston *et al* 2014a&b) and therefore no LSE is predicted.
				Lesser black-backed gull, breeding	IN	Potential risk of collision during the breeding season. North Falls overlaps with the mean maximum foraging range from the SPA. The species was recorded in the survey area during the breeding season. Based on the seasonal peak mean count at North Falls and the composition of the non-breeding season BDMPS (UK North Sea Waters) for lesser black-backed gull (Furness 2015), North Falls is estimated to support 0.05% of the adult SPA breeding population during autumn migration, 0.09% in winter, and 0.03% during spring migration.
				Avocet, breeding	IN	Potential risk of collision during migratory flights to and from the site. Migratory species which may fly through North Falls on passage.
				Avocet, non-breeding	IN	Potential risk of collision during migratory flights to and from the site. Migratory species which may fly through North Falls on passage.
				Marsh harrier, breeding	IN	Potential risk of collision during migratory flights to and from the site. Migratory species which may fly through North Falls on passage
				Redshank, non-breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ruff, non-breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Notable assemblage of breeding and wintering wetland birds[R]	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9020286	Sandlings SPA	42.8	18.83	Nightjar, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Woodlark, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
UK9009101 and UK11044	Minsmere-Walberswick SPA and Ramsar	52.0	38.27	Avocet, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Bittern, breeding	OUT	SPA is designated for bitterns in the breeding season. Bitterns breeding in the UK are relatively sedentary (Wright *et al*. 2012) and remain in breeding areas during the non-breeding season. The risk of individuals from the SPA population passing through North Falls is considered negligible so LSE can be ruled out.
				Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys.
				Marsh harrier, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Nightjar, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shoveler, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shoveler, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Teal, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Gadwall, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Gadwall, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				White-fronted goose, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Assemblage of rare breeding birds associated with marshland and reedbeds[R]	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009261 and UK11017	Deben Estuary SPA and Ramsar	40.0	12.92	Avocet, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9009131 and UK11028	Hamford Water SPA and Ramsar	38.7	4.14	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Avocet, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Black-tailed godwit *islandica*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, wintering[S], passage[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ringed plover, wintering[S], passage[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shelduck, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Teal, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9009121 and UK11067	Stour and Orwell Estuaries SPA and Ramsar	38.7	13.34	Avocet, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Black-tailed godwit *islandica*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dunlin *alpina*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Knot, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Pintail, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, autumn passage	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (great crested grebe, cormorant, shelduck,	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				wigeon, gadwall, goldeneye, ringed plover, lapwing, curlew, turnstone)		
UK9012071 and UK11070	Thanet Coast and Sandwich Bay SPA and Ramsar	39.9	45.81	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, but the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Golden plover, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Turnstone, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
UK9009291	Benacre to Easton Bavents SPA	63.6	52.47	Bittern, breeding	OUT	SPA is designated for bitterns in the breeding season. Bitterns breeding in the UK are relatively sedentary (Wright *et al*. 2012) and remain in breeding areas during the non-breeding season. The risk of individuals from the SPA population passing through North Falls is considered negligible so LSE can be ruled out.
				Little tern, breeding	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, but the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Marsh harrier, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
UK9009243 and UK11015	Colne Estuary SPA and Ramsar	53.5	10.98	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Pochard, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ringed plover, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Black-tailed godwit *islandica*, wintering[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (cormorant, mute swan, shelduck, goldeneye, ringed plover, grey plover, sanderling, dunlin, black-tailed godwit, curlew)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009253 and UK11010	Broadland SPA and Ramsar	75.8	63.88	Bittern, breeding[S]	OUT	SPA is designated for bitterns in the breeding season. Bitterns breeding in the UK are relatively sedentary (Wright *et al*. 2012) and remain in breeding areas during the non-breeding season. The risk of individuals from the SPA population passing through North Falls is considered negligible so LSE can be ruled out.
				Marsh harrier, breeding[S]	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Bewick's swan, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ruff, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Gadwall, wintering[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shoveler, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Whooper swan, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Wigeon, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
UK9009246 and UK11026	Foulness SPA and Ramsar	54.0	20.12	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, but the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Sandwich tern, breeding[S]	IN	Potential risk of collision during the breeding and non-breeding (spring and autumn passage) period.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Common tern, breeding[S]	IN	North Falls is beyond the breeding season foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period.
				Avocet, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ringed plover, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Bar-tailed godwit, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Knot, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Oystercatcher, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, wintering[S], passage[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Waterbird assemblage, wintering (shelduck, dunlin, curlew)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9012121 and UK11066	Stodmarsh SPA and Ramsar	57.8	53.84	Gadwall, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Gadwall, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Bittern, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shoveler, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Breeding bird assemblage (great crested grebe, lapwing, mallard, moorhen, reed bunting, common tern, coot, shelduck, redshank, snipe, mute swan, teal, tufted duck, water rail, bearded tit, Cetti's warbler, gadwall, grasshopper warbler, Savi's warbler, sedge warbler, reed warbler)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Waterbird assemblage, wintering (white-fronted goose, wigeon, mallard, pochard, tufted duck, lapwing, snipe)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009242 and UK11018	Dengie SPA and Ramsar	60.7	19.71	Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Knot, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (dunlin, black-tailed godwit, bar-tailed godwit, dunlin, lapwing, red-throated diver, ringed plover, little egret)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9020329	Greater Wash SPA	83.8	78.44	Common tern, breeding	OUT	North Falls is beyond the breeding season foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period.
				Little tern, breeding	OUT	North Falls is beyond the breeding season foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Sandwich tern, breeding	OUT	The Greater Wash SPA protects foraging areas for Sandwich terns breeding within the North Norfolk Coast SPA (Natural England and JNCC 2016). North Falls is beyond the mean maximum foraging +1SD range from the SPA. Breeding Sandwich tern at North Norfolk Coast have been screened in for LSE. The species was recorded in the breeding season during baseline surveys at North Falls, but these individuals are considered to originate from nearer colonies.
				Common scoter, wintering	OUT	The marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. North Falls is far beyond the disturbance distance of the SPA boundary for this species.
				Little gull, wintering	OUT	The marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Red-throated diver, wintering	OUT	The marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. North Falls is far beyond disturbance distance of the SPA boundary for this species.
UK9009245 and UK11007	Blackwater Estuary SPA and Ramsar	64.6	21.18	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, but the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Pochard, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Ringed plover, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Black-tailed godwit *islandica*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dunlin *alpina*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (cormorant, shelduck, gadwall, teal, goldeneye, ringed plover, curlew, redshank)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009141 and UK11001	Abberton Reservoir SPA and Ramsar	66.5	22.79	Cormorant, breeding[S]	OUT	North Falls is beyond the breeding season foraging range from the SPA. Potential connectivity during the non-breeding season but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Coot, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Gadwall, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Goldeneye, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Great crested grebe, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Mute swan, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Pochard, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shoveler, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Teal, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Tufted duck, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Wigeon, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (pintail, smew,	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				cormorant, lapwing, golden plover, ruff)		
UK9009244 and UK11058	Crouch and Roach Estuaries SPA and Ramsar	65.9	30.21	Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (shelduck, shoveler, golden plover, lapwing, dunlin, black-tailed godwit, redshank, avocet, little egret)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009181 and UK11008	Breydon Water SPA and Ramsar	88.3	75.17	Common tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period.
				Avocet, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Bewick's swan, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Golden plover, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Lapwing, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ruff, passage[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Waterbird assemblage, wintering (white-fronted goose, wigeon, shoveler, black-tailed godwit)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9012011 and UK11071	The Swale SPA and Ramsar	65.8	49.78	Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dunlin *alpina*, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, passage[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Breeding bird assemblage[S] (shelduck, mallard, moorhen, coot, lapwing, redshank, reed warbler, reed bunting)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
				Waterbird assemblage, wintering (oystercatcher, ringed plover, redshank, shelduck, wigeon, teal, curlew)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009271	Great Yarmouth North Denes SPA	92.5	83.12	Little tern, breeding	OUT	North Falls is beyond the breeding season foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9009171 and UK11006	Benfleet and Southend Marshes SPA and Ramsar	76.5	44.84	Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dunlin *alpina*, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Knot, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ringed plover, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (Canada goose, shelduck, wigeon, teal, mallard, cormorant, oystercatcher, avocet, golden plover, lapwing, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone, black-headed gull, herring gull, great black-backed gull)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9012021 and UK11069	Thames Estuary and	80.6	51.09	Avocet, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
	Marshes SPA and Ramsar			Black-tailed godwit *islandica*, wintering[S], passage[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dunlin *alpina*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Knot, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ringed plover, passage	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (Bewick's swan, golden plover, ruff, shelduck, teal, pintail, shoveler, tufted duck, pochard)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
	Medway Estuary and	80.6	52.94	Little tern, breeding[S]	OUT	North Falls is beyond mean maximum foraging range +1SD from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9012031 and UK11040	Marshes SPA and Ramsar					breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Avocet, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Avocet, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dark-bellied brent goose, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Dunlin *alpina*, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Grey plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Knot, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Pintail, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Redshank, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ringed plover, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Shelduck, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Breeding bird assemblage (oystercatcher, lapwing, ringed plover, redshank, shelduck, mallard, teal, shoveler, pochard, common tern)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site For common tern, North Falls is beyond the mean maximum +1SD foraging range for the species, from the SPA.
				Waterbird assemblage, wintering (red-throated diver, great crested grebe, cormorant, mallard, teal, shoveler, pochard, oystercatcher, Bewick's swan, hen harrier, merlin, golden plover, short-eared owl, kingfisher)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009201	Breckland SPA	95.1	65.10	Nightjar, breeding	IN	Migratory species which may fly through north falls on passage. Potential risk of collision during migratory flights to and from the site.
				Stone curlew, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Woodlark, breeding	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
UK9012091 and UK11023	Dungeness, Romney Marsh and Rye Bay	85.4	84.30	Avocet, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
	SPA and Ramsar			Common tern, breeding[S]	IN	North Falls is beyond mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Marsh harrier, breeding[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Mediterranean gull, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The site is beyond the mean maximum +1SD breeding season foraging range. There is potential connectivity during the non-breeding (migration) period but migrations to and from the site are likely to result in negligible numbers of birds of this species passing through North Falls due to the distance from the SPA
				Sandwich tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period.
				Aquatic warbler, passage	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Bewick's swan, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Bittern, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Golden plover, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Hen harrier, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Ruff, wintering[S]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Shoveler, wintering	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Mute swan, wintering[R]	IN	Migratory species which may fly through North Falls on passage. Potential risk of collision during migratory flights to and from the site.
				Waterbird assemblage, wintering (European white-fronted goose, wigeon, gadwall, pochard, little grebe, great crested grebe, cormorant, coot, sanderling, whimbrel, common sandpiper, lapwing)	IN	For migratory species which may fly through North Falls on passage, potential risk of collision during flights to and from the site
UK9009031 and UK11048	North Norfolk Coast SPA and Ramsar	139.9	120.76	Avocet, breeding[S]	OUT	Migrations of breeding avocet to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bittern, breeding[S]	OUT	SPA is designated for bitterns in the breeding season. Bitterns breeding in the UK are relatively sedentary (Wright *et al*. 2012) and remain in breeding areas during the non-breeding season. The risk of individuals from the SPA population passing through North Falls is considered negligible so LSE can be ruled out.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Common tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Little tern, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Marsh harrier, breeding[S]	OUT	Migrations of breeding marsh harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Montagu's harrier, breeding[S]	OUT	Migrations of breeding Montagu's harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Sandwich tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Dark-bellied brent goose, wintering	OUT	Migrations of wintering dark-bellied brent geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Knot, wintering	OUT	Migrations of wintering knot to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Pink-footed goose, wintering	OUT	Migrations of wintering pink-footed geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Wigeon, wintering	OUT	Migrations of wintering wigeon to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Pintail, wintering[R]	OUT	Migrations of wintering pintail to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage (European white-fronted goose, shelduck, grey plover, ringed plover, oystercatcher, redshank)	OUT	Migrations of all assemblage species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9008041 and UK11051	Ouse Washes SPA and Ramsar	136.7	100.44	Black-tailed godwit *limosa*, breeding[S]	OUT	Migrations of breeding black-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Gadwall, breeding[S]	OUT	Migrations of breeding gadwall to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Gadwall, wintering[R]	OUT	Migrations of wintering gadwall to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Garganey, breeding[S]	OUT	Migrations of breeding garganey to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Mallard, breeding[S]	OUT	Migrations of breeding mallard to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Ruff, breeding[S]	OUT	Migrations of breeding ruff to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Shoveler, breeding[S]	OUT	Migrations of breeding shoveler to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Shoveler, wintering	OUT	Migrations of wintering shoveler to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Teal, wintering	OUT	Migrations of wintering teal to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bewick's swan, wintering	OUT	Migrations of wintering Bewick's swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Whooper swan, wintering	OUT	Migrations of wintering whooper swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Hen harrier, wintering[S]	OUT	Migrations of wintering hen harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Pintail, wintering	OUT	Migrations of wintering pintail to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Wigeon, wintering	OUT	Migrations of wintering wigeon to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Breeding bird assemblage (oystercatcher, redshank, snipe, lapwing, mute swan, shelduck, teal, pintail, pochard, tufted duck, moorhen, coot)	OUT	Migrations of breeding assemblage species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage, wintering (cormorant, mute swan, pochard, tufted duck, coot)	OUT	Migrations of assemblage species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9008021 and UK11072	The Wash SPA and Ramsar	151.7	122.84	Common tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Bar-tailed godwit, wintering	OUT	Migrations of wintering bar-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bewick's swan, wintering[S]	OUT	Migrations of wintering Bewick's swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Black-tailed godwit *islandica*, wintering[S]	OUT	Migrations of wintering black-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Common scoter, wintering[S]	OUT	Migrations of wintering common scoter to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Curlew, wintering	OUT	Migrations of wintering curlew to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Dark-bellied brent goose, wintering	OUT	Migrations of wintering dark-bellied brent geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Dunlin *alpina*, wintering	OUT	Migrations of wintering dunlin to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Gadwall, wintering[S]	OUT	Migrations of wintering gadwall to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Goldeneye, wintering[S]	OUT	Migrations of wintering goldeneye to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Grey plover, wintering	OUT	Migrations of wintering grey plover to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Knot, wintering	OUT	Migrations of wintering knot to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Oystercatcher, wintering	OUT	Migrations of wintering oystercatcher to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Pink-footed goose, wintering	OUT	North Falls does not lie within the migratory route of pink-footed goose (Wright *et al*. 2012).
				Pintail, wintering	OUT	Migrations of wintering pintail to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Redshank, wintering	OUT	Migrations of wintering redshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Sanderling, wintering	OUT	Migrations of wintering sanderling to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Shelduck, wintering	OUT	Migrations of wintering shelduck to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Turnstone, wintering	OUT	Migrations of wintering turnstone to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Wigeon, wintering[S]	OUT	Migrations of wintering wigeon to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage, wintering (avocet, golden plover, lapwing, ringed plover, whimbrel, little grebe, cormorant, whooper swan, white-fronted goose, teal, mallard, eider, black-headed gull, lesser black-backed gull, herring gull, great black-backed gull)	OUT	Migrations of assemblage species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9008031	Nene Washes SPA	153.6	118.50	Black-tailed godwit *limosa*, breeding	OUT	Migrations of breeding black-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Garganey, breeding	OUT	Migrations of breeding garganey to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Gadwall, breeding	OUT	Migrations of breeding gadwall to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Gadwall, wintering	OUT	Migrations of wintering gadwall to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Shoveler, breeding	OUT	Migrations of breeding shoveler to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Shoveler, wintering	OUT	Migrations of wintering shoveler to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Pintail, wintering	OUT	Migrations of wintering pintail to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Teal, wintering	OUT	Migrations of wintering teal to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Wigeon, wintering	OUT	Migrations of wintering wigeon to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bewick's swan, wintering	OUT	Migrations of wintering Bewick's swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9008022 and UK11027	Gibraltar Point SPA and Ramsar	178.8	153.48	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Bar-tailed godwit, wintering	OUT	Migrations of wintering black-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Grey plover, wintering	OUT	Migrations of wintering grey plover to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Sanderling, wintering	OUT	Migrations of wintering sanderling to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Dark-bellied brent goose, wintering[R]	OUT	Migrations of wintering dark-bellied brent geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9006111 and UK11031	Humber Estuary SPA and Ramsar	207.2	183.69	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Marsh harrier, breeding[S]	OUT	Migrations of breeding marsh harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Avocet, breeding[S]	OUT	Migrations of breeding avocet to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Avocet, wintering[S]	OUT	Migrations of wintering avocet to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bittern, breeding[S]	OUT	SPA is designated for bitterns in the breeding season. Bitterns breeding in the UK are relatively sedentary (Wright *et al*. 2012) and remain in breeding areas during the non-breeding season. The risk of individuals from the SPA population passing through North Falls is considered negligible so LSE can be ruled out.
				Bittern, wintering[S]	OUT	Migrations of wintering bittern to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bar-tailed godwit, wintering	OUT	Migrations of wintering bar-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Black-tailed godwit *islandica*, wintering	OUT	Migrations of wintering black-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Black-tailed godwit, passage	OUT	Migrations of black-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Dunlin *alpina*, wintering	OUT	Migrations of wintering dunlin to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Dunlin, passage	OUT	Migrations of dunlin to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Golden plover, wintering	OUT	Migrations of wintering golden plover to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Golden plover, passage[R]	OUT	Migrations of golden plover to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Hen harrier, wintering[S]	OUT	Migrations of wintering hen harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Knot, wintering	OUT	Migrations of wintering knot to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Knot, passage	OUT	Migrations of knot to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Redshank, wintering	OUT	Migrations of wintering redshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Redshank, passage	OUT	Migrations of redshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Ruff, passage[S]	OUT	Migrations of ruff to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Shelduck, wintering	OUT	Migrations of wintering shelduck to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage, wintering (dark-bellied brent goose, wigeon, teal, mallard, pochard, scaup, goldeneye, oystercatcher, ringed plover, grey plover, lapwing, sanderling, whimbrel, curlew, greenshank, turnstone)	OUT	Migrations of assemblage species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9011011	Chichester & Langstone Harbours SPA	207.2	179.13	Sandwich tern, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Individuals from the SPA breeding population may pass through North Falls during autumn and spring migration (UK North Sea and channel BDMPS). Screened in for collision risk.
				Common tern, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Individuals from the SPA breeding population may pass through North Falls during autumn and spring migration (UK North Sea and channel BDMPS). Screened in for collision risk.
				Little tern, breeding	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range. There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Bar-tailed godwit, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Curlew, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Dark-bellied brent goose, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Dunlin, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Grey plover, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Pintail, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Red-breasted merganser, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Redshank, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Ringed plover, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Sanderling, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Shelduck, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Shoveler, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Teal, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Turnstone, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Wigeon, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Waterbird assemblage, wintering (no additional species)	OUT	Migrations to and from the site are likely to result in negligible numbers of assemblage species passing through north falls due to the distance from the SPA.
UK9011061 UK11063	Solent & Southampton Water SPA and Ramsar	230.7	200.10	Sandwich tern, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Individuals from the SPA breeding population may pass through North Falls during Autumn and Spring migration (UK North Sea and Channel BDMPS). Screened in for collision risk.
				Common tern, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Individuals from the SPA breeding population may pass through North Falls during autumn and spring migration (UK North Sea and Channel BDMPS). Screened in for collision risk.
				Roseate tern, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. There is potential connectivity during the non-breeding (migration) period but migrations to and from the site are likely to result in negligible numbers of birds of this species passing through North Falls due to the distance from the SPA.
				Little tern, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Mediterranean gull, breeding	OUT	The site is beyond the mean maximum +1SD breeding season foraging range. There is potential connectivity during the non-breeding (migration) period but migrations to and from the site are likely to result in negligible numbers of birds of this species passing through North Falls due to the distance from the SPA
				Black-tailed godwit, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Dark-bellied brent goose, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Ringed plover, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Teal, wintering	OUT	Migrations to and from the site are likely to result in negligible numbers of birds of this species passing through north falls due to the distance from the SPA.
				Waterbird assemblage, wintering (no additional species)	OUT	Migrations to and from the site are likely to result in negligible numbers of assemblage passing through North Falls due to the distance from the SPA.
UK9006171	Hornsea Mere SPA	273.6	250.36	Gadwall, wintering	OUT	Migrations of wintering gadwall to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Mute swan, wintering	OUT	Migrations of wintering mute swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9006101		288.4	266.23	Gannet, breeding	IN	Potential risk of collision and operational displacement during the breeding and non-breeding seasons (UK North Sea and Channel

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
	Flamborough and Filey Coast SPA					BDMPS). North Falls overlaps with the mean maximum +1SD foraging range from the SPA, although there is no evidence from tracking studies that gannets breeding at the SPA travel as far as the array area. Construction disturbance / displacement is not screened in given the relatively short-term nature of this effect and the extensive distances over which the species ranges, during the breeding and non-breeding seasons, and its flexibility of habitat use.
				Guillemot, breeding	IN	Potential risk of operational displacement during the non-breeding season (UK North Sea and Channel BDMPS). The site is beyond the mean maximum +1SD breeding season foraging range for the species. Construction disturbance / displacement is not screened in given the relatively short-term nature of this effect, the lack of breeding season connectivity and the extensive distances over which guillemots can potentially range during the non-breeding season.
				Kittiwake, breeding	IN	Potential collision risk during the breeding and non-breeding seasons (UK North Sea BDMPS). The site is within the mean maximum +1SD breeding season foraging range.
				Razorbill, breeding	IN	Potential risk of operational displacement during the breeding and non-breeding seasons (UK North Sea and Channel BDMPS). The site is beyond the breeding season foraging range +1SD. Construction disturbance / displacement is not screened in given the relatively short-term nature of this effect, the lack of breeding season connectivity and the extensive distances over which razorbills can potentially range during the non-breeding season.
				Seabird assemblage, breeding (puffin, herring gull, shag, cormorant, fulmar)	IN	The assemblage is screened in, given that LSE from in combination collision / operational displacement cannot be ruled out for some named component species during the breeding and non-breeding season.
UK9006061 and UK11068	Teesmouth and Cleveland	368.2	343.87	Avocet, breeding[S]	OUT	Migrations of breeding avocet to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
	Coast SPA and Ramsar			Common tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum foraging +1SD range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, but the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Knot, wintering	OUT	Migrations of wintering knot to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Redshank, wintering	OUT	Migrations of wintering redshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Ruff, passage[S]	OUT	Migrations of ruff to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Sandwich tern, passage[S]	OUT	Migrations of Sandwich tern to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage, wintering (gadwall, shoveler, sanderling, wigeon, lapwing, herring gull, black-headed gull)	OUT	Migrations of assemblage species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9006131 and UK11049	Northumbria Coast SPA and Ramsar	388.9	363.98	Arctic tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls, however given the known migration pattern of this species individuals may pass through

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Little tern, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Purple sandpiper, wintering	OUT	Migrations of wintering purple sandpiper to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Turnstone, wintering	OUT	Migrations of wintering turnstone to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9020325	Northumberland Marine SPA	431.5	407.25	Arctic tern, breeding	OUT	Marine SPA protects offshore foraging areas for Arctic tern breeding at the Farne Islands, Northumbria Coast and Coquet Island SPAs (Natural England 2015), North Falls is beyond the mean maximum +1SD foraging range from the SPA. Arctic tern has been screened in for LSE at the three associated breeding colony SPAs.
				Common tern, breeding	OUT	Marine SPA protects offshore foraging areas for common tern breeding at the Farne Islands and Coquet Island SPAs (Natural England 2015). North Falls is beyond the mean maximum foraging range +1SD from the SPA. Common tern has been screened in for LSE at the two associated breeding colony SPAs.
				Guillemot, breeding	OUT	Marine SPA protects offshore foraging areas for guillemot breeding at the Farne Islands SPA, North Falls is beyond the mean maximum foraging range +1SD from the SPA. Guillemot has been screened in for LSE at the associated breeding colony SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Little tern, breeding	OUT	Marine SPA protects offshore foraging areas for little tern breeding at the Northumbria Coast and Lindisfarne SPAs. North Falls is beyond the mean maximum foraging range 1SD from the SPA. The species was not recorded in the survey area during the baseline surveys. Little tern has been considered for LSE for the associated breeding population SPAs.
				Puffin, breeding	OUT	Marine SPA protects offshore foraging areas for puffins breeding at the Farne Islands and Coquet Islands SPAs (assemblage component). North Falls is beyond the mean maximum foraging range + 1SD from the SPA. Puffin has been considered for LSE for the associated breeding population SPAs.
				Roseate tern, breeding	OUT	Marine SPA protects offshore foraging areas for puffins breeding at the Coquet Islands SPA (the species is also a qualifying feature of the Lindisfarne and Farne Islands SPAs, but has not been recorded breeding since respectively 1991 and 2009) (Natural England 2015). North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Roseate tern has been considered for LSE for the associated breeding population SPAs.
				Sandwich tern, breeding	OUT	Marine SPA protects offshore foraging areas for Sandwich tern breeding at the Farne Islands SPA, North Falls is beyond the mean maximum foraging range +1SD from the SPA. Sandwich tern has been screened in for LSE at the associated breeding colony SPAs.
				Seabird assemblage, breeding (cormorant, shag, black-headed gull, kittiwake	OUT	Marine SPA protects offshore foraging areas for SPA assemblage species breeding at the Farne Islands and Coquet Islands SPA, Assemblage species have been considered for LSE at the associated breeding colony SPAs.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9006031	Coquet Island SPA	455.3	431.96	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Common tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Roseate tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. However, given the known migration pattern, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) period (East Coast and Channel BDMPS).
				Sandwich tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (puffin, black-headed gull)	OUT	The site is beyond the breeding season foraging range for all assemblage species. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9006021	Farne Islands SPA	485.6	462.98	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Common tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Guillemot, breeding	IN	The site is beyond the breeding season mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Roseate tern, breeding	OUT	North Falls is beyond the maximum foraging range from the SPA. The species has not been recorded breeding since 2009 (Natural England 2015).
				Sandwich tern, breeding	IN	North Falls is beyond the maximum foraging +1SD range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (puffin, cormorant, shag, kittiwake)	OUT	North Falls is beyond the maximum foraging +1SD range from the SPA It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9006011	Lindisfarne SPA and Ramsar	488.8	465.51	Bar-tailed godwit, non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Common scoter[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Dunlin[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Eider[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Golden plover[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Grey plover[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Greylag goose, non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Light-bellied brent goose, non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Little tern[S], breeding	OUT	North Falls is beyond the mean maximum foraging +1SD range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Long-tailed duck[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Red-breasted merganser[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Redshank, non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Ringed plover, non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Roseate tern[S], breeding	OUT	North Falls is beyond the maximum foraging range from the SPA. The species has not been recorded breeding since 2009 (Natural England 2015).
				Sanderling[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Shelduck[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Whooper swan[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Wigeon[S], non-breeding	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA
				Waterbird assemblage, wintering (no additional species)	OUT	Migrations to and from the site are likely to result in negligible numbers of this species passing through North Falls due to the distance from the SPA

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9004271	St Abb's Head to Fast Castle SPA	528.0	504.52	Seabird assemblage, breeding (guillemot, razorbill, kittiwake, herring gull, shag)	OUT	The site is beyond the breeding season foraging range for all assemblage species. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore, the assemblage is screened out.
UK9020316	Outer Firth of Forth and St Andrews Bay Complex SPA	529.6	506.17	Arctic tern, breeding	OUT	Marine SPA protects offshore foraging areas for Arctic tern breeding at the Forth islands SPA. North Falls is beyond the maximum +1SD foraging range from the SPA. Arctic tern has been screened in for LSE at the associated breeding colony SPA.
				Common tern, breeding	OUT	Marine SPA protects offshore foraging areas for common tern breeding at the Forth islands SPA. North Falls is beyond the maximum +1SD foraging range from the SPA. Common tern has been screened in for LSE at the associated breeding colony SPA.
				Gannet, breeding	OUT	Marine SPA protects offshore foraging areas for gannet breeding at the Forth Islands SPA (Bass Rock). North Falls is beyond the mean maximum +1SD foraging range of gannets from the SPA boundary. Gannet has been screened in for LSE at the associated breeding colony SPA.
				Shag, breeding	OUT	Marine SPA protects offshore foraging areas for shag breeding at the Forth Islands SPA. North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded during the baseline surveys. Shag has been considered for LSE at the associated breeding colony SPA.
				Eider, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Little gull, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Red-throated diver, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Slavonian grebe, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Seabird assemblage, breeding (puffin, kittiwake, herring gull, Manx shearwater, guillemot)	OUT	North Falls is beyond the breeding season foraging range for all assemblage species except Manx shearwater – which is included based on a concentration of birds during the breeding season, likely to be a mixture of breeding adults from distant colonies, sabbatical or pre-breeding age birds and possibly failed breeders (JNCC & SNH 2016). It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore, the assemblage is screened out.
				Seabird assemblage, wintering (black-headed gull, common gull, herring gull, kittiwake, guillemot, shag, razorbill)	OUT	The marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Waterfowl assemblage, wintering (long-tailed duck, common scoter, velvet scoter, goldeneye, red-breasted merganser)	OUT	Migrations of all assemblage wintering species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9004171	Forth Islands SPA	559.6	534.99	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Common tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Gannet, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision and displacement during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Lesser black-backed gull, breeding	IN	The site is beyond the breeding season mean maximum +1SD foraging range. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Puffin, breeding	OUT	North Falls is beyond the mean maximum + 1SD breeding season foraging range. The mean peak abundance of puffin within the North Falls Array Area + 2 km buffer was also 2 individuals in the breeding season and less than 1 individual in the non-breeding season, during baseline digital aerial surveys. There is therefore also considered to be no potential connectivity or risk of displacement during the non-breeding period (UK North Sea Waters BDMPS)

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Roseate tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. However, given the known migration pattern, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (East Coast and Channel BDMPS).
				Sandwich tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Shag, breeding	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. North Falls is outside the non-breeding season BDMPS (NW North Sea) for the SPA population.
				Seabird assemblage, breeding (razorbill, guillemot, kittiwake, herring gull, cormorant)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9004451	Imperial Dock Lock, Leith SPA	573.3	546.56	Common tern, breeding	IN	North Falls is beyond the maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
UK9004121 and UK13018	Firth of Tay and Eden Estuary SPA and Ramsar	593.1	568.82	Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. There is potential connectivity with North Falls during the non-breeding (migration) period, although the species does not fly regularly at collision height (Johnston *et al* 2014a&b).
				Marsh harrier, breeding[S]	OUT	Migrations of breeding marsh harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Bar-tailed godwit, wintering	OUT	Migrations of wintering bar-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Greylag goose, wintering	OUT	Migrations of wintering greylag geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Pink-footed goose, wintering	OUT	North Falls does not lie within the migratory route of pink-footed goose (Wright *et al*. 2012).
				Redshank, wintering	OUT	Migrations of wintering redshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterfowl assemblage, wintering (black-tailed godwit, common scoter, cormorant, dunlin *alpina*, eider, goldeneye, goosander, grey plover, long-tailed duck, oystercatcher, red-breasted merganser, sanderling, shelduck, velvet scoter)	OUT	Migrations of all assemblage wintering species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9002271	Fowlsheugh SPA	626.5	605.23	Guillemot, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding season (UK North Sea Waters BDMPS)
				Kittiwake, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea Waters).
				Seabird assemblage, breeding (fulmar, herring gull, razorbill)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						breeding season for LSE to occur. Therefore, the assemblage is screened out.
UK9002221 and UK13061	Ythan Estuary, Sands of Forvie and Meikle Loch (extension) SPA and Ramsar	649.3	628.77	Common tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Little tern, breeding[S]	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. Potential connectivity during the non-breeding (migration) periods but the species does not regularly fly at collision risk height (Johnston *et al*. 2014a & b).
				Sandwich tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Pink-footed goose, wintering	OUT	North Falls does not lie within the migratory route of pink-footed goose (Wright *et al*. 2012).
				Waterfowl assemblage, wintering (eider, lapwing, redshank)	OUT	Migrations of all assemblage wintering species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9002491	Buchan Ness to Collieston Coast SPA	663.6	643.70	Seabird assemblage, breeding (fulmar, guillemot, herring gull, kittiwake, shag)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur.
UK9002211 and UK13041	Loch of Strathbeg SPA and Ramsar	691.5	672.18	Sandwich tern, breeding[S]	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Greylag goose, wintering[S]	OUT	Migrations of wintering greylag geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Pink-footed goose, wintering	OUT	North Falls does not lie within the migratory route of pink-footed goose (Wright *et al*. 2012).
				Svalbard barnacle goose, wintering	OUT	Migrations of wintering barnacle geese to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Whooper swan, wintering	OUT	Migrations of wintering whooper swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterfowl assemblage, wintering (teal, goldeneye)	OUT	Migrations of all assemblage wintering species to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9002471	Troup, Pennan and Lion's Heads SPA	705.6	685.69	Guillemot, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (fulmar, herring gull, kittiwake, razorbill)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur.
UK9001624	Inner Moray Firth SPA and Ramsar	745.5	721.02	Common tern, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Osprey, breeding	OUT	Migrations of breeding osprey to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Bar-tailed godwit, wintering	OUT	Migrations of wintering bar-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Greylag goose, wintering	OUT	Migrations of wintering greylag goose to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Red-breasted merganser, wintering	OUT	Migrations of wintering red-breasted merganser to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Redshank, wintering	OUT	Migrations of wintering redshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage, wintering (cormorant, curlew, goldeneye, goosander, oystercatcher, scaup, teal, wigeon)	OUT	Migrations of wintering waterbirds to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9001623	Cromarty Firth SPA	758.9	735.34	Common tern, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Osprey, breeding	OUT	Migrations of breeding osprey to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Whooper swan, wintering	OUT	Migrations of wintering whooper swan to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Bar-tailed godwit, wintering	OUT	Migrations of wintering bar-tailed godwit to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Greylag goose, wintering	OUT	Migrations of wintering greylag goose to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Waterbird assemblage, wintering (curlew, dunlin, knot, oystercatcher, pintail, red-breasted merganser, redshank, scaup, wigeon)	OUT	Migrations of wintering waterbirds to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9001182	East Caithness Cliffs SPA	786.9	765.14	Guillemot, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Herring gull, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).
				Kittiwake, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea BDMPS).
				Peregrine, breeding	OUT	Movements/migrations of peregrine to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Razorbill, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Shag, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. North Falls is outside the non-breeding season BDMPS (NW North Sea) for the SPA population.
				Seabird assemblage, breeding (cormorant,	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				fulmar, great black-backed gull)		unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9001151 and UK13003	Caithness and Sutherland Peatlands SPA and Ramsar	796.5	774.12	Red-throated diver, breeding[S]	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).
				Black-throated diver, breeding[S]	OUT	The site is beyond the mean maximum +1SD breeding season foraging range. Black-throated divers were not recorded during baseline surveys at North Falls.
				Hen harrier, breeding[S]	OUT	Migrations of breeding hen harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Golden eagle, breeding[S]	OUT	The site is beyond the breeding season foraging range and is not suitable habitat for the species.
				Merlin, breeding[S]	OUT	Migrations of breeding merlin to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Golden plover, breeding[S]	OUT	Migrations of breeding golden plover to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Wood sandpiper, breeding[S]	OUT	Migrations of breeding wood sandpiper to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Short-eared owl, breeding[S]	OUT	Migrations of breeding short-eared owl to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Dunlin *schinzii*, breeding	OUT	Migrations of breeding dunlin to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Common scoter, breeding[S]	OUT	Migrations of breeding common scoter to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Greenshank, breeding[S]	OUT	Migrations of breeding greenshank to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Wigeon, breeding[S]	OUT	Migrations of breeding wigeon to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9001181	North Caithness Cliffs SPA	817.5	797.45	Guillemot, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Peregrine, breeding	OUT	Movements/migrations of breeding peregrine to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Seabird assemblage, breeding (fulmar, kittiwake, puffin, razorbill)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur.
UK9001131	Pentland Firth Islands SPA	826.4	806.62	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9020321	Scapa Flow SPA	828.4	816.97	Red-throated diver, breeding	OUT	Marine SPA which protects offshore foraging areas for breeding red-throated divers. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Black-throated diver, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Black-throated divers were not recorded during baseline surveys at North Falls.
				Eider, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Goldeneye, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Goldeneye were not recorded at North Falls during the non-breeding season.
				Great northern diver, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Great northern divers were not recorded during baseline surveys at North Falls.
				Long-tailed duck, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Long-tailed duck were not recorded during baseline surveys at North Falls.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Red-breasted merganser, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Red-breasted merganser were not recorded during baseline surveys at North Falls.
				Shag, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Shags were not recorded during baseline surveys at North Falls.
				Slavonian grebe, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Slavonian grebes were not recorded during baseline surveys at North Falls.
UK9002151	Copinsay SPA	839.0	820.00	Seabird assemblage, breeding (fulmar, great black-backed gull, kittiwake, guillemot)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002141	Hoy SPA	841.9	821.64	Great skua, breeding	IN	Although North Falls is within the mean maximum +1SD breeding season foraging range, based on tracking studies (Wade *et al*. 2012, 2014) it is considered highly unlikely that breeding great skuas from the SPA would travel as far as North Falls. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Peregrine, breeding	OUT	Migrations of breeding peregrine to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Red-throated diver, breeding	IN	North Falls site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).
				Seabird assemblage, breeding (Arctic skua, fulmar, great black-backed gull, kittiwake, guillemot, puffin)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002381	Auskerry SPA	853.4	834.65	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Storm petrel breeding	OUT	North Falls is beyond the mean maximum foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. At sea surveys indicate that storm petrels occur at low densities or are absent from the southern North Sea (Stone *et al*. 1995) so that numbers passing through North Falls outside the breeding season are likely to be negligible.
UK9002311	Orkney Mainland Moors SPA	856.6	836.98	Hen harrier, breeding	OUT	Migrations of breeding hen harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Hen harrier, wintering	OUT	Migrations of wintering hen harrier to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Short-eared owl, breeding	OUT	Migrations of breeding short-eared owl to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Red-throated diver, breeding	IN	North Falls is beyond the breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).
UK9002431	Calf of Eday SPA	875.4	856.73	Seabird assemblage, breeding (cormorant, fulmar, great black-backed gull, kittiwake, guillemot)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002371	Rousay SPA	876.0	856.77	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (Arctic skua, fulmar, guillemot, kittiwake)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002121		877.8	857.88	Guillemot, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						during the non-breeding period (UK North Sea and Channel BDMPS).
	Marwick Head SPA			Seabird assemblage, breeding (kittiwake)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002091	Fair Isle SPA	883.9	867.43	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitively identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Fair Isle wren, breeding	OUT	North Falls is well beyond the mean maximum +1SD breeding season foraging range and known movements of this largely sedentary species (Wright *et al*. 2012, Robinson *et al.* 2020).
				Guillemot, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (Arctic skua, great skua, fulmar, gannet, kittiwake, puffin, razorbill, shag)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species except fulmar and great skua. Based on tracking studies (Wade *et al*. 2014) it is considered highly unlikely that breeding great skuas from the SPA would travel as far as North Falls. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9002101	West Westray SPA	886.6	867.44	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Guillemot, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (Arctic skua, fulmar, kittiwake, razorbill)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002111	Papa Westray (North Hill and Holm) SPA	892.9	874.04	Arctic skua, breeding	IN	North Falls is beyond the maximum foraging range from the SPA. Potential connectivity and collision risk during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitively identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
UK9002511	Sumburgh Head SPA	916.2	900.62	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitively identified records of Arctic tern during baseline surveys at North Falls. However, given the known

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (fulmar, guillemot, kittiwake)	OUT	North Falls is beyond the mean maximum +1SD breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9020331	Seas off Foula SPA	924.5	908.13	Great skua, breeding	OUT	Marine SPA which protects offshore foraging areas used by breeding great skuas. Although North Falls is just within the mean maximum +1SD breeding season foraging range, based on tracking studies (Wade *et al*. 2012, 2014) it is considered highly unlikely that breeding great skuas from the SPA would travel as far as North Falls. .
				Seabird assemblage, breeding (fulmar, Arctic skua, guillemot, puffin)	OUT	North Falls is beyond mean maximum +1SD foraging range of all assemblage species from the SPA except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
				Seabird assemblage, wintering (fulmar, great skua, guillemot, great skua)	OUT	Because of the distance from the SPA, there is no connectivity (i.e. while birds are using the SPA they would not be expected to travel as far as North Falls).
UK9002361	Mousa SPA	931.8	916.94	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Storm petrel, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. At sea surveys indicate that storm petrels occur at low densities or are absent from the southern North Sea (Stone *et al*. 1995) so that numbers passing through North Falls outside the breeding season are likely to be negligible.
UK9002081	Noss SPA	943.2	928.27	Gannet, breeding	IN	North Falls is beyond the breeding season mean maximum +1SD foraging range. Potential connectivity and risk of collision and displacement during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Great skua, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).
				Guillemot, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Seabird assemblage, breeding (fulmar, kittiwake, puffin)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore, the assemblage is screened out.
UK9020311	East Mainland Coast, Shetland SPA	950.9	935.76	Red-throated diver, breeding	OUT	Marine SPA, which protects offshore foraging areas for red-throated divers. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity.
				Great northern diver, wintering	OUT	Great northern divers were not recorded during baseline surveys for North Falls. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Great northern divers were not recorded during baseline surveys at North Falls.

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
				Slavonian grebe, wintering	OUT	This marine SPA boundary encompasses core areas used during the non-breeding season. Given the extensive distance between the SPA and North Falls it is considered that there is no connectivity. Slavonian grebes were not recorded during baseline surveys at North Falls.
UK9002061	Foula SPA	955.3	938.68	Arctic tern, breeding	IN	North Falls is beyond the mean maximum + 1SD breeding season foraging range. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Great skua, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).
				Guillemot, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Leach's petrel, breeding	OUT	North Falls is beyond mean breeding season foraging range. Leach's petrel was not recorded during baseline surveys at North Falls. At sea surveys indicate that Leach's petrels occur at low densities or are absent from the southern North Sea (Stone *et al*. 1995) so that numbers passing through North Falls outside the breeding season are likely to be negligible.
				Puffin, breeding	OUT	North Falls is beyond the mean maximum + 1SD breeding season foraging range. The mean peak abundance of puffin within the North Falls Array Area + 2 km buffer was also 2 individuals in the breeding season and less than 1 individual in the non-breeding season, during baseline digital aerial surveys. There is therefore also considered to be no potential connectivity or risk of

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						displacement during the non-breeding period (UK North Sea Waters BDMPS)
				Red-throated diver, breeding	IN	North Falls is beyond the breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).
				Shag, breeding	OUT	North Falls is beyond the mean maximum +1SD foraging range from the SPA. The species was not recorded in the survey area during the baseline surveys. North Falls is outside the non-breeding season BDMPS (NW North Sea) for the SPA population.
				Seabird assemblage, breeding (kittiwake, razorbill, fulmar, Arctic skua)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.
UK9002051	Papa Stour SPA	975.4	959.38	Arctic tern, breeding	IN	North Falls is beyond the mean maximum +1SD foraging range from the SPA. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Ringed plover, breeding	OUT	Migrations of breeding ringed plover to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
UK9002031	Fetlar SPA	987.5	973.26	Arctic tern, breeding	IN	North Falls is beyond mean maximum +1SD breeding season foraging range. While some 'commic' (common or Arctic) terns were recorded, there were no definitely identified records of Arctic tern during baseline surveys at North Falls. However, given the known migration pattern of this species, individuals may pass through North Falls. There is potential connectivity and risk of

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
						collision during the non-breeding (migration) periods (UK North Sea and Channel BDMPS).
				Dunlin, breeding	OUT	Migrations of breeding dunlin to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Great skua, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).
				Red-necked phalarope, breeding	OUT	Migrations of breeding red-necked phalarope to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Whimbrel, breeding	OUT	Migrations of breeding whimbrel to and from the site are likely to result in negligible numbers passing through North Falls due to the distance from SPA.
				Seabird assemblage, breeding (Arctic skua, fulmar)	OUT	North Falls is beyond the breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore, the assemblage is screened out.
UK9002941	Otterswick and Graveland SPA	989.9	975.01	Red-throated diver, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).
UK9002041 and UK13054	Ronas Hill – North Roe and Tingon SPA and Ramsar	992.0	976.60	Great skua, breeding[S]	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).
				Red-throated diver, breeding	IN	The site is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).

Site Code	Site	Nearest Distance (km)		Qualifying Feature[1]	Screening Decision	Rationale
		To Array	To cable corridor			
UK9002011	Hermaness, Saxa Vord and Valla Field SPA	1008.8	994.33	Gannet, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision and displacement during the non-breeding (migration) period (UK North Sea and Channel BDMPS).
				Great skua, breeding	IN	North Falls is beyond the mean maximum +1SD breeding season foraging range. Potential connectivity and risk of collision during the non-breeding period (UK North Sea and Channel BDMPS).
				Puffin, breeding	OUT	North Falls is beyond the mean maximum + 1SD breeding season foraging range. The mean peak abundance of puffin within the North Falls Array Area + 2 km buffer was also 2 individuals in the breeding season and less than 1 individual in the non-breeding season, during baseline digital aerial surveys. There is therefore also considered to be no potential connectivity or risk of displacement during the non-breeding period (UK North Sea and Channel BDMPS).
				Red-throated diver, breeding	IN	North Falls is beyond the mean maximum + 1SD breeding season foraging range. Potential connectivity and risk of displacement/barrier effect during the non-breeding (migration) periods (UK North Sea BDMPS).
				Seabird assemblage, breeding (fulmar, shag, guillemot, kittiwake)	OUT	North Falls is beyond the mean maximum + 1SD breeding season foraging range of all named assemblage species except fulmar. It is considered very unlikely that sufficient numbers of the seabird assemblage would be present at North Falls during the non-breeding season for LSE to occur. Therefore the assemblage is screened out.

1. The SPA qualifying feature and the relevant season for which an SPA is designated, based on SPA citations / conservation objectives and Ramsar Information sheets from the relevant Statutory Nature Conservation Body (e.g. Natural England designated sites view). Where a site is both an SPA and a Ramsar site, no superscript indicates species is a qualifying feature of both; superscript^{R} qualifying species of Ramsar site but not SPA, superscript^{S} qualifying species of SPA but not Ramsar site. For bird assemblages of SPAs, species identified as key components of the assemblage are listed in brackets if they are not qualifying features in their own right.

Table 8.5 North Falls Offshore Wind Farm: Screening outcome for Transboundary Sites with offshore ornithology features

Site Code	Site	Country	Nearest Distance (km) to Array	Qualifying Features[1]	Screening Decision	Rationale[2]
FR3112006	Bancs des Flandres SPA	France	37.1	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
BEMNZ0002	SBZ 1 / ZPS 1 SPA	Belgium	64.0	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
BEMNZ0003	SBZ 2 / ZPS 2 SPA	Belgium	68.7	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
FR3110085	Cap Gris-Nez	France	70.4	Non-breeding seabirds and waterfowl	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
FR3110039	Platier d'Oye	France	71.0	Breeding Sandwich tern, breeding and non-breeding waterbirds	OUT	North Falls is beyond breeding season foraging range for Sandwich tern. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
BEMNZ0004	SBZ 3 / ZPS 3 SPA	Belgium	82.2	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
NL9802025	Veerse Meer	Netherlands	111.0	Breeding seabirds, lesser black-backed gull, cormorant, breeding and non-breeding waterbirds	OUT	North Falls is beyond breeding season foraging range for cormorant. Although North Falls is potentially within foraging range for lesser black-backed gulls, tracking studies have shown that birds breeding on the Netherlands coast do not travel into UK offshore waters (Camphuysen 1995, 2013;

Site Code	Site	Country	Nearest Distance (km) to Array	Qualifying Features[1]	Screening Decision	Rationale[2]
						Camphuysen *et al*. 2015). Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
NL2021168	Bruine Bank SPA	Netherlands	125.2	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
FR3110038	Estuaire de la Canche	France	119.9	Non-breeding seabirds, waterfowl and raptors	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
FR2502020	Littoral Seino-Marin SPA	France	179.0	Breeding seabirds (Fulmar, Herring gull, Great black-backed gull, Cormorant, Shag, Kittiwake) Non-breeding seabirds Non-breeding waterfowl Breeding and non-breeding raptors	OUT	North Falls is beyond foraging range of breeding seabird species except fulmar. Given the oceanic habitat preferences of fulmar (Edwards 2015) it is considered highly unlikely that substantial numbers of breeding birds from the SPA occur at North Falls during the breeding season. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
NL9802001	Noordzeekustzone	Netherlands	196.7	Breeding little tern Non-breeding seabirds Breeding and non-breeding waterfowl	OUT	North Falls is beyond foraging range of breeding seabird species. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).

Site Code	Site	Country	Nearest Distance (km) to Array	Qualifying Features[1]	Screening Decision	Rationale[2]
NL9801001	Waddenzee	Netherlands	226.0	Breeding seabirds (Lesser black-backed gull, Little tern, Common tern, Arctic tern, Sandwich tern) Non-breeding seabirds Breeding and non-breeding waterfowl Breeding and non-breeding raptors	OUT	North Falls is beyond foraging range of breeding seabird species. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
NL3009008	Duinen en Lage Land Texel	Netherlands	229.0	Breeding lesser black-backed gull. Breeding and non-breeding raptors, waterbirds and passerines.	OUT	North Falls is beyond foraging range of breeding lesser black-backed gull.. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
NL2016166	Friese Front SPA	Netherlands	236.6	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
FR2510099	Falaise du Bessin Occidental	France	316.9	Breeding seabirds (Fulmar, Herring gull, Lesser black-backed gull, Kittiwake) Non-breeding seabirds Non-breeding raptors	OUT	North Falls is beyond foraging range of breeding seabird species, except fulmar. Given the oceanic habitat preferences of fulmar (Edwards 2015) it is considered highly unlikely that substantial numbers of breeding birds from the SPA occur at North Falls during the breeding season. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
DE2104301	Borkum-Riffgrund SPA	Germany	364.0	Non-breeding seabirds	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.

Site Code	Site	Country	Nearest Distance (km) to Array	Qualifying Features[1]	Screening Decision	Rationale[2]
FR2512005	Nord Bretagne DO SPA	France	406.4	Marine SPA for concentrations of seabirds at sea	OUT	Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls relative to the size of the BDMPS populations.
FR5310095	Cap d'Erquy-Cap Fréhel	France	421.3	Breeding seabirds (Razorbill, Fulmar, Herring gull, Lesser black-backed gull, Great black-backed gull, Shag, Kittiwake, Guillemot) Non-breeding seabirds Breeding and non-breeding waterfowl	OUT	North Falls is beyond foraging range of breeding seabird species, except fulmar. Given the oceanic habitat preferences of fulmar (Edwards 2015) it is considered highly unlikely that substantial numbers of breeding birds from the SPA occur at North Falls during the breeding season. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
FR5310070	Tregor Goëlo	France	452.8	Breeding seabirds (Fulmar, Herring gull, Lesser black-backed gull, Great black-backed gull, Cormorant, Shag, Little tern, Common tern, Sandwich tern) Non-breeding seabirds Breeding and non-breeding waterfowl	OUT	North Falls is beyond foraging range of breeding seabird species, except fulmar. Given the oceanic habitat preferences of fulmar (Edwards 2015) it is considered highly unlikely that substantial numbers of breeding birds from the SPA occur at North Falls during the breeding season. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
DE1813491	Seevogelschutzgebiet Helgoland	Germany	471.5	Breeding seabirds (Razorbill, Fulmar, Kittiwake, Gannet, Guillemot) Non-breeding seabirds	OUT	North Falls is beyond foraging range of breeding seabird species, except fulmar. Given the oceanic habitat preferences of fulmar (Edwards 2015) it is considered highly unlikely that substantial numbers of breeding birds from the SPA occur at North Falls during the breeding season. Migrations of birds from this SPA are likely to result in negligible numbers passing

Site Code	Site	Country	Nearest Distance (km) to Array	Qualifying Features[1]	Screening Decision	Rationale[2]
						through North Falls relative to the size of the BDMPS populations.
FR5310011	Côte de Granit Rose-Sept Iles	France	469.1	Breeding seabirds (Razorbill, Puffin, Fulmar, Storm petrel, Herring gull, Lesser black-backed gull, Great black-backed gull, Gannet, Shag, Manx shearwater, Kittiwake, Little tern, Roseate tern, Common tern, Sandwich tern, Guillemot) Non-breeding seabirds Breeding and non-breeding waterfowl	OUT	North Falls is beyond foraging range of breeding seabird species except fulmar, and Manx shearwater. The latter species was not recorded during baseline surveys at North Falls. Given the oceanic foraging habitat preferences of fulmar (Edwards 2015) it is considered highly unlikely that substantial numbers of breeding birds from the SPA occur at North Falls during the breeding season. Migrations of birds from this SPA are likely to result in negligible numbers passing through North Falls (relative to the size of the BDMPS populations for seabirds).
1. Based on the Natura 2000 data form, or for pSPAs other available information from an internet search. 2. Mean maximum foraging ranges (Table 8.3) are used as a guide to connectivity.						

9 Onshore SPAs

9.1 Approach to Screening

126. Direct or indirect effects on SPA / Ramsar sites which support Birds Directive Annex I species as a qualifying feature have been considered for HRA screening. Potential effects may arise from the permanent or temporary physical presence or activities relating to the construction, operation or decommissioning of North Falls.

127. This HRA screening exercise considers SPA and Ramsar sites which meet the following criteria:

- A component of the Project directly overlaps with a site whose qualifying features include a Birds Directive Annex I species; and / or
- The distance between the Project and the site is within the range for which there could be an interaction (i.e. within a zone of influence (ZOI) resulting from the construction, operation or decommissioning of North Falls.

128. An initial precautionary buffer of 10km from the onshore project area has been used in order to screen in potential effects. This distance has been derived based on a precautionary distance at which potential effects could occur. The justification for using this buffer is set out in Table 9.1 below.

Table 9.1 SPA qualifying features initial screening buffer zone justification

Effect	Relevant buffer zone	Justification
Effects arising from air quality emissions	10km	Defra's Guidance on 'Air emissions risk assessment for your environmental permit' (Defra, 2016) has been used to define the search area for sites potentially affected by emissions during the Project construction, operation and decommissioning. This identifies a precautionary buffer of 10km for use when identifying sites potentially affected by new emissions sources. Use of this screening distance is supported by the Institute of Air Quality Management (IAQM)'s 2020 Guide to the assessment of air quality impacts on designated nature conservation sites (IAQM, 2020) (albeit using a less precautionary 5km buffer for screening in sites).
Effects arising from visual disturbance	1km	Although no specific guidance exists regarding visual disturbance and birds, Goodship and Furness (2022) provides a useful indication of alert distances and flight initiation distances in a range of bird species. The upper limits of their distances reported in their meta analyses is 1km, therefore a precautionary 1km buffer has been adopted.
Effects arising from noise disturbance	1km	In the absence of national guidance of a noise disturbance screening buffer for Annex I species, based on Goodship and Furness (2022) a precautionary buffer of 1km is used as the maximum distance within which changes in the noise environment would have the potential to occur.

Effect	Relevant buffer zone	Justification
Effects arising from changes to water resources which have functional connectivity with the site	N/A – nearest relevant catchment	Functional connectivity covers a number of potential effects including effects arising from changes to upstream watercourses and effects arising from changes to groundwater resources. The ZOI for such features is typically based on ensuring that all sites which fall within the same functional surface and groundwater catchments are considered within this screening assessment. A defined precautionary distance buffer can therefore not be applied for this buffer.
Effects on functionally linked land (ex-situ) habitats which support qualifying features	10km	As the qualifying features associated with sites vary in their individual foraging ranges, a single maximum buffer zone has been used to screen for potential connectivity with functionally linked land which may support qualifying features of SPA/Ramsar sites, in this case, mainly geese and wader species. In order to set a precautionary buffer, we can therefore draw on existing literature which identifies potential foraging ranges of up to 10km for typical geese and wader species of the southeast of England (e.g., Hearn, 2004; Gillings and Fuller, 1999). This buffer is considered large enough to capture the use of functionally linked land for all other qualifying features.

129. On this basis, the worst-case scenario 10km buffer zone has been used for selecting sites for initial consideration within this onshore ornithology HRA screening, with the exception of when considering those sites which are potentially functionally connected the Project via groundwater / surface water systems, where the extent of the catchment(s) within which the onshore project area is located will be used.

130. The potential for these indirect effects to occur in practice is discussed in further detail below.

9.2 Sites considered within screening

131. Based on the buffers outlined above, the sites listed in Table 9.2 have been considered within this HRA screening. These sites are also shown on Figure 2.2.

Table 9.2 Onshore ornithology sites considered within HRA screening

Site code	Designation name	Qualifying features	Distance (km)	Comments
UK9009131A	Hamford Water SPA	The site qualifies under Article 4.1 and 4.2 of the Birds Directive (2009/147/EC) for supporting the following species: • Little tern *Sternula albifrons* 39 pairs – breeding (78 breeding adults) 2010 – 2014, 2.1% of GB population • Avocet *Recurvirostra avosetta* 99 individuals – wintering 1986/87 – 1990/91, 7% of GB population • Dark bellied brent goose *Branta bernicla bernicla*, 5,650 individuals – wintering, 1986/87 – 1990/91, 2% of biogeographic population • Shelduck *Tadorna tadorna* 840 individuals – wintering 1986/87 – 1990/91 1% of GB population • Teal *Anas crecca* 3,630 individuals – wintering 1986/87 – 1990/91 2% of GB population • Ringed plover *Charadrius hiaticula* 620 individuals – wintering 1986/87 – 1990/91 1% of biogeographic population • Grey plover *Pluvialis squatarola* 1,080 individuals – wintering 1986/87 – 1990/91 2% of GB population1 • Black-tailed godwit *Limosa limosa* 1,580 individuals – wintering 1986/87 – 1990/91 2% of biogeographic population • Redshank *Tringa tetanus* 1,240 individuals – wintering 1986/87 – 1990/91 1% of biogeographic population	0.8	N/A

UK11028	Hamford Water Ramsar	Ramsar criterion 6 – species/population occurring at levels of international importance.
		Qualifying Species/populations (as identified at designation):
		• Species with peak counts in spring/autumn:
		  ○ Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa, 1169 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)
		  ○ Common redshank, *Tringa totanus totanus*, 2099 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
		• Species with peak counts in winter:
		  ○ Dark-bellied brent goose, *Branta bernicla bernicla*, 3629 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)
		  ○ Black-tailed godwit , Limosa limosa islandica, Iceland/W Europe 377 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)
			0.8	N/A

Site code	Designation name	Qualifying features	Distance (km)	Comments
		Species/populations identified subsequent to designation for possible future consideration under criterion 6. • Species with peak counts in winter: ○ Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering 2749 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)		
UK9009121	Stour and Orwell Estuaries SPA	The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) for supporting the following species: • Avocet *Recurvirostra avosetta*, 21 pairs – breeding, 5 year peak mean 1996 – 2000 3.6% of GB population The site qualifies under Article 4.2 of the Birds Directive (2009/147/EC) for supporting the following species: • Redshank *Tringa tetanus* 2,588 individuals – autumn passage 5 year peak mean 1995/96 – 1999/2000 2.0% brittanica • Dark-bellied brent goose *Branta bernicla bernicla* 2,627 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.2% bernicla, Western Siberia (breeding) • Pintail *Anas acuta* 741 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.2% Northwestern Europe (non-breeding) • Grey plover *Pluvialis squatarola* 3,261 individuals - Wintering 5 year peak mean 1995/96 – 1999/2000 1.3% Eastern Atlantic (nonbreeding) • Knot *Calidris canutus Islandica* 5,970 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.3% islandica • Dunlin *Calidris alpina alpina* 19,114 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.4% alpina, Western Europe (non-breeding) • Black-tailed godwit *Limosa limosa islandica* 2,559 individuals -Wintering 5 year peak mean 1995/96 – 1999/2000 7.3% islandica • Redshank *Tringa tetanus* 3,687 individuals - Wintering 5 year peak mean 1995/96 – 1999/2000 2.8% brittanica The site qualifies under article 4.2 of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds, including: • great crested grebe *Podiceps cristatus,* • cormorant *Phalacrocorax carbo,* • dark-bellied brent goose *Branta bernicla bernicla*, • shelduck *Tadorna tadorna*, • wigeon *Anas penelope*,	3.4	N/A

Site code	Designation name	Qualifying features	Distance (km)	Comments
		• gadwall *Anas strepera*, • pintail *Anas acuta*, • goldeneye *Bucephala clangula*, • ringed plover *Charadrius hiaticula*, • grey plover *Pluvialis squatarola*, • lapwing *Vanellus vanellus*, • knot *Calidris canutus islandica*, • dunlin *Calidris alpina alpina*, • black-tailed godwit *Limosa limosa islandica*, • curlew *Numenius arquata*, • redshank *Tringa totanus* and • turnstone *Arenaria interpres*		

UK11067	Stour and Orwell Estuaries Ramsar	Ramsar criterion 5: Assemblages of international importance:
		Species with peak counts in winter:
		• 63017 waterfowl (5 year peak mean 1998/99-2002/2003)
		Ramsar criterion 6: species/populations occurring at levels of international importance.
		Qualifying Species/populations (as identified at designation):
		• Species with peak counts in spring/autumn:
		  ○ Common redshank, *Tringa totanus totanus*, 2588 individuals, representing an average of 2% of the population (5-year peak mean 1995/96- 1999/2000)
		• Species with peak counts in winter:
		  ○ Dark-bellied brent goose, *Branta bernicla bernicla*, 2627 individuals, representing an average of 1.2% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Northern pintail, *Anas acuta*, NW Europe 741 individuals, representing an average of 1.2% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering 3261 individuals, representing an average of 1.3% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering) 5970 individuals, representing an average of 1.3% of the population (5-year peak mean 1995/96-1999/2000)
			3.4	N/A

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Site code	Designation name	Qualifying features	Distance (km)	Comments
		○ Dunlin, *Calidris alpina alpina*, W Siberia/W Europe 19114 individuals, representing an average of 1.4% of the population (5-year peak mean 1995/96-1999/2000) ○ Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe 2559 individuals, representing an average of 7.3% of the population (5-year peak mean 1995/96-1999/2000) ○ Common redshank, *Tringa totanus totanus*, 3687 individuals, representing an average of 2.8% of the population (5-year peak mean 1995/96-1999/2000)		
UK9009243	Colne Estuary (Mid-Essex Coast Phase 2) SPA	The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) for supporting the following species: • Little tern *Sterna albifrons*, breeding - 73 pairs 1987-1991 (3% of British breeding population). • Hen harrier *Circus cyaneus*, wintering - 19 birds 1987/88 to 1991/92 (2% of the British total). The site qualifies under Article 4.2 of the Birds Directive (2009/147/EC) for supporting as a wetland of international importance by regularly supporting, in winter, over 20,000 waterfowl, including internationally important numbers of: • 5,315 dark-bellied brent geese *Branta bernicla bernicla* (3.1 % of the total world population, 5.9% of the British wintering population) • 1,252 redshank *Tringa totanus* (1.1% of the East Atlantic Flyway (EAF) population, 1.6% of British). and nationally important numbers of: • 243 cormorant *Phalacrocorax carbo* (1.2% of British), • 354 mute swan *Cygnus olor* (1.9% of British), • 1,237 shelduck *Tadorna tadorna* 1.6% of British), • 262 Goldeneye *Bucephala clangula* (1.7% of British), • 355 ringed plover *Charadrius hiaticula* (1.5% of British), • 1,168 grey plover *Pluvialis squatarola* (5.5% of British), • 219 sanderling *Calidris alba* (1.5% of British), • 11,272 dunlin *Calidris alpina* (2.6% of British), • 606 black-tailed godwit *Limosa limosa* (12.7% of British) • 938 curlew *Numenius arquata* (1% of British).	7.7	Site also located downstream of the Tenpenny Brook waterbody catchment, within the Colne Estuary Operational Catchment.

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Site code	Designation name	Qualifying features	Distance (km)	Comments
		Breeding: • 15 pairs (7% of British breeding population) of pochard *Aythya ferina* • 135 pairs (1% of British) of ringed plover *Chararius hiaticula*		

UK11015	Colne Estuary (Mid-Essex Coast Phase 2) Ramsar	Ramsar criterion 5: Assemblages of international importance:
		• Species with peak counts in winter:
		  ○ 32041 waterfowl (5 year peak mean 1998/99-2002/2003)
		Ramsar criterion 6: species/populations occurring at levels of international importance.
		Qualifying Species/populations (as identified at designation):
		• Species with peak counts in winter:
		  ○ Dark-bellied brent goose, *Branta bernicla bernicla*, 3165 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
		  ○ Common redshank, *Tringa totanus totanus*, 1624 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
			7.7	Site also located downstream of the Tenpenny Brook waterbody catchment, within the Colne Estuary Operational Catchment.

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9.3 Effects considered in screening

9.3.1 Construction effects

132. Within the North Falls onshore project area, construction activities such as the installation of buried cables (including excavation, horizontal direction drilling (HDD) and other trenchless duct installation techniques, creation and use of construction compounds and accesses and vehicle movements), construction of the Project's cable landfall, and construction of the Project's onshore substation (including earthworks, electrical equipment installation, construction compounds and vehicle movements, environmental mitigation creation, and electrical equipment operation) could potentially give rise to the following impacts:

- Direct permanent loss of habitats within site boundaries which support qualifying features;
- Direct temporary damage / disruption of habitats within site boundaries which support qualifying features;
- Indirect impacts on habitats which support qualifying features from air quality emissions;
- Indirect disturbance of qualifying features from noise;
- Indirect visual disturbance of qualifying features;
- Indirect impacts on habitats which support qualifying features arising from changes in supporting surface or groundwater resources;
- Direct and indirect impacts on functionally linked land habitats which support qualifying features; and
- Indirect disturbance impacts on qualifying features from noise and visual disturbance in functionally linked land habitats.

133. Construction and operation of the Project's onshore works would give rise to permanent habitat loss within the Project's onshore substation footprint. However, as noted in Table 9.2 there is no overlap between the onshore project area and any site boundaries, therefore direct permanent loss has been screened out from further consideration, as detailed in Table 9.3.

134. The project's onshore temporary works would give rise to temporary damage / disruption of habitats, during the construction period and, following habitat reinstatement, the time in which it takes for the habitats to mature. However, as noted in Table 9.2 there is no overlap between the onshore project area and the sites' boundaries, therefore direct temporary damage/disruption has been screened out from further consideration, as detailed in Table 9.3.

135. Construction of the Project's onshore works would give rise to dust generation and emissions generation associated with vehicle movements and equipment use. These effects will only occur while the Project is generating dust (from earthworks) and NO_2 / particulate emissions (from vehicle movements and non-road mobile machinery (NRMM)) during construction.

136. Construction of the Project's onshore works could also give rise to noise, visual and light disturbance from the operation of construction equipment and vehicle

movements. These effects will only occur while the Project is generating noise emissions / visual disturbance from vehicle movements and NRMM during construction.

137. Excavation and HDD during landfall, onshore cable burial and onshore substation construction works have the potential to give rise to changes in the surface / ground water regime of functionally connected sites.

138. The Project's onshore works could give rise to temporary and permanent loss of functionally linked land habitats which support qualifying features, as well as temporary disturbance to qualifying features using functionally linked land.

9.3.2 Operational effects

139. During the operation and maintenance phase, indirect disturbance impacts from light would be localised to works areas. The presence of light will only have potential to temporarily disturb bird species in the immediate area, which will likely be displaced to surrounding areas unaffected by light. Indirect disturbance from noise would also be highly localised, as well as being temporary during an activity. The onshore substation will be unmanned but will require regular visits from staff for routine maintenance. It is likely that where this is required, this will be localised to the area requiring inspection and, in the unlikely event that remedial works are required, these will be undertaken over the short term. As such, it is anticipated that any effects will be limited to temporary indirect disturbance to the adjacent bird species. Therefore effects during operation and maintenance have been screened out from further consideration, as detailed in Table 9.3.

9.3.3 Decommissioning effects

140. Decommissioning effects will be primarily caused by the removal of onshore substation and cabling infrastructure. Decommissioning would be expected to cause similar effects to that identified during construction.

141. The potential effects on qualifying features of onshore SPA and Ramsar sites from North Falls have been identified as shown Table 9.3.

Table 9.3 Summary of potential effects on qualifying features of SPA / Ramsar sites considered in HRA Screening (screened in (✓) and screened out (✗))

Potential effect	Construction	Operation	Decommissioning
Within SPA site boundaries			
Direct permanent loss of habitats within site boundaries which support qualifying features;	✗	✗	✗
Direct temporary damage / disruption of habitats within site boundaries which support qualifying features;	✗	✗	✗
Indirect effects on habitats which support qualifying features from air quality emissions;	✗	✗	✗
Disturbance of qualifying features within site boundaries from noise and visual disturbance;	✓	✗	✓

Potential effect	Construction	Operation	Decommissioning
Indirect effects on habitats which support qualifying features arising from changes in supporting surface or groundwater resources;	×	×	×
Within Functionally Linked Land			
Direct permanent loss of functionally linked land habitats which support qualifying features;	✓	×	×
Direct temporary damage / disruption of habitats within site boundaries which support qualifying features;	✓	×	✓
Indirect effects on functionally linked land habitats which support qualifying features from air quality emissions;	✓	×	✓
Indirect effects on functionally linked land (ex-situ) habitats which support qualifying features.	✓	×	✓
Disturbance impacts on qualifying features from noise and visual disturbance in functionally linked land (ex-situ) habitats.	✓	×	✓

9.3.4 In-combination effects

142. The in-combination assessment considers likely significant effects from other plans or project based on the findings of the environmental assessment undertaken for such plans and projects. It is anticipated that the impacts will be localised, however as above, a precautionary search area will be used to identify plans and projects for consideration in the in-combination HRA.

143. Other projects which are subject to the DCO regime and are currently either in the process of being consented or which have received consent have been considered for inclusion within the in-combination assessment. Similarly, projects subject to the Town and Country Planning Act 1990 (TCPA) regime which appear on the Essex County Council and Tendring District Council Planning Portals, which are of sufficient size and scale to potentially interact with the Project, have also been considered. The search area also includes projects within 10km of the Stour and Orwell Estuaries SPA that are within Suffolk and subject to the DCO regime or on the Suffolk County Council Planning Portal. The list of projects is provided in the RIAA Part 5 Onshore European Sites (Document Reference: 7.1.5).

144. Existing activities, such as agricultural activities, water abstraction and existing traffic are considered to be a component of the baseline conditions and are therefore not considered in the in-combination assessment.

145. For the purpose of the screening assessment, the conclusions discussed below apply to the ‘project alone’ and the in-combination effects with other plans and projects.

9.4 Screening

146. Table 9.4 provides the list of sites within the 10km buffer (plus surface / groundwater catchments) which support qualifying features of sites. In summary, it is proposed that Hamford Water SPA and Ramsar, Stour and Orwell Estuaries SPA and Ramsar and Colne Estuary (Mid-Essex Coast Phase 2) SPA and Ramsar are all screened in for further assessment.

Table 9.4 Onshore ornithology - Screening summary

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale
UK9009131A	Hamford Water SPA	The site qualifies under Article 4.1 and 4.2 of the Birds Directive (2009/147/EC) for supporting the following species: • Little tern *Sternula albifrons* 39 pairs – breeding (78 breeding adults) 2010 – 2014, 2.1% of GB population • Avocet *Recurvirostra avosetta* 99 individuals – wintering 1986/87 – 1990/91, 7% of GB population • Dark bellied brent goose *Branta bernicla bernicla*, 5,650 individuals – wintering, 1986/87 – 1990/91, 2% of biogeographic population • Shelduck *Tadorna tadorna* 840 individuals – wintering 1986/87 – 1990/91 1% of GB population • Teal *Anas crecca* 3,630 individuals – wintering 1986/87 – 1990/91 2% of GB population • Ringed plover *Charadrius hiaticula* 620 individuals – wintering 1986/87 – 1990/91 1% of biogeographic population • Grey plover *Pluvialis squatarola* 1,080 individuals – wintering, 1986/87 – 1990/91 2% of GB population • Black-tailed godwit *Limosa limosa* 1,580 individuals – wintering 1986/87 – 1990/91 2% of biogeographic population • Redshank *Tringa tetanus* 1,240 individuals – wintering 1986/87 – 1990/91 1% of biogeographic population	0.8	In	Within the potential ZOI for noise and visual disturbance within SPA, and effects on functionally linked land habitats and disturbance to qualifying features utilising functionally linked land. Located 800m from the onshore project area, so no habitat loss or indirect habitat effects will occur within the SPA. Not located within a surface or groundwater catchment functionally connected to the onshore project area. Potential air quality effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m. This site falls outside this realistic ZOI..

UK11028	Hamford Water Ramsar	Ramsar criterion 6 – species/population occurring at levels of international importance.
		Qualifying Species/populations (as identified at designation):
		• Species with peak counts in spring/autumn:
		  ○ Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa 1169 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)
		  ○ Common redshank , *Tringa totanus totanus*, 2099 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
			0.8	In	Within the potential ZOI for noise and visual disturbance within the SPA, and effects on functionally linked land habitats and disturbance to qualifying features utilising functionally linked land habitats.
					
					Located 800m from the onshore project area, so no habitat loss or indirect habitat effects will occur. Not located within a surface or groundwater catchment functionally connected to the onshore project area.

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale

		• Species with peak counts in winter:
		  ○ Dark-bellied brent goose, *Branta bernicla bernicla*, 3629 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)
		  ○ Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe 377 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)
		Species/populations identified subsequent to designation for possible future consideration under criterion 6.
		• Species with peak counts in winter:
		  ○ Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering 2749 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
					Potential air quality effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m. This site falls outside this realistic ZOI.

UK9009121	Stour and Orwell Estuaries SPA	The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) for supporting the following species: • Avocet *Recurvirostra avosetta*, 21 pairs – breeding, 5 year peak mean 1996 – 2000 3.6% of GB population The site qualifies under Article 4.2 of the Birds Directive (2009/147/EC) for supporting the following species: • Redshank *Tringa tetanus* 2,588 individuals – autumn passage 5 year peak mean 1995/96 – 1999/2000 2.0% brittanica • Dark-bellied brent goose *Branta bernicla bernicla* 2,627 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.2% bernicla, Western Siberia (breeding) • Pintail Anas acuta 741 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.2% Northwestern Europe (non-breeding)	3.4	In	Within the potential ZOI for effects to functionally linked land habitats and disturbance to qualifying features utilising functionally linked land. Site is outside the realistic ZOI for other indirect effects outlined above, i.e.: • Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m[7]. • Beyond 1km for visual /light disturbance. • Beyond 1km for noise disturbance.

[7] The IAQM recommends that an air quality assessment is required where there is "an 'ecological receptor' within 50m of the boundary of the site; or 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s)".

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale
		• Grey plover *Pluvialis squatarola* 3,261 individuals - Wintering 5 year peak mean 1995/96 – 1999/2000 1.3% Eastern Atlantic (nonbreeding) • Knot *Calidris canutus Islandica* 5,970 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.3% islandica • Dunlin *Calidris alpina alpina* 19,114 individuals – wintering 5 year peak mean 1995/96 – 1999/2000 1.4% alpina, Western Europe (non-breeding) • Black-tailed godwit *Limosa limosa islandica* 2,559 individuals - Wintering 5 year peak mean 1995/96 – 1999/2000 7.3% islandica • Redshank *Tringa tetanus* 3,687 individuals - Wintering 5 year peak mean 1995/96 – 1999/2000 2.8% brittanica The site qualifies under article 4.2 of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds, including: • great crested grebe *Podiceps cristatus*, • cormorant *Phalacrocorax carbo*, • dark-bellied brent goose *Branta bernicla bernicla*, • shelduck *Tadorna tadorna*, • wigeon *Anas penelope*, • gadwall *Anas strepera*, • pintail *Anas acuta*, • goldeneye *Bucephala clangula*, • ringed plover *Charadrius hiaticula*, • grey plover *Pluvialis squatarola*, • lapwing *Vanellus vanellus*, • knot *Calidris canutus islandica*, • dunlin *Calidris alpina alpina*, • black-tailed godwit *Limosa limosa islandica*, • curlew *Numenius arquata*, • redshank *Tringa totanus* and • turnstone *Arenaria interpres*			• Not located within a surface or groundwater catchment functionally connected to the onshore project area. Located outside of the onshore project area, so direct effects will not occur.

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale

UK11067	Stour and Orwell Estuaries Ramsar	Ramsar criterion 5: Assemblages of international importance:
		• Species with peak counts in winter:
		  ○ 63017 waterfowl (5 year peak mean 1998/99-2002/2003)
		
		Ramsar criterion 6: species/populations occurring at levels of international importance.
		Qualifying Species/populations (as identified at designation):
		• Species with peak counts in spring/autumn:
		  ○ Common redshank, *Tringa totanus totanus*, 2588 individuals, representing an average of 2% of the population (5-year peak mean 1995/96-1999/2000)
		• Species with peak counts in winter:
		  ○ Dark-bellied brent goose, *Branta bernicla bernicla*, 2627 individuals, representing an average of 1.2% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Northern pintail, *Anas acuta*, NW Europe 741 individuals, representing an average of 1.2% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering 3261 individuals, representing an average of 1.3% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering) 5970 individuals, representing an average of 1.3% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Dunlin, *Calidris alpina alpina*, W Siberia/W Europe 19114 individuals, representing an average of 1.4% of the population (5-year peak mean 1995/96-1999/2000)
		  ○ Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe 2559 individuals, representing an average of 7.3% of the population (5-year peak mean 1995/96-1999/2000)
			3.4	In	Within the potential ZOI for effects to functionally linked land habitats and disturbance to qualifying features utilising functionally linked land.
					
					Site is outside the realistic ZOI for other indirect effects outlined above, i.e.:
					• Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m.
					• Beyond 1km for visual /light disturbance.
					• Beyond 1km for noise disturbance.
					• Not located within a surface or groundwater catchment functionally connected to the onshore project area.
					
					Located outside of the onshore project area, so direct effects will not occur.

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale
		○ Common redshank, *Tringa totanus totanus*, 3687 individuals, representing an average of 2.8% of the population (5-year peak mean 1995/96-1999/2000)			
UK9009243	Colne Estuary (Mid-Essex Coast Phase 2) SPA	The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) for supporting the following species: • Little tern *Sterna albifrons*, breeding - 73 pairs 1987-1991 (3% of British breeding population). • Hen harrier *Circus cyaneus*, wintering - 19 birds 1987/88 to 1991/92 (2% of the British total). The site qualifies under Article 4.2 of the Birds Directive (2009/147/EC) for supporting as a wetland of international importance by regularly supporting, in winter, over 20,000 waterfowl, including internationally important numbers of: • 5,315 dark-bellied brent geese *Branta bernicla bernicla* (3.1 % of the total world population, 5.9% of the British wintering population) • 1,252 redshank *Tringa totanus* (1.1% of the East Atlantic Flyway (EAF) population, 1.6% of British). and nationally important numbers of: • 243 cormorant *Phalacrocorax carbo* (1.2% of British), • 354 mute swan *Cygnus olor* (1.9% of British), • 1,237 shelduck *Tadorna tadorna* 1.6% of British), • 262 Goldeneye *Bucephala clangula* (1.7% of British), • 355 ringed plover *Charadrius hiaticula* (1.5% of British), • 1,168 grey plover *Pluvialis squatarola* (5.5% of British), • 219 sanderling *Calidris alba* (1.5% of British), • 11,272 dunlin *Calidris alpina* (2.6% of British), • 606 black-tailed godwit *Limosa limosa* (12.7% of British) • 938 curlew *Numenius arquata* (1% of British).	7.7	In	Within the potential ZOI for effects to functionally linked land habitats and disturbance to qualifying features utilising functionally linked land. Site is outside the realistic ZOI for other indirect effects outlined above, i.e.: • Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m. • Beyond 1km for visual /light disturbance. • Beyond 1km for noise disturbance. • Located at least 7.7km downstream of the onshore project area (see Figure 2.2), with numerous barriers and discontinuities between the European site and the onshore project area (Environment Agency, 2021). Located outside of the onshore project area, so direct effects will not occur.

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale
		Breeding: • 15 pairs (7% of British breeding population) of pochard *Aythya ferina* • 135 pairs (1% of British) of ringed plover *Chararius hiaticula*			

UK11015	Colne Estuary (Mid-Essex Coast Phase 2) Ramsar	Ramsar criterion 5: Assemblages of international importance:
		• Species with peak counts in winter:
		  ○ 32041 waterfowl (5 year peak mean 1998/99-2002/2003)
		
		Ramsar criterion 6: species/populations occurring at levels of international importance.
		Qualifying Species/populations (as identified at designation):
		• Species with peak counts in winter:
		  ○ Dark-bellied brent goose, *Branta bernicla bernicla*, 3165 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
		  ○ Common redshank, *Tringa totanus totanus*, 1624 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
			7.7	In	Within the potential ZOI for effects to functionally linked land habitats and disturbance to qualifying features utilising functionally linked land.
					
					Site is outside the realistic ZOI for other indirect effects outlined above, i.e.:
					• Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m.
					• Beyond 1km for visual /light disturbance.
					• Beyond 1km for noise disturbance.
					• Located at least 7.7km downstream of the onshore project area (see Figure 2.2), with numerous barriers and discontinuities between the European site and the onshore project area (Environment Agency, 2021).
					
					Located outside of the onshore project area, so direct effects will not occur.

147. It has not been possible to rule out LSE on the six sites considered within this HRA screening, therefore information to inform Appropriate Assessment will be required for these six sites.

148. The sites identified support a range of bird species during the breeding season and particularly over winter, including swans and geese, ducks, waders and raptors. The sites are located between 0.8 and 7.7km from the onshore project area, and all include as qualifying features non-breeding geese and wader species which have the potential to use functionally linked land habitats (such as arable or grassland habitats) outside the site boundaries within up to 10km from the relevant site. All sites therefore have potential for their qualifying features to be impacted during construction or decommissioning of North Falls.

149. Due to the distances of the sites from the onshore project area there is considered to be no pathway for direct effects to occur, with the possible exception of disturbance effects to qualifying features within the Hamford Water SPA and Ramsar site (which is 800m at its closest point from the onshore project area). The following indirect effects during construction and decommissioning will therefore be considered further during Stage 2 of the assessment:

- All screened in sites:
    - Direct effects on functionally linked land (outside of the SPA) which support qualifying features of the sites due to habitat loss;
    - Direct effects on qualifying features from noise and visual disturbance in functionally linked land during construction; and
    - Indirect effects on functionally linked land during construction which support qualifying features of the sites due to air quality emissions or changes in supporting surface or groundwater resources (including bentonite breakout events).
- Additionally, for Hamford Water SPA and Ramsar only:
    - Direct effects on qualifying features within the SPA from noise and visual disturbance .

10 Onshore SACs

10.1 Approach to Screening

150. Direct or indirect effects on SAC / Ramsar sites which support Habitats Directive Annex I habitats or Annex II species as a qualifying feature have been considered for HRA screening. Potential effects may arise from the permanent or temporary physical presence or activities relating to the construction, operation or decommissioning of North Falls.

151. This HRA screening exercise considers sites which meet the following criteria:

- A component of the Project directly overlaps a site whose qualifying features include an Annex I habitat or Annex II species; and / or
- The distance between the Project and the Annex I habitat or Annex II species is within the range for which there could be an interaction (i.e. within

a ZOI resulting from the construction, operation or decommissioning of North Falls).

152. An initial precautionary buffer of 10km around the onshore project area has been used in order to screen in potential effects. This distance has been derived based on a precautionary distance at which potential effects could occur. The justification for using this buffer is set out in Table 10.1 below.

Table 10.1 Habitats and species initial screening buffer zone justification

Effect	Relevant buffer zone	Justification
Effects arising from air quality emissions	10km	Defra's Guidance on 'Air emissions risk assessment for your environmental permit' (Defra, 2016) has been used to define the search area for European sites potentially affect by emissions during the Project construction, operation and decommissioning. This identifies a precautionary buffer of 10km for use when identifying sites potentially affected by new emissions sources. Use of this screening distance is supported by the Institute of Air Quality Management (IAQM)'s 2020 Guide to the assessment of air quality impacts on designated nature conservation sites. (IAQM, 2020) (albeit using a less precautionary 5km buffer for screening in sites).
Effects arising from noise disturbance	1km	In the absence of national guidance of a noise disturbance screening buffer for Annex II species, a precautionary buffer of 500m (for invertebrates) and 1km (for bats) as the maximum distance within which changes in the noise environment would have the potential to occur. Noise effects on Annex I habitats are not considered further within this assessment.
Effects arising from visual and lighting disturbance	2km	Artificial lighting has the potential to affect species such as, but not limited to, invertebrates, birds and/or bats. Guidance from Buglife (A Review of the Impact of Artificial Light on Invertebrates, 2011) and the Bat Conservation Trust (BCT) (Bats and artificial lighting at night , 2023) indicates that disturbance from artificial light needs to be considered when screening sites. The distance that invertebrates are attracted to light varies across the species; however, moths are known to fly to light from distances varying from 3-130m, but also distances of up to 500m have been recorded. Therefore, for the purposes of this screening assessment, a precautionary buffer of 500m has been applied for invertebrates (including the fisher's estuarine moth). Whilst bats are not a qualifying feature of the sites subject to this screening assessment, the principles outlined in the BCT guidance relating to artificial lighting in the UK should be considered. As such, a precautionary buffer of 2km is considered, based on the buffer zones used for creating 'Dark Sky Reserve buffer zones' for light sensitive areas in the UK (Exmoor National Park, 2011).
Effects arising from changes to water resources which have functional connectivity with the European site	N/A – nearest relevant catchment	Functional connectivity covers a number of potential effects including effects arising from changes to upstream watercourses and effects arising from changes to groundwater resources. The ZOI for such features is typically based on ensuring that all sites which fall within the same functional surface and groundwater catchments are considered within this screening assessment. A defined precautionary

Effect	Relevant buffer zone	Justification
		distance buffer can therefore not be applied for this buffer.
Effects to ex-situ habitats which support mobile Annex I or II species features of European sites	10km	Terrestrial invertebrate surveys were undertaken between June and August 2021 (Hopkins Ecology, 2021). A total of 121 species were recorded, including the Fisher's estuarine moth which is an Annex II and IV species and is a qualifying species of the Hamford Water SAC and the Holland Haven Marshes Site of Special Scientific Interest (SSSI). The presence of Fisher's Estuarine moth is functionally linked to the location of its sole foodplant, hog's fennel. Hog's fennel is associated with maritime grassland and surveys to date show that this species is limited to the habitat in and around the landfall location. As the Annex II species associated with European sites vary in their individual range, there is not a clear single buffer zone which is appropriate when screening in sites based on potential interaction with ex situ habitats which may support features of European sites. However, and in accordance with the Buglife guidance, a precautionary buffer of 500m can be applied based on habitat (i.e. Hog's fennel) used to support invertebrate (including the Fisher's Estuarine moth) populations. With respect to bats and due to their larger foraging ranges, the BCT's identification of 'Core Sustenance Zones' (CSZ) required for identifying areas within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost indicates that the maximum CSZ of any UK species is 6.47km (barbastelle bat) (BCT 2016, BCT 2020), therefore precautionary buffer of 10km for scoping in sites based on their ex situ habitats is considered appropriate.

153. On this basis, an initial 10km buffer zone has been used for selecting European sites for further consideration within this HRA screening, with the exception of when considering those sites which are potentially functionally connected the Project via groundwater / surface water systems, where the extent of the catchment(s) within which the onshore project area is located will be used.

154. The potential for these indirect effects to occur in practice and their realistic ZOI's are discussed in further detail below.

10.2 Sites considered within screening

155. Based on the buffers outlined above, the sites listed in Table 10.2 have been considered within this HRA screening. These sites are also shown on Figure 2.2.

Table 10.2 Habitats and species sites considered within HRA screening

Site Code	Designation name	Qualifying features	Distance (km)	Comments
UK0030377	Hamford Water SAC	4035 Fisher's estuarine moth (*Gortyna borelii lunata)*	0.80	N/A
UK11067	Stour and Orwell Estuaries Ramsar	Ramsar criterion 2: Contains seven nationally scarce plants; contains five British Red Data Book invertebrates.	3.4	N/A
UK0013690	Essex Estuaries SAC	1130 Estuaries; 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonizing mud and sand 1320 Spartina swards (*Spartinion maritimae*) 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) 1110 Sandbanks which are slightly covered by sea water all the time	8.5	European site located downstream of the Tenpenny Brook waterbody catchment, within the Colne Estuary Operational Catchment.
UK11015	Colne Estuary (Mid-Essex Coast Phase 2) Ramsar	Ramsar criterion 1: The site is important due to the extent and diversity of saltmarsh present. Ramsar criterion 2: The site supports 12 species of nationally scarce plants and at least 38 British Red Data Book invertebrate species. Ramsar criterion 3: This site supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.	7.7	European site located downstream of the Tenpenny Brook waterbody catchment, within the Colne Estuary Operational Catchment.

10.3 Effects considered in screening

10.3.1 Construction effects

156. Within the North Falls onshore project area, construction activities such as the installation of buried cables (including excavation, HDD) and other trenchless duct installation techniques, creation and use of construction compounds and accesses and vehicle movements), construction of the Project's cable landfall, and construction of the Project's onshore substation (including earthworks, electrical equipment installation, construction compounds and vehicle movements, environmental mitigation creation, and electrical equipment operation) could potentially give rise to the following effects:

- Direct permanent loss of Annex I habitats;
- Direct temporary damage / disruption of Annex I habitats;
- Indirect effects on Annex I habitats and Annex II species from air quality emissions;
- Indirect disturbance of Annex II species from noise;
- Indirect disturbance of Annex II species from visual / lighting;
- Indirect effects on Annex I habitats and Annex II species arising from changes in supporting surface or groundwater resources;
- Direct and indirect effects on ex-situ habitats which support Annex II species of European sites.

157. Construction and operation of the Project's onshore works would give rise to permanent habitat loss within the Project's onshore substation footprint. However, as noted in Table 10.2 there is no overlap between the onshore project area and the sites' boundaries, therefore direct permanent loss has been screened out from further consideration, as detailed in Table 10.3.

158. The project's onshore temporary works would give rise to temporary damage / disruption of habitats, during the construction period and, following habitat reinstatement, the time in which it takes for the habitats to mature. However, as noted in Table 10.2 there is no overlap between the onshore project area and the sites' boundaries, therefore direct temporary damage/disruption has been screened out from further consideration, as detailed in Table 10.3.

159. Construction of the Project's onshore works would give rise to dust generation and emissions generation associated with vehicle movements and equipment use. These effects will only occur while the Project is generating dust (from earthworks) and NO_2 / particulate emissions (from vehicle movements and NRMM) during construction.

160. Construction of the Project's onshore works could also give rise to noise, visual and light disturbance from the operation of construction equipment and vehicle movements. These effects will only occur while the Project is generating noise emissions / light from temporary works during construction. Excavation and HDD / use of trenchless techniques during landfall, onshore cable burial and onshore substation construction works have the potential to give rise to changes in the surface / groundwater regime of functionally connected European sites.

161. Finally, the Project's onshore works could give rise to temporary loss of ex situ habitats which support other habitat features.

10.3.2 Operational effects

162. During the operation and maintenance phase, the onshore substation will be unmanned but will require regular visits from staff for routine maintenance. It is likely that where this is required, this will be localised to the area requiring inspection and, in the unlikely event that remedial works are required, these will be undertaken over the short term. As such, it is anticipated that any effects to onshore ecology receptors (habitats and/or species) will be limited to temporary indirect disturbance to the adjacent habitats and species. Therefore effects during operation and maintenance have been screened out from further consideration, as detailed in Table 10.3.

163. During the operation and maintenance phase, indirect disturbance effects from light would be localised to works areas. The presence of light will only have potential to temporarily disturb faunal species in the immediate area, which will likely be displaced to surrounding areas unaffected by light. Indirect disturbance from noise would also be highly localised, as well as being temporary during an activity. Therefore effects during operation and maintenance have been screened out from further consideration, as detailed in Table 10.3.

164. Finally, the Project's onshore works could give rise to permanent loss of ex situ habitats which support other habitat features.

10.3.3 Decommissioning effects

165. Decommissioning effects will be primarily caused by the removal of onshore substation and cabling infrastructure. Decommissioning would be expected to cause similar effects to that identified during construction.

166. The potential effects on onshore habitats and species from North Falls have been identified as shown in Table 10.3.

Table 10.3 Summary of potential effects on Habitats Directive Annex I habitats and Annex II species considered in HRA Screening (screened in (✓) and screened out (×))

Potential effect	Construction	Operation	Decommissioning
Direct permanent loss of Annex I habitats;	×	×	×
Direct temporary damage / disruption of Annex I habitats;	×	×	×
Indirect effects on Annex I habitats and Annex II species from air quality emissions;	✓	×	✓
Indirect disturbance of Annex II species from noise;	✓	×	✓
Indirect disturbance of Annex II species from visual / lighting;	✓	×	✓
Indirect effects on Annex I habitats and Annex II species arising from changes in supporting surface or groundwater resources;	✓	✓	✓

Potential effect	Construction	Operation	Decommissioning
Direct and indirect effects on ex-situ habitats which support Annex II species of European sites.	✓	✓	✓

10.3.4 In-combination effects

167. In-combination effects will consider likely significant effects from other plans or project based on the findings of the environmental assessment undertaken for such plans and projects. It is anticipated that the impacts will be localised, however as above, a precautionary 10km search area will be used to identify plans and projects for consideration in the in-combination HRA.

168. Other projects which are subject to the DCO regime and are currently either in the process of being consented or which have received consent have been considered for inclusion within the in-combination assessment. Similarly, projects subject to the TCPA regime which appear on the Essex County Council and Tendring District Council Planning Portals, which are of sufficient size and scale to potentially interact with the Project, have also been considered.

169. Projects within the 10km search area include (but are not limited to):

- Five Estuaries;
- Norwich to Tilbury.

170. Existing activities, such as agricultural activities, water abstraction and existing traffic are considered to be a component of the baseline conditions and are therefore not considered in the in-combination assessment.

171. For the purpose of the screening assessment, the conclusions discussed below apply to the ‘project alone’ and the in-combination effects with other plans and projects.

10.4 Screening

172. Table 9.4 provides the list of European sites within the 10km buffer (plus surface / groundwater catchments) which support Annex I habitats or Annex II species. In summary, it is proposed that Essex Estuaries SAC and Ramsar site and Stour and Orwell Estuaries Ramsar site are screened out, whilst Hamford Water SAC is screened in for further assessment.

Table 10.4 Habitats and species - Screening summary

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale
UK0030377	Hamford Water SAC	4035 Fisher's estuarine moth *Gortyna borelii lunata*	0.8	In	There is potential for indirect effects to arise on this qualifying feature within the potential ZOI for disturbance from noise and/or lighting, changes to surface / groundwater resources and effects to ex situ habitats. Located outside of the onshore project area, so direct effects will not occur. Potential air quality effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m. This site falls outside this realistic ZOI.
UK11067	Stour and Orwell Estuaries Ramsar	Ramsar criterion 2: Contains seven nationally scarce plants; contains five British Red Data Book invertebrates.	3.4	Out	Site is not designated for highly mobile Annex II species (e.g. bats/ otters). Site is outside the realistic ZOI for indirect effects outlined above, i.e.: • Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m[8]. • Beyond 2km for visual /light disturbance • Beyond 1km for noise disturbance • Not located within a surface or ground water catchment functionally connected to the onshore project area (see Figure 2.2). Located outside of the onshore project area, so direct effects will not occur.
UK0013690	Essex Estuaries SAC	1130 Estuaries; 1140 Mudflats and sandflats not covered by seawater at low tide	8.5	Out	Site is not designated for highly mobile Annex I species (e.g. bats/ otters). Site is outside the realistic ZOI for indirect effects outlined above, i.e.:

[8] The IAQM recommends that an air quality assessment is required where "an 'ecological receptor' within 50 m of the boundary of the site; or 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s)".

Site Code	Designation name	Qualifying feature	Distance (km)	Screened in/out	Rationale
		1310 Salicornia and other annuals colonizing mud and sand 1320 Spartina swards (Spartinion maritimae) 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) 1110 Sandbanks which are slightly covered by sea water all the time			• Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m. • Beyond 2km for visual /light disturbance. • Beyond 1km for noise disturbance. • Located at least 8km downstream of the onshore project area (see Figure 2.2), with numerous barriers and discontinuities between the European site and the onshore project area (Environment Agency, 2021). Located outside of the onshore project area, so direct effects will not occur.
UK11015	Colne Estuary (Mid-Essex Coast Phase 2) Ramsar	Ramsar criterion 1: The site is important due to the extent and diversity of saltmarsh present. Ramsar criterion 2: The site supports 12 species of nationally scarce plants and at least 38 British Red Data Book invertebrate species. Ramsar criterion 3: This site supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.	7.7	Out	Site is not designated for highly mobile Annex I species (e.g. bats/ otters). Site is outside the realistic ZOI for indirect effects outlined above, i.e.: • Potential effects do not include new point source emissions, but localised increases in nitrous oxides / particulate matter / dust only. Therefore the potential ZOI is only up to 500m. • Beyond 2km for visual /light disturbance. • Beyond 1km for noise disturbance. • Located at least 8km downstream of the onshore project area (see Figure 2.2), with numerous barriers and discontinuities between the European site and the onshore project area (Environment Agency, 2021). Located outside of the onshore project area, so direct effects will not occur.

173. It has not been possible to rule out LSE on the Hamford Water SAC during stage 1 (screening) therefore information to inform Appropriate Assessment will be required for this site. Relevant ecological surveys and consultation with statutory stakeholders, including Natural England has been undertaken to inform this process.

174. The Hamford Water SAC is designated for the Annex II species Fisher's estuarine moth, as one of two locations in the UK which support this species. In particular, the site boundary covers areas of hog's fennel *Peucedanum officinale*, which is critical in the species life-cycle.

175. The Hamford Water SAC is located within 0.8km of the onshore project area at its closest point, and therefore there is potential for its designated feature, Fisher's estuarine moth to be indirectly affected during construction, operation and maintenance or decommissioning of North Falls.

176. As there is no overlap between the onshore project area and the SAC, there is no pathway for direct effects to occur. The following indirect effects during construction, operation and decommissioning will be considered further during Stage 2 of the assessment:

- Indirect effects on Annex II species and the habitat which supports them from disturbance (noise and/or lighting);
- Indirect effects on Annex II species and the habitat which supports them arising from changes in supporting surface or groundwater resources; and
- Direct and indirect effects on ex-situ habitats which support Annex II species of European sites.

11 Summary

11.1 Offshore

11.1.1 Offshore SACs Annex I habitats screening summary

177. The HRA screening of Annex I habitats during construction, operation and maintenance, and decommissioning considers a conservative study area using a 50km buffer around the North Falls offshore project area.

178. On the basis that there is potential for indirect effects which could result in LSE on the designated Annex I habitat feature of Margate and Long Sands SAC for North Falls alone or in combination, this site has been screened into the HRA.

179. All other European sites are screened out on the basis of no potential for LSE on the designated Annex I habitats. For further information on the rationale, see Section 5.4.

11.1.2 Offshore SACs Annex II fish species screening summary

180. On the basis that there is no potential for direct or indirect effects from North Falls (alone or in-combination) which could result in LSE on any site designated for Annex II migratory fish species, all SACs with Annex II fish species qualifying features are screened out. For further information on the rationale, see Section 6.4.

11.1.3 Offshore SACs Annex II marine mammal species screening summary

181. HRA screening for marine mammals considers European sites and potential in-combination effects within the relevant reference populations for each species (discussed in RIAA Part 3 Marine Mammals (Annex II Species) (Document Reference: 7.1.3)).

182. The following European sites in Table 11.1 have been screened in for LSE:

Table 11.1 Summary of SACs and marine mammal features screened in

Site	Qualifying feature screened in
Southern North Sea SAC	Harbour porpoise
Humber Estuary SAC and Ramsar	Grey seal
The Wash and North Norfolk Coast SAC	Harbour seal
Vlaamse Banken SAC	Harbour seal Grey seal
SBZ 1 / ZPS 1 SPA	Harbour seal
Vlakte van de Raan SCI	Harbour seal Grey seal
Baie de Canche et couloir des trois estuaries SAC	Harbour seal Grey seal
Bancs des Flandres SAC	Harbour seal Grey seal
Dunes De La Plaine Maritime Flamande SAC	Harbour seal
Estuaire De La Canche, Dunes Picardes Plaquees Sur L'ancienne Falaise, Foret D'hardelot Et Falaise D'equihen SAC	Harbour seal
Estuaires et littoral picards (baies de Somme et d'Authie) SAC	Harbour seal Grey seal
Falaises du Cran aux Oeufs et du Cap Gris-Nez, Dunes du Chatelet, Marais de Tardinghen et Dunes de Wissant SAC	Harbour seal Grey seal
Recifs Gris-Nez Blanc-Nez SAC	Harbour seal Grey seal
Ridens et dunes hydrauliques du detroit du Pas-de-Calais SAC	Grey seal
Borkum Riffgrund SCI	Grey seal
Nationalpark Niedersachsisches Wattenmeer SAC	Grey seal
Doggersbank SAC	Grey seal
Duinen Ameland SAC	Grey seal
Duinen en Lage Land Texel SAC	Grey seal
Duinen Goeree & Kwade Hoek SAC	Harbour seal Grey seal
Duinen Terschelling SAC	Grey seal
Duinen Vlieland SAC	Grey seal

Site	Qualifying feature screened in
Grevelingen SAC	Harbour seal Grey seal
Klaverbank SAC	Grey seal
Noordzeekustzone SAC	Harbour seal Grey seal
Oosterschelde SPA and SAC	Harbour seal Grey seal
Vlakte van de Raan SAC	Harbour seal Grey seal
Voordelta SAC and SPA	Harbour seal Grey seal
Waddenzee SAC	Harbour seal Grey seal
Westerschelde and Saeftinghe SAC	Harbour seal Grey seal

11.1.4 Offshore SPAs screening summary

183. The screening of Annex II offshore ornithology features considered qualifying features for UK sites along the east coast from the Northern Isles to the English Channel Coast. Sites where LSE could not be ruled out for one or more qualifying feature are summarised in Table 11.2. For further information on the rationale for the screening decision, the potential impact(s) where a feature is screened in, and the relevant season(s), see Section 8.5.

184. The Transboundary screening considered European Sites along the northern coast of France (south of the English Channel the North Sea), Belgium (North Sea coast), the Netherlands (North Sea coast) and Germany (North Sea coast) (Table 8.5). No Transboundary sites were screened in for LSE.

Table 11.2 Summary of offshore SPAs and features screened in

Site	Qualifying feature screened in
Outer Thames Estuary SPA	Red-throated diver, non-breeding Common tern, breeding
Alde-Ore Estuary SPA and Ramsar site	Sandwich tern, breeding Lesser black-backed gull, breeding Avocet, breeding Avocet, non-breeding Marsh harrier, breeding Redshank, non-breeding Ruff, non-breeding Notable assemblage of breeding and wintering wetland birds[R]
Sandlings SPA	Nightjar, breeding Woodlark, breeding
Minsmere-Walberswick SPA and Ramsar	Avocet, breeding Marsh harrier, breeding Nightjar, breeding[S] Shoveler, breeding

Site	Qualifying feature screened in
	Shoveler, wintering[S] Teal, breeding Gadwall, breeding Gadwall, wintering[S] White-fronted goose, wintering[S] Hen harrier, wintering[S] Assemblage of rare breeding birds associated with marshland and reedbeds[R]
Deben Estuary SPA and Ramsar	Avocet, wintering[S] Dark-bellied brent goose, wintering
Hamford Water SPA and Ramsar	Avocet, wintering[S] Black-tailed godwit islandica, wintering Dark-bellied brent goose, wintering Grey plover, wintering[S] Redshank, wintering[S], passage Ringed plover, wintering[S], passage Shelduck, wintering[S] Teal, wintering[S]
Stour and Orwell Estuaries SPA and Ramsar	Avocet, breeding[S] Black-tailed godwit *islandica*, wintering Dark-bellied brent goose, wintering Dunlin *alpina*, wintering Grey plover, wintering Knot, wintering Pintail, wintering Redshank, wintering Redshank, autumn passage Waterbird assemblage, non-breeding (great crested grebe, cormorant, shelduck, wigeon, gadwall, goldeneye, ringed plover, lapwing, curlew, turnstone)
Thanet Coast and Sandwich Bay SPA and Ramsar	Golden plover, wintering[S] Turnstone, wintering
Benacre to Easton Bavents SPA	Marsh harrier, breeding
Colne Estuary SPA and Ramsar	Pochard, breeding[S] Ringed plover, breeding[S] Dark-bellied brent goose, wintering Black-tailed godwit *islandica*, wintering[R] Hen harrier, wintering Redshank, wintering Waterbird assemblage, wintering (cormorant, mute swan, shelduck, goldeneye, ringed plover, grey plover, sanderling, dunlin, black-tailed godwit, curlew)
Broadland SPA and Ramsar	Marsh harrier, breeding[S] Bewick's swan, wintering Hen harrier, wintering[S] Ruff, wintering[S] Gadwall, wintering[R] Shoveler, wintering Whooper swan, wintering[S] Wigeon, wintering

Site	Qualifying feature screened in
Foulness SPA and Ramsar	Sandwich tern, breeding[S] Common tern, breeding[S] Avocet, breeding[S] Ringed plover, breeding[S] Bar-tailed godwit, wintering Dark-bellied brent goose, wintering Grey plover, wintering Hen harrier, wintering[S] Knot, wintering Oystercatcher, wintering Redshank, wintering[S], passage[R] Waterbird assemblage, wintering (shelduck, dunlin, curlew)
Stodmarsh SPA and Ramsar	Gadwall, breeding[S] Gadwall, wintering[S] Bittern, wintering[S] Hen harrier, wintering[S] Shoveler, wintering[S] Breeding bird assemblage (great crested grebe, lapwing, mallard, moorhen, reed bunting, common tern, coot, shelduck, redshank, snipe, mute swan, teal, tufted duck, water rail, bearded tit, Cetti's warbler, gadwall, grasshopper warbler, Savi's warbler, sedge warbler, reed warbler) Waterbird assemblage, wintering (white-fronted goose, wigeon, mallard, pochard, tufted duck, water rail, lapwing, snipe)
Dengie SPA and Ramsar	Dark-bellied brent goose, wintering Grey plover, wintering Hen harrier, wintering[S] Knot, wintering Waterbird assemblage, wintering (dunlin, black-tailed godwit, bar-tailed godwit, dunlin, lapwing, red-throated diver, ringed plover, little egret)
Blackwater Estuary SPA and Ramsar	Pochard, breeding[S] Ringed plover, breeding Black-tailed godwit *islandica*, wintering Dark-bellied brent goose, wintering Dunlin *alpina*, wintering Grey plover, wintering Hen harrier, wintering[S] Waterbird assemblage, wintering (cormorant, shelduck, gadwall, teal, goldeneye, ringed plover, curlew, redshank)
Abberton Reservoir SPA and Ramsar	Coot, wintering[S] Gadwall, wintering Goldeneye, wintering[S] Great crested grebe, wintering[S] Mute swan, wintering[S] Pochard, wintering[S] Shoveler, wintering Teal, wintering[S] Tufted duck, wintering[S]

Site	Qualifying feature screened in
	Wigeon, wintering Waterbird assemblage, wintering (pintail, smew, cormorant, lapwing, golden plover, ruff)
Crouch and Roach Estuaries SPA and Ramsar	Dark-bellied brent goose, wintering Waterbird assemblage, wintering (shelduck, shoveler, golden plover, lapwing, dunlin, black-tailed godwit, redshank, avocet, little egret)
Breydon Water SPA and Ramsar	Common tern, breeding[S] Avocet, wintering[S] Bewick's swan, wintering Golden plover, wintering[S] Lapwing, wintering Ruff, passage[S] Waterbird assemblage, wintering (white-fronted goose, wigeon, shoveler, black-tailed godwit)
The Swale SPA and Ramsar	Dark-bellied brent goose, wintering Dunlin *alpina*, wintering[S] Redshank, passage[S] Grey plover, wintering[R] Breeding bird assemblage[S] (shelduck, mallard, moorhen, coot, lapwing, redshank, reed warbler, reed bunting) Waterbird assemblage, wintering (oystercatcher, ringed plover, redshank, shelduck, wigeon, teal, curlew)
Benfleet and Southend Marshes SPA and Ramsar	Dark-bellied brent goose, wintering Dunlin *alpina,* wintering[S] Grey plover, wintering Knot, wintering Ringed plover, wintering[S] Waterbird assemblage, wintering (Canada goose, shelduck, wigeon, teal, mallard, cormorant, oystercatcher, avocet, golden plover, lapwing, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone, black-headed gull, herring gull, great black-backed gull)
Thames Estuary and Marshes SPA and Ramsar	Avocet, wintering[S] Black-tailed godwit *islandica*, wintering[S], passage[R] Dunlin *alpina*, wintering Grey plover, wintering Hen harrier, wintering[S] Knot, wintering Redshank, wintering Ringed plover, passage Waterbird assemblage, wintering (Bewick's swan, golden plover, ruff, shelduck, teal, pintail, shoveler, tufted duck, pochard)
Medway Estuary and Marshes SPA and Ramsar	Avocet, breeding[S] Avocet, wintering[S] Dark-bellied brent goose, wintering Dunlin *alpina*, wintering Grey plover, wintering Knot, wintering

Site	Qualifying feature screened in
	Pintail, wintering Redshank, wintering Ringed plover, wintering Shelduck, wintering Breeding bird assemblage (oystercatcher, lapwing, ringed plover, redshank, shelduck, mallard, teal, shoveler, pochard, common tern) Waterbird assemblage, wintering (red-throated diver, great crested grebe, cormorant, mallard, teal, shoveler, pochard, oystercatcher, Bewick's swan, hen harrier, merlin, golden plover, short-eared owl, kingfisher)
Breckland SPA	Nightjar, breeding Stone curlew, breeding Woodlark, breeding
Dungeness, Romney Marsh and Rye Bay SPA and Ramsar	Avocet, breeding[S] Common tern, breeding[S] Sandwich tern, breeding[S] Marsh harrier, breeding[S] Aquatic warbler, passage Bewick's swan, wintering[S] Bittern, wintering[S] Golden plover, wintering[S] Hen harrier, wintering[S] Ruff, wintering[S] Shoveler, wintering Mute swan, wintering[R] Waterbird assemblage, wintering (European white-fronted goose, wigeon, gadwall, pochard, little grebe, great crested grebe, cormorant, coot, sanderling, whimbrel, common sandpiper, lapwing)
North Norfolk Coast SPA and Ramsar	Common tern, breeding Sandwich tern, breeding
The Wash SPA	Common tern, breeding[S]
Chichester and Langstone Harbours SPA	Common tern, breeding Sandwich tern, breeding
Solent and Southampton Water SPA and Ramsar	Common tern, breeding Sandwich tern, breeding
Flamborough and Filey Coast SPA	Gannet, breeding Guillemot, breeding Kittiwake, breeding Razorbill, breeding Seabird assemblage, breeding (puffin, herring gull, shag, cormorant, fulmar)
Teesmouth and Cleveland Coast SPA	Common tern, breeding[S]
Northumbria Coast SPA	Arctic tern, breeding[S]
Coquet Island SPA	Arctic tern, breeding Common tern, breeding Roseate tern, breeding Sandwich tern, breeding

Site	Qualifying feature screened in
Farne Islands SPA	Arctic tern, breeding Common tern, breeding Guillemot, breeding Sandwich tern, breeding
Forth Islands SPA	Arctic tern, breeding Common tern, breeding Gannet, breeding Lesser black-backed gull, breeding Roseate tern, breeding Sandwich tern, breeding
Imperial Dock Lock, Leith SPA	Common tern, breeding
Fowlsheugh SPA	Guillemot, breeding Kittiwake, breeding
Ythan Estuary, Sands of Forvie and Meikle Loch (extension) SPA	Common tern, breeding Sandwich tern, breeding
Loch of Strathbeg SPA	Sandwich tern, breeding
Troup, Pennan and Lion's Heads SPA	Guillemot, breeding
Inner Moray Firth SPA and Ramsar	Common tern, breeding
Cromarty Firth SPA	Common tern, breeding
East Caithness Cliffs SPA	Guillemot, breeding Herring gull, breeding Kittiwake, breeding Razorbill, breeding
Caithness and Sutherland Peatlands SPA	Red-throated diver, breeding
North Caithness Cliffs SPA	Guillemot, breeding
Pentland Firth Islands SPA	Arctic tern, breeding
Hoy SPA	Great skua, breeding Red-throated diver, breeding
Auskerry SPA	Arctic tern, breeding
Orkney Mainland Moors SPA	Red-throated diver, breeding
Rousay SPA	Arctic tern, breeding
Marwick Head SPA	Guillemot, breeding
Fair Isle SPA	Arctic tern, breeding Guillemot, breeding
West Westray SPA	Arctic tern, breeding Guillemot, breeding
Papa Westray (North Hill and Holm) SPA	Arctic skua, breeding Arctic tern, breeding
Sumburgh Head SPA	Arctic tern, breeding
Mousa SPA	Arctic tern, breeding

Site	Qualifying feature screened in
Noss SPA	Gannet, breeding Great skua, breeding Guillemot, breeding
Foula SPA	Arctic tern, breeding Great skua, breeding Guillemot, breeding Red-throated diver, breeding
Papa Stour SPA	Arctic tern, breeding
Fetlar SPA	Arctic tern, breeding Great skua, breeding
Otterswick and Graveland SPA	Red-throated diver, breeding
Ronas Hill – North Roe and Tingon SPA and Ramsar	Great skua, breeding[S] Red-throated diver, breeding
Hermaness, Saxa Vord and Valla Field SPA	Gannet, breeding Great skua, breeding Red-throated diver, breeding
Notes: [R] Qualifying feature of Ramsar only [S] Qualifying feature of SPA only For bird assemblages of SPAs, species identified as key components of the assemblage are listed in brackets if they are not qualifying features in their own right.	

11.2 Onshore

11.2.1 Onshore SPAs screening summary

185. The HRA screening of onshore ornithological qualifying features of SPA / Ramsar sites during construction, operation and decommissioning considers a precautionary screening area of a 10km buffer around the onshore project area, plus any surface and groundwater catchments located within the onshore project area which are functionally connected to sites.

186. On the basis that there is potential for indirect effects, in particular on ex situ habitats which support the qualifying features outside the site boundaries, which could result in LSE on the qualifying features of Hamford Water SPA and Ramsar, Stour and Orwell Estuaries SPA and Ramsar and Colne Estuary (Mid-Essex Coast Phase 2) SPA and Ramsar for the Project alone or in-combination, these six sites have been screened in to the HRA. No other sites have been screened in. For further information on the rationale, see Section 9.4.

11.2.2 Onshore SACs screening summary

187. The HRA screening of Habitats Directive Annex I habitats and Annex II species during construction, operation and decommissioning considers a precautionary screening area of a 10km buffer around the onshore project area, plus any surface and groundwater catchments located within the onshore project area which are functionally connected to European sites.

188. On the basis that there is potential for indirect effects which could result in LSE on the designated Annex II species feature Fisher's estuarine moth of Hamford

Water SAC for the Project alone or in-combination, this site has been screened in to the HRA.

189. All other European sites are screened out on the basis of no potential for LSE on the designated Annex I habitats or Annex II species. For further information on the rationale, see Section 10.4.

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