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Application Document 12

Proposed Development (Offshore) Habitat Regulations Appraisal Stage 1 Screening Report

Caledonia Offshore Wind Farm Ltd

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OW
OCEAN WINDS

Application Document 12 Proposed Development (Offshore) Habitat Regulations Appraisal Stage 1 Screening Report

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This document contains the following report: 'Caledonia Offshore Wind Farm. Offshore HRA Screening Report' as prepared by GoBe Consultants Ltd in September 2022. For the purpose of Consent Application, the document has been retitled to: 'Application Document 12: Proposed Development (Offshore) Habitat Regulations Appraisal Stage 1 Screening Report', alongside the addition of a new front cover.

CALEDONIA
Offshore Wind Farm

Code UKCAL1–ARP–GEN–ENV–RPT-00003

Caledonia Offshore Wind Farm

Offshore HRA Screening Report

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Title

Caledonia Offshore Wind Farm
Offshore HRA Screening Report

Code	UKCAL1–ARP–GEN–ENV–RPT-00003
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Acronyms and Abbreviations

AA	Appropriate Assessment
ADD	Acoustic Deterrent Device
BGS	British Geological Survey
BoCC	Birds of Conservation Concern
BTO	British Trust for Ornithology
C-POD	Cetacean – Porpoise Detector
cSAC	Candidate Special Area of Conservation
DECC	Department of Energy and Climate Change
DTA	David Tyldesley and Associates
ECC	Export Cable Corridor
ECOMMAS	East Coast Marine Mammal Acoustic Study
EDP	Energias de Portugal
EDPR	EDP Renewables
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
ESO	Electricity System Operator
EU	European Union
FCS	Favourable Conservation Status
FRP	Fully Restrained Platform
GBS	Gravity Based Structure
GSD	Ground Survey Distance
GW	Gigawatt

HRA	Habitats Regulations Appraisal
IAMMWG	Inter-Agency Marine Mammal Working Group
INNS	Invasive Non-Native Species
IROPI	Imperative Reasons of Overriding Public Interest
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LSE	Likely Significant Effect
MFRAG	Moray Firth Regional Advisory Group
MLWS	Mean Low Water Springs
MMMP	Marine Mammal Monitoring Programme
MPA	Marine Protected Area
MS-LOT	Marine Scotland – Licensing Operations Team
MSL	Mean Sea Level
MU	Management Unit
MW	Megawatt
NETS	National Electricity Transmission System
O&M	Operation and Maintenance
OfTI	Offshore Transmission Infrastructure
OFTO	Offshore Transmission Owner
OnTI	Onshore Transmission Infrastructure
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
pSPA	Proposed Special Area of Protection

RIAA	Report to Inform Appropriate Assessment
RSMP	Regional Seabed Monitoring Programme
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCANS	Small Cetacean Abundance in the North Sea and Adjacent Waters
SCI	Site of Community Importance
SCOS	Special Committee on Seals
SMP	Sectoral Marine Plan
SNCB	Statutory Nature Conservation Body
SNH	Scottish Natural Heritage (now NatureScot)
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UXO	Unexploded Ordnance
WeBS	Wetland Bird Survey
WTG	Wind Turbine Generator

1 Introduction

1.1 Background

1.1.1.1 In response to the Scottish Government's target of net-zero emissions of all greenhouse gases by 2045 and the aim to generate 50% of Scotland's overall energy consumption from renewable sources by 2030, Crown Estate Scotland launched the ScotWind Leasing process in 2021, which released new areas of seabed within Scottish waters for future offshore development. The ambition, as set out in the Offshore Wind Policy Statement (Scottish Government, 2020a), was to offer 11 Gigawatts (GW) of offshore capacity within a series of Plan Options identified by the Scottish Government as the most suitable areas for development as set out within the Sectoral Marine Plan (SMP) for Offshore Wind (Scottish Government, 2020b).

1.1.1.2 In January 2022, as part of the ScotWind bidding round, Ocean Winds (the Developer) was successfully awarded an Option Agreement (granting exclusive rights) to develop an offshore wind farm (OWF) within the NE4 Plan Option, which is located within the Moray Firth, off the northeast coast of Scotland. Ocean Winds (via its 100% owned subsidiary Caledonia Offshore Wind Farm Limited) is now currently progressing the proposals for this OWF, which has been named the Caledonia Offshore Wind Farm (Caledonia OWF) (see Figure 1.1). The Terms of the Agreement are dependent upon Caledonia OWF being awarded all key consents and permissions to construct and operate the OWF from the relevant regulatory authorities, including Marine Scotland.

1.1.1.3 The Array Area is located within the NE4 Plan Option and is approximately 429 km^2 in size, with the northern limit of the site being approximately 22 km from Wick and the southern limit of the site being approximately 38 km from Banff. Caledonia OWF is targeting a capacity of 2 GW for the Caledonia OWF. A maximum of 150 wind turbine generators (WTGs) will be located within the Array Area, with WTG capacities ranging from 14 to 25 Megawatts (MW).

1.1.1.4 Most of the Array Area is shallow enough to allow construction using fixed foundation technology which offers the preferred, lowest cost, lowest risk solution. Using current technology, indicatively 75% of the WTGs could be constructed using fixed foundations (this figure is likely to increase as technology advances). It is unlikely that floating foundations would be installed in water depths more suitable for fixed bottom technology. The threshold for floating technology is nominally defined as above 60 m water depth.

1.1.1.5 The Proposed Development has secured a connection to the National Electricity Transmission System (NETS). National Grid Electricity System Operator (ESO) has stated that the Grid Connection Point will be at New Deer. The Proposed Development will incorporate various Offshore Transmission Infrastructure (OfTI) within the Array Area, as well as the offshore export cables transferring power between the Array Area and preferred landfall location. The footprint of the study area assessed within this Habitats Regulations Appraisal (HRA) Screening Report includes the Array Area, the Offshore Export Cable Corridor (ECC) and potential landfall area. The Proposed Development also comprises the onshore infrastructure components located above the mean low water spring (MLWS) mark, which includes the Onshore Transmission Infrastructure (OnTI) that facilitate connection of the Proposed Development to the NETS at New Deer.

1.1.1.6 Further details of the Proposed Development are provided in Chapter 3 of the Offshore Scoping Report (Caledonia OWF, 2022), submitted to Marine Scotland Licensing Operations Team (MS-LOT) alongside this Offshore HRA Screening Report, with a summary of the design envelope provided in Table 1.1.

Table 1.1. Indicative offshore design envelope of the Proposed Development.

Description	Design Parameter
Array Area (within the NE4 Plan Option)	429 km^2, assuming an indicative split of 307 km^2 for fixed in the north section and 122 km^2 for floating in the south section. To be confirmed as part of the Environmental Impact Assessment (EIA) process.
Maximum capacity	2 GW, with an indicative split of 75% fixed and 25% floating. To be confirmed as part of the EIA.
Landfall location	Multiple landfall locations are currently being considered along the Aberdeenshire coastline of the Moray Firth, broadly between Sandend and Macduff. To be confirmed as part of the EIA.
Number of wind turbines	150 – 84 (minimum), with an indicative split of up to 111 fixed foundations and 39 floating foundations. To be confirmed as part of the EIA.
Proposed wind turbine capacity	14 – 25 MW.
Wind turbine rotor diameter	310 – 236 m (minimum).
Maximum nacelle height	200 m above Mean Sea Level (MSL).
Maximum blade tip height	350 m above MSL.
Minimum blade clearance	35 m above MSL.
Wind turbine generator (WTG) foundations	The final type and design for the WTG foundations will be subject to further site investigations, detailed design and procurement negotiations. Fixed (monopile; fully restrained platform (FRP); jacket with pin piles; jacket with suction caissons; gravity based structure (GBS)) and floating (semi-submersible; tension leg platform) foundations are all currently under consideration.
Inter-array and interconnector cables	The length and number of inter-array cables will be determined as more detailed technical work is undertaken and assessed. Total inter-array cable length is assumed to be up to 720 km. Assumed up to five interconnector cables with a total length of up to 135 km.
Export cables	Up to six export cables, with an indicative total cable length of 610 km.
Cable protection	Cables will be buried wherever practicable, with mechanical protection where intended depth of burial not achieved (e.g., concrete mattresses, rock placement, grout bags).
Offshore Substation Platform (OSP)	Up to six. The final type and design for the foundations will be subject to further site investigations and procurement negotiations, with monopile, jacket with pin piles, jacket with suction caissons and GBS currently under consideration.
Maximum OSP height	35 – 75 m above Lowest Astronomical Tide (LAT).
Length and width of OSP topsides	Length: 25 – 75 m; Width: 25 – 75 m.

450000
500000
550000
600000
6500000
6450000
6400000

Legend

- Array Area
- Offshore Export Cable Corridor

Scale at A3: 1:500,000

N

0 10 20 km

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)		
Produced:	Reviewed:	Approved:
BPHB	BJ	DH
Date: 15/09/2022	Revision: 01	
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Figure 1.1

Scoping boundaries

CALEDONIA Offshore Wind Farm

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1.2 The Developer

1.2.1.1 Ocean Winds is an international offshore wind developer, created in 2019, as a 50:50 joint venture by EDP Renewables (EDPR) and ENGIE. Both companies share the vision in which renewables, particularly offshore wind, play a key role in the global energy transition.

1.2.1.2 EDPR and ENGIE are combining their offshore wind assets and project pipeline under Ocean Winds, beginning with 1.5 GW under construction and 4.0 GW under development, with the target of reaching 5-7 GW of projects in operation or construction and 5-10 GW under advanced development by 2025. Ocean Winds' primary target markets are in Europe, the United States, South America and selected Asian countries, from where most of the growth is expected to come. The main office supporting the Proposed Development is in Scotland, based in Edinburgh.

1.2.1.3 Madrid-based EDPR is a global leader in the renewable energy sector and the world's fourth-largest wind energy producer. EDPR was created in 2007 to operate the Energias de Portugal (EDP) group's renewable power business.

1.2.1.4 ENGIE is a French multinational energy and services company, with its headquarters in La Défense, Courbevoie. It focuses on the production and supply of energy, services and regeneration. It was established in 2008 by Gaz de France and Suez.

1.2.1.5 Ocean Winds is in an advantageous position in developing the Caledonia OWF by having considerable knowledge and experience in the Moray Firth region through the development of the Moray Projects and the construction and operation of the Moray East OWF. The advantages include:

- An extensive local, regional and national network of stakeholders built through 12+ years of engagement;
- Successfully constructing the 950 MW Moray East OWF in the Moray Firth using foundation technology currently proposed for the Caledonia OWF in steel jackets.
- Closure of major contracts and the soon to be installation of XXL monopiles in the Moray Firth through the construction of the Moray West OWF;
- Potential for synergies with the Moray Firth Projects through data sharing, cost sharing and use of existing infrastructure;
- Good understanding of environmental baseline conditions through project-specific data collection/monitoring programmes and strategic research projects within the Moray Firth;
- Tried and tested mitigation measures in the Moray Firth; and
- Ongoing strategic engagement of the Caledonia team with industry and research steering groups through the involvement of both Moray projects.

1.2.1.6 These advantages will ensure the Caledonia OWF does not have a standing start and will ensure to build on the lessons learned through the development of both Moray Projects.

1.3 Purpose of the Report

1.3.1.1 The purpose of this Offshore HRA Screening Report is to inform the HRA process for the Proposed Development and support the consenting process required under the:

- Conservation (Natural Habitats &c.) Regulations 1994 (as amended);
- Conservation of Habitats and Species Regulations 2017; and
- Conservation of Offshore Marine Habitats and Species Regulations 2017.

1.3.1.2 The report provides information to enable the screening of the offshore elements associated with the Proposed Development, testing whether no likely significant effect (LSE) on European sites (UK National Site Network) and Ramsar sites of nature conservation importance, either alone or in-combination with other plans or projects, can be demonstrated. This step in the process and associated reporting requirements are further described in the following sections.

1.3.1.3 The assessment provided in this report is based on the current understanding of the existing baseline environment, as well as the current proposed scope and nature of the Proposed Development. Baseline characterisation has been completed through the review of project information associated with the Proposed Development, desk-based information from other relevant projects (including project specific surveys from Moray West, Moray East and Beatrice OWFs) and site-specific/other regional information currently available.

1.3.1.4 As the design parameters, including the Offshore ECC and preferred landfall site, are refined and as ongoing baseline site-specific and regional level environmental surveys are completed and analysed, ongoing consultation will take place with respect to the assessment of no LSE on European/Ramsar sites. This will assist with informing and underpinning any future Report to Inform Appropriate Assessment (RIAA) and any subsequent further HRA requirements. It is anticipated that a review of the Scoping Opinion received from the Regulatory Authorities, as well as the project level engagement with the ongoing iterative plan review associated with the SMP for Offshore Wind (Scottish Government, 2020b), will also aid with identifying further requirements of the RIAA. Caledonia OWF has opened discussion with other ScotWind developers in the North East Region through the creation of the North East Ornithology Group. The objective of this group is to collectively engage with the key stakeholders to understand the requirements of developers in assisting in the provision of evidence to inform the SMP, in turn influencing the RIAA. Any additional consultation for the Proposed Development will be recorded and implemented where relevant.

1.3.1.5 Given the early stage of the Proposed Development, with further site-specific investigations and environmental survey/assessment work and ongoing statutory and non-statutory consultation, this assessment will continue to evolve over time and any changes will be captured and incorporated within the RIAA that will be submitted with the consent application.

2 The HRA Process

2.1 Legislative Context

2.1.1 Habitats Directive and Habitats Regulations

2.1.1.1 A network of protected areas for specific habitats and species of importance (known as European sites) has been established by European Union (EU) member states under the Habitats and Birds Directives (Council Directive 92/43/EEC and Directive 2009/147/EC). In Scotland, these are implemented through the Conservation (Natural Habitats &c.) Regulations 1994 and the Conservation of Habitats and Species Regulations 2017 (together referred to as the Habitats Regulations) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (referred to as the Offshore Habitats Regulations). The four-stage process of determining the absence of adverse effects on European sites under the Habitats Directives/Regulations is known as a HRA.

2.1.1.2 The relevant sections of the Habitats Directive are Articles 6(3) and 6(4) (as implemented under the 1994 Habitats Regulations by Regulations 48 and 49) and as similarly covered in the 2017 Habitats Regulations and the Offshore Habitats Regulations. Under Article 6(3) of the Habitats Directive, an Appropriate Assessment (AA) is required where a plan or project is likely to have a significant effect upon a European site either individually or in combination with other reasonably foreseeable plans or projects. European sites include the following:

- Special Areas of Conservation (SACs) designated under the Habitats Directive for their habitats and/or species (except birds) of European importance; and
- Special Protection Areas (SPAs) designated under the Birds Directive for rare, vulnerable and regularly occurring migratory bird species and internationally important wetlands.

2.1.1.3 In the UK, the requirements of the Habitat Regulations also extend to the consideration of effects on:

- Sites that are proposed for designation and inclusion in the European network and sites that are currently in the process of being classified such as potential SPAs (pSPAs), candidate and possible SACs (cSACs and pSACs) and Sites of Community Importance (SCIs).

2.1.1.4 The Habitats Regulations specify, amongst other issues, how development control decisions which could directly or indirectly affect European sites are to be reached. Within the Scottish Planning Policy (Scottish Government, 2014), the Scottish Government sets out their policy that the Habitats Regulations should also apply to sites identified as Ramsar sites (under the Ramsar Convention on Wetlands of International Importance).

2.1.1.5 Article 6(3) of the Habitats Directive (92/43/EEC) states:

"*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives"*.

2.1.1.6 It is therefore necessary, in the first instance, to determine whether it is possible to conclude that there is no LSE on the site. Only where it is not possible to conclude this, does an AA need to be carried out by the competent authority. The European

Court of Justice ruling in the case of Waddenzee (Case C-127/02), stated that an AA of a project is necessary "*if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site*". It is therefore clear that if it cannot be objectively ruled out, then an effect is likely. The test is therefore negative and embeds precaution within it.

2.1.1.7 Regulation 48 of the 1994 Habitats Regulations states that a competent authority shall make an AA before any decision to give consent for any plan or project that is not directly connected with or necessary to the (conservation) management of a European site and which could likely have a significant effect on that site (either alone or in combination with other known plans or projects). An AA is therefore required for all plans or projects 'likely to have a significant effect' on a European site in view of the conservation objectives of the European site. The competent authority can only agree to the plan or project having ascertained that it will not adversely affect the integrity of the European site. In order to ascertain this, the competent authority must give regard to the manner in which the plan or project is proposed to be carried out or to any conditions or restrictions proposed for the consent or permission.

2.1.1.8 As the Proposed Development is not directly connected with or necessary to the management of a European site, an HRA is required.

2.1.2 Post-EU Exit Amendments

2.1.2.1 The UK withdrew from the EU in January 2020, and since the beginning of January 2021, the UK is no longer bound by EU legislation; however, The Scottish Parliament and the UK passed recent EU-Exit legislation[1] to ensure that Scotland's nature remains protected to at least the same standard as EU environmental standards with a further longer-term ambition to exceed these. This did result in some aspects of the Habitats Regulations being amended in Scotland, but these amendments were only to those necessary to ensure that the Habitats Regulations remained operable and to ensure that the requirements of the Habitats and Birds Directives must continue to apply to how European sites are designated and protected.

2.1.2.2 The amendments to the Habitats Regulations are set out within 'EU Exit: The Habitats Regulations in Scotland' (Scottish Government, 2020c) and include:

- European sites, European marine sites and European offshore marine sites in the UK (as defined by the Conservation (Natural Habitats, &c.) Regulations 1994 and the Conservation of Offshore Marine Habitats and Species Regulations 2017) are no longer part of the EU's Natura 2000 network. Instead, they form a UK-wide network of protected sites, referred to in the 1994 Regulations as the UK Site Network, and they retain the same protections;
- Management objectives are established for the UK Site Network (or alternatively referred to as 'National Site Network'). For such sites in Scotland (including those in Scotland's inshore and offshore waters), the Scottish Ministers must work in co-operation with the other UK administrations to manage, and where necessary, adapt the UK Site Network to contribute to the achievement of these objectives.

[1] The Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019 and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

- The objectives in relation to the UK Site Network are to:
  i. maintain or restore certain habitats and species listed in the Habitats Directive to favourable conservation status (FCS);
  ii. contribute to ensuring the survival and reproduction of certain species of wild bird in their area of distribution and to maintaining their populations at levels which correspond to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements.
- European marine sites and European offshore marine sites continue to contribute to Scotland's Marine Protected Area (MPA) network. The network also includes Nature Conservation MPAs, Sites of Special Scientific Interest (SSSIs) and Ramsar sites.
- The European Commission no longer plays a role in the designation process, or provision of opinion in certain circumstances on whether there were Imperative Reasons of Overriding Public Interest (IROPI) for granting consent for a plan or project despite a competent authority being unable (following completion of an HRA) to ascertain no adverse effect on site integrity. This now all falls under the remit of the Scottish Ministers, with advice from NatureScot and the Joint Nature Conservation Committee (JNCC).
- The Habitats Regulations now include powers to amend the annexes to the Habitats and Birds Directives (to the extent that they apply to the Habitats Regulations) and schedules of the Habitats Regulations. These powers are for the Scottish Ministers.
- There are new powers for the Scottish Ministers (in relation to the 1994 Habitats Regulations) and the Secretary of State (in relation to the Conservation of Habitats and Species Regulations 2017 and the Offshore Habitats Regulations) to issue guidance on interpreting the requirements of the Nature Directives.

2.2 The HRA Process

2.2.1.1 The European Commission's guidance on Planning for the Protection of European Sites: Appropriate Assessment (European Commission, 2001) identifies a staged process to the assessment of the effects of plans or projects on European sites. Cumulatively, these stages are referred to as an HRA, in order to clearly distinguish the whole process from the second stage within it, which is referred to as AA.

2.2.1.2 There are potentially up to four stages:

- Stage 1: Screening;
- Stage 2: AA;
- Stage 3: Consideration of Alternative Solutions; and
- Stage 4: Assessment of IROPI.

2.2.1.3 Each stage (except the last) defines the requirement for and scope of the next. This Offshore Screening Report comprises HRA Stage 1, where the identification of LSE is reported. In this context, LSE is defined as 'any effect that may reasonably be

predicted as a consequence of a plan or project that may affect the conservation objectives of the features for which the site was designated, but excluding trivial or inconsequential effects' (English Nature, 1999). Within Scottish Natural Heritage (SNH)[2] guidance (David Tyldesley and Associates (DTA), 2015) paragraph 4.3 defines LSE as 'one that cannot be ruled out on the basis of objective information. The test is a 'likelihood' of effects rather than a 'certainty' of effects'. LSE should therefore 'not simply be interpreted as 'probable' or 'more likely than not', but rather whether a significant effect can objectively be ruled out'. The HRA process is applied to both effects from the project alone (Section 5) and 'in-combination' with other plans and projects (Section 6).

2.2.1.4 If, on the best available information, potential for a LSE to a European site(s) cannot be discounted, then an AA of the effect-pathway(s) to the site is required at HRA Stage 2, where the implications for European site integrity are considered. Importantly, mitigation measures cannot be considered at HRA Stage 1; however, such measures are an integral element of the assessment at HRA Stage 2.

2.2.1.5 The latter stages become relevant if the AA cannot exclude an adverse effect on site integrity. These stages will be addressed in the event there is a negative outcome to HRA Stage 2 (AA).

2.2.1.6 Key guidance documents that have been used to inform this Offshore Screening Report include:

- SNH (2000). Natura Casework Guidance: Consideration of Proposals affecting SPA and SAC. Guidance Note Series;
- SNH Guidance Note (undated). The handling of mitigation in Habitats Regulations Appraisal – the People Over Wind CJEU judgement;
- Department of Energy and Climate Change (DECC) (2016). Guidance on when new marine Natura 2000 sites should be taken into account in offshore renewable energy consents and licences. May 2016;
- European Commission. (2001). Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC. November 2001;
- DTA (2021a). The Habitat Regulations Assessment Handbook. https://www.dtapublications.co.uk/; and
- DTA (2021b). Advice to Marine Scotland. Policy Guidance Document on demonstrating the absence of Alternative Solutions and IROPI under the Habitats Regulations for Marine Scotland. November 2021. Draft for Comment.

[2] In November 2019, it was announced that SNH would be re-branded as NatureScot; however, its legal persona and statutory functions remain unchanged.

3 Environmental Baseline

3.1 Introduction

3.1.1.1 This section provides an overview of the environmental characteristics relevant to the receptors under consideration as part of the HRA screening process, specifically:

- Benthic subtidal and intertidal ecology;
- Marine mammals;
- Offshore and intertidal ornithology; and
- Migratory fish.

3.1.1.2 The baseline information presented is not only relevant to the determination of no LSE for the Array Area, the offshore ECC and the landfall location (Figure 1.1), but also the wider search area across which sites are identified for consideration of no LSE. It is intended to provide a brief summary only to inform this HRA screening exercise (Stage 1). A more exhaustive review of baseline data is not required for this HRA screening exercise but will be completed to inform any subsequent Stage 2 assessments as required. Where site-specific information is available (or planned), this is highlighted.

3.2 Benthic Subtidal and Intertidal Ecology

3.2.1 Existing Data Sources

3.2.1.1 The following regional datasets provide the existing baseline for benthic subtidal and intertidal ecology:

- Regional Seabed Monitoring Programme (RSMP) (Cooper and Barry, 2017);
- British Geological Survey (BGS) Marine Sediment Particle Size dataset sourced from the BGS GeoIndex Offshore portal (https://www.bgs.ac.uk/map-viewers/geoindex-offshore);
- Beatrice OWF Environmental Statement (benthic ecology chapter)[3]; and
- Moray East OWF Environmental Statement (benthic ecology chapter)[4].

3.2.2 Site Specific Surveys

3.2.2.1 Extant data provides a comprehensive characterisation of benthic and intertidal ecology in and around the Array Area and Offshore ECC. Geophysical survey works are planned for the Array Area in September 2022 and Offshore ECC in March 2023. The objectives of these geophysical survey campaigns are to achieve considerable seabed coverage in determining the bathymetry, seabed infrastructure, classification and morphology, as well as the presence of any geohazards across the Array Area and Offshore ECC (further detailed surveys are planned pre-construction).

3.2.2.2 Geophysical survey outputs will be used to inform the location of the benthic ground-truthing survey campaign (currently planned for March 2023) in order to get a representative spread of samples across the seabed features identified, as well as targeting any potential conservation features to understand location and

[3] https://marine.gov.scot/ml/section-36-consent-construction-and-operation-offshore-windfarm-and-transmission-works-beatrice
[4] https://www.morayeast.com/document-library/navigate/229/144

extent. The layout of the benthic survey campaign will also be informed by pre-existing broadscale habitat mapping. Grab samples and drop-down video (DDV) surveillance will be used to characterise the Array Area and Offshore ECC. Samples will be used to classify the sediment type present across the study area, as well as monitor contaminants and the fauna that are present. Data from these surveys will be used to confirm or dispute existing data from across the survey area.

3.2.3 Baseline

3.2.3.1 A total of three broadscale sediment habitats have been identified within the Array Area (EMODnet, 2021). The area is primarily characterised by 'deep circalittoral sand' with smaller areas of 'circalittoral coarse sediment' to the east and west of the Array Area and a limited area of 'deep circalittoral mud' in the eastern most region of the Array Area. Reporting for the Beatrice OWF (located west of the Proposed Development) indicates that the sediment type across the entire survey area was predominantly made up of sandy sediments with mud and gravel sediments representing a very small proportion of the total sediment composition. Several species of conservation importance were sampled during the Beatrice OWF surveys including ocean quahog (*Arctica islandica*), northern horse mussel (*Modiolus*), polychaete (*Goniadella gracilis*), amphipod (*Monocorophium sextonae*) and Japanese skeleton shrimp (*Caprella mutica*) (Beatrice Offshore Wind Farm Ltd, 2022).

3.2.3.2 The Offshore ECC is dominated by deep circalittoral sand with some limited patches of circalittoral coarse sediment. There is a band of deep circalittoral mud towards the south of the Offshore ECC. The inshore region of the Offshore ECC is dominated by circalittoral coarse sediment with smaller areas of infralittoral coarse sediment and circalittoral fine sand (EMODnet, 2021). Within the Offshore ECC, faunal clusters have been identified and sampled within the intertidal area, predominantly across the deep circalittoral mud sediment. Clusters include Spinnidae, Glyceridae, Nemertea, Amphyiuridae, Nephtyidae and Lumbrineridae (Cooper and Barry, 2017).

3.2.3.3 The Offshore ECC for the Moray East OWF follows a very similar route to the Offshore ECC of the Proposed Development. Biotopes sampled during site-specific surveys of the Moray East OWF indicate that the region was predominantly made up of homogenous sedimentary habitat with some areas of muddy sand, fine sandy mud, mixed sandy gravels. The fauna that were recorded from grab samples included seapens, *Pennatula phosphorea* and *Virgularia mirabilis*. The Offshore ECC of the Moray East OWF was largely made up of fine, sandy mud with some patches of more mixed coarse sand, gravel and shell material. Further inshore the sediment type was more varied with mixed sediment types being recorded including cobbles, boulders and exposed bedrock (Moray Offshore Renewables Ltd, 2011).

3.3 Marine Mammals

3.3.1 Existing Data Sources

3.3.1.1 The following datasets provide the existing baseline for marine mammals:

- Atlas of Cetacean Distribution in North-west European Waters 'Joint Cetacean Database' (Reid *et al*., 2003);
- Small Cetacean Abundance in the North Sea and Adjacent Waters (SCANS II and SCANS III) (Hammond *et al*., 2021);
- Special Committee on Seals (SCOS) Reports;

- Seal telemetry data (held by SMRU);
- Updated abundance estimates for cetacean management units in UK waters, JNCC Report No. 680 (Revised March 2022) (Inter-Agency Marine Mammal Working Group (IAMMWG), 2022);
- Revised Phase III Data Analysis of Joint Cetacean Protocol (Paxton et al., 2016);
- Marine mammal species accounts (JNCC, 2013);
- Reports on marine mammal distribution (e.g., Waggitt *et al*., 2019; Hague *et al*., 2020; Robinson *et al*., 2017; Williamson *et al*., 2016; Carter *et al.,* 2022);
- Reports and papers from Marine Scotland Science ECOMMAS monitoring (see https://marine.gov.scot/information/east-coast-marine-mammal-acoustic-study-ecommas);
- Reports and papers from studies undertaken for other OWF developments (e.g., Beatrice, Moray East and Moray West OWFs) in the Moray Firth through the Moray Firth Marine Mammal Monitoring Programme (MMMP); and
- Report and studies undertaken as part of the Moray Firth Regional Advisory Group (MFRAG) and East Coast Marine Mammal Acoustic Study (ECOMMAS).

3.3.2 Site-specific Surveys

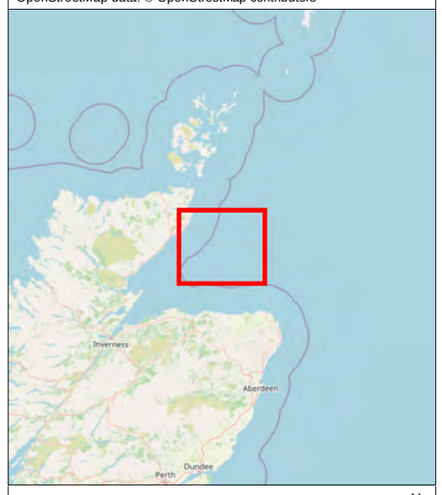
3.3.2.1 Site-specific digital aerial surveys are currently being undertaken (between May 2021 to April 2023) covering the Array Area plus a 4 km buffer (Figure 3.1). Flight lines are spaced approximately 2.6 km apart with approximately 15% coverage, at a flight heigh of 1,350 ft. The images will be captured at a 1.5 cm ground survey distance (GSD) resolution. Post-construction monitoring surveys were undertaken between May and July 2022 for the Moray East OWF (separate data collection to the Proposed Development), which included the Moray East OWF Array Area plus a 10 km buffer (see Figure 3.2). To compliment this survey work, Caledonia OWF has undertaken additional surveys in April and August 2022 to increase the data collection over the full breeding season for ornithological features in these adjacent areas to the west of the Proposed Development (see 'Caledonia Additional Flight Lines' in Figure 3.1). Once the results from these aerial surveys are processed and analysed, data from the site-specific surveys will be used to characterise marine mammal occurrence in the Array Area, as well as provide an estimation of species density in the area (where data allow).

3.3.2.2 No additional site-specific marine mammals surveys are planned to be undertaken at this stage. The extant information from over 10 years of observation in the Moray Firth from other projects (see Section 3.3.1) combined with the site-specific surveys described above are considered to provide enough information for the pre-consent process. Any monitoring or surveys will be continued post-consent as required. Acoustic noise propagation modelling associated with pile-driving during construction will be undertaken to inform the RIAA to understand potential impacts to marine mammals (and fish and shellfish); however, this is not available to inform this Offshore HRA Screening Report.

500000
525000
550000
6475000
6450000
6425000
Beatrice
Moray East
Moray West

Legend

- Array Area
- Offshore Export Cable Corridor
- Operational Offshore Wind Farm
- Consented Offshore Wind Farm
- Caledonia Flight Lines
- Caledonia Additional Flight Lines



Scale at A3: 1:225,000

0 5 10 km

N

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)		
Produced:	Reviewed:	Approved:
BPHB	JG	DH
Date: 15/09/2022	Revision: 01	
REF: UKCAL1_GO_WNF_HRA_MAP_00040		

Figure 3.1

Transects for aerial site-specific surveys for the Proposed Development

CALEDONIA Offshore Wind Farm

OW OCEAN WINDS

475000
500000
525000
550000
6475000
6450000
6425000
Beatrice
Moray East
Moray West

Legend

- Array Area
- Offshore Export Cable Corridor
- Operational Offshore Wind Farm
- Consented Offshore Wind Farm
- Moray East 10km Buffer
- Moray East Aerial Survey Transects

Scale at A3: 1:300,000

0 5 10 km

N

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)		
Produced:	Reviewed:	Approved:
BPHB	JG	DH
Date: 15/09/2022	Revision: 01	
REF: UKCAL1_GO_WNF_HRA_MAP_00047		

Figure 3.2

Moray East OWF aerial survey transects and buffer

CALEDONIA Offshore Wind Farm

OW OCEAN WINDS

3.3.3 Baseline

3.3.3.1 The SCANS-III surveys identified harbour porpoise, bottlenose dolphin, white-beaked dolphin and minke whale within the Moray Firth. Of the four identified species, two are Annex II species (harbour porpoise and bottlenose dolphin) and, therefore, only these species are considered as part of the baseline. Harbour porpoise have a density of 0.152 animals per km^2 within the area, and bottlenose dolphins have a density of 0.0037 animals per km^2. Both harbour and grey seals are noted to be within in the area, with a count of 1,025 harbour seals and 1,564 grey seals were counted in 2019 (SCOS, 2021).

3.3.3.2 Harbour porpoise are the smallest and most abundant cetacean species in UK and Scottish waters (Reid *et al*., 2003; Hammond *et al*., 2017), with a population distributed throughout the Moray Firth (Brookes *et al*., 2013; Williamson *et al*., 2022). Data collected from the outer Moray Firth, which assessed the impact of seismic surveys on marine mammals, supported the relatively high occurrence of porpoises throughout the Firth with high detection rates of porpoises using autonomous passive acoustic detectors (Cetacean – Porpoise Detector (CPODs); Bailey *et al*., 2010). Spatial modelling for harbour porpoise using sightings data from various projects by the University of St Andrews, Beatrice Offshore Wind Ltd and Moray Offshore Renewables Ltd, has shown patchy distribution within the Moray Firth, with reductions in density during piling events for OWFs (Graham *et al*., 2019; Benhemma-Le Gall *et al*., 2021), and relatively higher densities near the coastline as well as higher densities in the northeast of the outer Moray Firth (Moray Offshore Renewables Ltd, 2012).

3.3.3.3 The Array Area for the Proposed Development is located within both the Greater North Sea Management Unit (MU) and Coastal East Scotland MU for bottlenose dolphins. The Greater North Sea MU contains an estimated 2,022 bottlenose dolphins, but these are considered to be of the offshore eco-type (which are considered separate to the coastal ecotype of the Coast East Scotland population). There are almost no data available on the offshore ecotype, other than what is presented in the Waggitt *et al*. (2019) maps (using the JCP data) and sightings from the SCANS-III surveys (Hammond *et al*., 2017; 2021). The Coastal East Scotland MU contains a resident, protected population of 224 bottlenose dolphins (IAMMWG, 2022; based on the weighted mean of annual estimates for 2015-2019 from Arso Civil *et al*., 2021). This protected population has a range that expands beyond the Moray Firth SAC, along the east coast of Scotland to the Tay Estuary and adjacent waters and the Firth of Forth (with recent photo-ID matches along the east coast of England and further into the North Sea (Hoekendijk *et al*., 2021) though this data are currently limited). Currently, only around 50% of the population use the Moray Firth SAC in the majority of years (Cheney *et al.,* 2014; 2018; Graham *et al*., 2016; Arso Civil *et al*., 2021). In Scottish waters, this population is primarily found within 2 km of the coast and in water depths <20 m (Quick *et al*., 2014). Therefore, it is expected that there will be few, if any, individuals present within the offshore areas of the project; however, they are anticipated to be present within the nearshore area of the offshore ECC and the wider regional area.

3.3.3.4 Grey seals are the larger and more abundant of the two species of seal resident in UK waters. They haul-out on land to rest, moult and breed and forage at sea where they range widely, frequently travelling for up to 30 days and using offshore waters up to 100 km from haul-out sites (Jones *et al*., 2015; SCOS, 2021). Grey seal haul-out counts during the August harbour seal moult surveys provide a useful source of information on the distribution of grey seals outside of the grey seal breeding

season. The number of pups throughout Britain has grown steadily since the 1960s, but there is clear evidence that the population growth is levelling off in all areas except the central and southern North Sea where growth rates remain high (Thomas *et al*., 2019; SCOS, 2021).

3.3.3.5 Harbour seals are the smaller of the two species of seal resident in UK waters. They forage at sea and haul-out on land to rest, moult and breed. Harbour seals normally feed within 40 to 50 km around their haul-out sites (Jones *et al*., 2015; Carter *et al*., 2022). Recent studies suggest the overall UK population has remained stable since the 1990s; with an increase in the Moray Firth MU compared to previous years (Thompson *et al*., 2019; SCOS, 2021). The Proposed Development (Array Area and Offshore ECC) is generally predicted to lie within a low-density area for harbour seals, with slightly higher densities of seals anticipated along the coastal boundary of the Offshore ECC.

3.3.3.6 As determined by the SCANS-III survey and SCOS reports, no other Annex II marine mammal species aside from the four identified above are likely to occur within the Proposed Development study area on a regular basis. Therefore, no other species are considered within this baseline or assessed within the report. Additional detail on baseline for these species can be found within the marine mammal chapter of Offshore Scoping Report (Caledonia OWF, 2022; submitted to MS-LOT alongside this Offshore HRA Screening Report).

3.4 Offshore and Intertidal Ornithology

3.4.1 Existing Data Sources

3.4.1.1 As mentioned previously, site specific digital aerial surveys (plus a 4 km buffer) are currently being undertaken (Figure 3.1); however, survey data are not available to inform this screening exercise. These data will however be analysed and used within the RIAA. The following regional datasets therefore provide the existing baseline for offshore ornithology:

- Baseline reports of other OWF developments (e.g. Moray East OWF, Moray West OWF and Beatrice OWF);
- Beatrice OWF pre-construction (May to August 2015) and post-construction (May to July 2019) aerial survey reports (further data collection currently ongoing);
- Moray East OWF pre-construction (May to July 2018) and post-construction (ongoing) aerial survey reports, as well as bird tagging (greater black-backed gull, fulmar, kittiwake, guillemot and razorbill) at the East Caithness Cliffs SPA (2014);
- NatureScot designated sites;
- Seabirds national colony census data (British Trust for Ornithology (BTO) Seabird Monitoring Programme);
- BTO Wetland Bird Survey (WeBS) data;
- Reports on seabird distribution (such as: Stone *et al*., 1995; Brown and Grice, 2005; Kober *et al*., 2010; Waggitt *et al*., 2019; Cleasby *et al*., 2020; Bradbury *et al*., 2014; Davies *et al*., 2021, HiDef Ltd., 2015) and seabird tracking data; and

- Reports of bird movements during breeding season foraging trips and migration (such as: Wernham *et al*., 2002; Thaxter *et al*., 2012; Wright *et al*., 2012; Furness *et al*., 2018; Woodward *et al*., 2019; Wakefield *et al*., 2013; 2017) and seabird tracking studies conducted by Moray East and Moray West.

3.4.1.2 Other confidential survey information or data from previous Ocean Winds projects will be drawn on (for example Moray East and Moray West), if appropriate, to inform the RIAA. This information will be clearly defined within relevant documents, if used. Examples of data include:

- Moray East OWF:
  - Project Tag, which aimed to identify the constraints of existing bird tagging, define the functional scope of optimised tags, and to engage the tag manufacturers that are interested in demonstrating their technologies (July 2017).
  - Pre-construction Aerial Survey Report – 2018 Breeding Season.
  - Aerial surveys – Data collected during six aerial surveys between May and July 2011 covering a wide strip from the East Caithness Cliffs and North Caithness Cliffs SPAs to the southern coast of the outer Moray Firth.
- Moray West OWF:
  - Pre-Construction Digital Aerial Survey – Monthly: April (March) – October 2021 and 2022.
  - Pre-Construction Great Black Back Gulls: cliff observations (East Caithness Cliffs SPA) (April – July 2022).

3.4.2 Site-specific Surveys

3.4.2.1 As noted above for marine mammals, site-specific digital aerial surveys are currently being undertaken (between May 2021 to April 2023) covering the Array Area plus a 4 km buffer (Figure 3.1). Post-construction monitoring surveys were undertaken between May and July 2022 for the Moray East OWF (separate data collection to the Proposed Development), which included the Moray East OWF Array Area plus a 10 km buffer (see Figure 3.2). To compliment this survey work, Caledonia OWF has undertaken additional surveys in April and August 2022 to increase the data collection over the full breeding season for ornithological features in these adjacent areas to the west of the Proposed Development (see 'Caledonia Additional Flight Lines' in Figure 3.1). It is considered that these data, while not processed to inform this Offshore HRA Screening Report, would likely provide support for a reduced risks from displacement impact assessments for gannet, kittiwake, guillemot, razorbill and puffin and would add further information to the monitoring results from Moray East OWF, providing a complete breeding season data on the effects of Moray East OWF on these species.

3.4.2.2 No additional site-specific ornithological surveys are planned to be undertaken at this stage. The extant information from over 10 years of observation in the Moray Firth from other projects (see Section 3.4.1) combined with the site-specific surveys described above provide enough information for the pre-consent process. Any monitoring or surveys will be continued post-consent as required.

3.4.3 Baseline

3.4.3.1 The Moray Firth represents mainland Britain's most northerly large estuary, with numerous firths, inlets, and sandy bays providing key sheltered refuges and feeding spots for breeding, nonbreeding and migratory seabirds and waterbirds. Most of the area comprises shallow (<20 m) water over a sandy substrate, supporting a wide variety of pelagic and demersal fish and acting as an important fish spawning ground and nursery site (Marine Scotland, 2020a). The area also supports shellfish (e.g., Norway lobster and Blue mussel) and bivalves which are important prey species for visiting waterbirds (Marine Scotland, 2020a).

3.4.3.2 This area is especially important for populations of non-breeding and migratory species, regularly supporting both non-breeding populations of European importance (e.g., divers and grebes), and migratory species of European importance (e.g., ducks and shags), alongside hosting internationally important numbers of wintering birds many of which have migrated thousands of miles from breeding grounds in northern Europe and western Siberia (Marine Scotland, 2020a). It also provides a key feeding area for birds during spring and autumn migration periods, moving between breeding grounds at high latitudes and wintering grounds further south within the UK and beyond. Coastlines of the Moray Firth also provide important nesting habitat for seabirds during the breeding season, with a range of seabirds (e.g., gannet, guillemot, and kittiwake) returning in spring and summer each year (Royal Society for the Protection of Birds (RSPB), 2014). In recognition of these ornithological interests there are several designated sites situated around the Moray Firth.

3.4.3.3 The Array Area does not directly overlap with any ornithological designations. However, as breeding seabirds can travel considerable distances when foraging it is necessary to give consideration to designated sites beyond the Array Area. The extent of connectivity between seabird SPAs and offshore windfarms during the breeding season is largely a function of distance and species-specific foraging ranges. The potential for birds from breeding colonies to interact offshore with the Proposed Development has been identified based on foraging distances (Woodward *et al*., 2019). Additionally, bird species (including seabirds, waterfowl and waders) may also have connectivity to the Proposed Development during migration. Patterns of migration has been used to infer which terrestrial/coastal sites are designated for non-breeding species that may pass through the Proposed Development during migration (Wright *et al*., 2012).

3.4.3.4 The Offshore ECC slightly overlaps with Moray Firth SPA. The SPA qualifies under Article 4.1 by regularly supporting a non-breeding population of European importance of the following Annex 1 species:

- Great northern diver *Gavia immer* (a mean peak annual non-breeding population of 144 individuals (5.8% of the Great Britain population) for the years 2001/02-2006/07);
- Red-throated diver *Gavia stellata* (a mean peak annual non-breeding population of 324 individuals (1.9% of the Great Britain population) for the years 2001/02-2006/07); and
- Slavonian grebe *Podiceps auritus* (a mean peak annual non-breeding population of 43 individuals (3.9% of the Great Britain population) for the years 2001/02-2005/06).

3.4.3.5 The site further qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory species:

- Greater scaup *Aythya marila* (a mean peak annual non-breeding population of 930 individuals (17.9% of the Great Britain population) for the years 2001/02 to 2005/06);
- Common eider *Somateria mollissima* (a mean peak annual non-breeding population of 1,733 individuals (2.9% of the Great Britain population) for the years of 2001/02 to 2006/07);
- Long-tailed duck *Clangula hyemalis* (a mean peak annual non-breeding population of 5,001 individuals (45.5% of the Great Britain population) for the years of 2001/02 to 2005/6);
- Common scoter *Melanitta nigra* (a mean peak annual non-breeding population of 5,479 individuals (5.5% of the Great Britain population) for the years 2001/02 to 2005/06);
- Velvet scoter *Melanitta fusca* (a mean peak annual non-breeding population of 1,488 individuals (59.5% of the Great Britain population) for the years 2001/02 to 2005/06);
- Common goldeneye *Bucephala clangula* (a mean peak annual non-breeding population of 907 individuals (4.5% of the Great Britain population) for the years 2001/02 to 2005/06);
- Red-breasted merganser *Mergus serrator* (a mean peak annual non-breeding population of 151 individuals (1.8% of the Great Britain population) for the years of 2001/02 to 2005/06); and
- European shag *Phalacrocorax aristotelis* (at least 6,462 individuals during the non-breeding season (3.2% of the biogeographic population and 5.9% of the Great Britain population) and 5,494 individuals during the breeding season ((2.7% of the biogeographic population & 10.2% of the Great Britain population) for the years 1980-2006).

3.4.3.6 The full list of ornithological species likely to be taken forward for HRA will be those which are recorded during surveys within the Proposed Development and which are considered to be at potential risk either due to their abundance, potential sensitivity to wind farm impacts or due to biological characteristics (e.g., commonly fly at rotor heights) which make them potentially susceptible. Prior to the completion of the ongoing site-specific digital aerial surveys, a list of species most likely to be considered has been determined from the data sources as outlined in the "Existing Data Sources" and are summarised in Table 3.1. This list will be updated following the completion of the site-specific surveys. Additionally, detail on ornithological species identified in previous surveys within the area (Moray East and Moray West baseline surveys, and Moray East and Beatrice pre-construction and post-construction surveys) can be found within the offshore ornithology chapter of the Offshore Scoping Report (Caledonia OWF, 2022; submitted to MS-LOT alongside this HRA screening report). The common species identified have been included within Table 3.1.

Table 3.1. Species most likely to be considered within the HRA, and their conservation values.

Receptor Species	Conservation Values
Greater scaup	Moray Firth SPA migratory feature. BoCC Red listed, IUCN Red List 'Least Concern' status.
Common eider	Moray Firth SPA migratory feature. BoCC Amber status, IUCN Red List 'Near Threatened' status.
Velvet scoter	Moray Firth SPA migratory feature. BoCC Red status, IUCN Red List 'Vulnerable' status.
Common scoter	Moray Firth SPA migratory feature. BoCC Red status, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Long-tailed duck	Moray Firth SPA migratory feature. BoCC Red status, IUCN Red List 'Vulnerable' status.
Common goldeneye	Moray Firth SPA migratory feature. BoCC Red status, IUCN Red List 'Least Concern' status.
Red-breasted merganser	Moray Firth SPA migratory feature. BoCC Amber status, IUCN Red List 'Least Concern' status.
Slavonian grebe	Moray Firth SPA migratory feature. BoCC Red listed, Birds Directive Annex I, IUCN Red List 'Vulnerable' status.
Kittiwake *Rissa tridactyla*	Birds of Conservation Concern (BoCC) (Eaton *et.al*, 2015) Red listed, Birds Directive Migratory Species, International Union for Conservation of Nature (IUCN) Red List 'Vulnerable' status.
Great black-backed gull *Larus marinus*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Herring gull *Larus argentatus*	BoCC Red listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Lesser black-backed gull *Larus fuscus*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Common tern *Sterna hirundo*	BoCC Amber listed, Birds Directive Annex I, IUCN Red List 'Least Concern' status.
Arctic tern *Sterna paradisaea*	BoCC Amber listed, Birds Directive Annex I, IUCN Red List 'Least Concern' status.
Great skua *Stercorarius skua*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Guillemot *Uria aalge*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Razorbill *Alca torda*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Puffin *Fratercula arctica*	BoCC Red listed, Birds Directive Migratory Species, IUCN Red List 'Vulnerable' status.
Red throated diver	Moray Firth SPA feature. BoCC Green listed, Birds Directive Annex I, IUCN Red List 'Least Concern' status.
Great northern diver	Moray Firth SPA feature. BoCC Amber listed, Birds Directive Annex I, IUCN Red List 'Least Concern' status.
Storm petrel *Hydrobates pelagicus*	BoCC Amber listed, Birds Directive Annex I, IUCN Red List 'Least Concern' status.
Fulmar *Fulmarus glacialis*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Manx shearwater *Puffinus puffinus*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
Gannet *Morus bassanus*	BoCC Amber listed, Birds Directive Migratory Species, IUCN Red List 'Least Concern' status.
European shag	Moray Firth SPA feature. BoCC Red listed, Birds Directive Annex I, IUCN Red List 'Least Concern' status.

3.5 Migratory Fish

3.5.1 Existing Data Sources

3.5.1.1 The following regional datasets provide the existing baseline for migratory fish:

- Environmental Statements from other offshore wind farm developments and aggregates dredging sites including;
  - Moray East OWF (ranging from 2011 to 2012 and including technical reports, sandeel surveys and Environmental Statement); and
  - Beatrice OWF (ranging from 2011 to 2021 and including an EIA report, technical reports, sandeel cod and herring surveys, diadromous fish monitoring and post construction monitoring).
- Environment Agency fish pass counts; and
- Information on species of conservation interest (JNCC).

3.5.2 Site Specific Surveys

3.5.2.1 Extant data provides a comprehensive characterisation of fish species collected over a long-time series across the Moray Firth. With the numerous EIA and post consent monitoring studies completed for Moray East and Beatrice and the subsequent research completed with respect to migratory fish movements (through smolt and adult salmon/sea trout tagging and acoustic tracking) the migratory fish communities within the Moray Firth are better documented and more understood in terms of general population dynamics, presence and behaviour during migration and as such no site-specific surveys are proposed for migratory fish.

3.5.3 Baseline

3.5.3.1 A wide range of species use the area as a spawning area including cod (*Gadus morhua*), lemon sole (*Microstomus kitt*), nephrops (*Nephrops norvegicus*), plaice (*Pleuronectes platessa*), sandeels (*Ammodytes marinus*), sprat (*Sprattus sprattus*), and whiting (*Merlangius merlangus*). Several species also use the area as a nursey ground including cod, blue whiting (*Micromesistius poutassou*), herring (*Clupea harengus*), haddock (*Melanogrammus aeglefinus*), ling (*Molva molva*), hake (*Merluccius merluccius*), angler fish (*Lophius piscatorius*), mackerel (*Scomber scombrus*), plaice (*Hippoglossoides platessoides*), whiting, saithe (*Pollachius virens),* lemon sole, sandeel, sprat, spurdog (*Squalus acanthias*), tope (*Galeorhinus galeus*), thornback ray (*Raja clavata*), spotted ray (*Raja montagui*) and nephrops.

3.5.3.2 With respect to Annex II species as designated within the Habitats Regulations, the key species of note are Atlantic salmon (*Salmo salar*), Allis shad (*Alosa alosa*), twaite shad (*Alosa fallax*), river lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*) and European eel (*Anguilla anguilla*). There are a number of species known to migrate through the Moray Firth that are considered to be of conservation interest and of relevance to the Proposed Development. These include the Annex II species Atlantic salmon, river and sea lampreys, European eel and the allis and twaite shads.

3.5.3.3 Should additional data of relevance to the migratory fish screening emerge, it will be taken into account within the RIAA.

4 Site Selection

4.1 Site Selection Process

4.1.1.1 Given the nature and scale of the Proposed Development and the number of European sites that could potentially be affected, the HRA screening is fronted by an initial site selection process, to identify which sites and features require consideration within the screening process. This is achieved through a receptor-based approach with a source-pathway-receptor methodology, where a receptor can only be impacted by an effect if a pathway exists through which the effect can be transmitted between the source activity and the receptor.

4.1.1.2 This step to the process essentially provides a long list of designated sites identified on the basis of potential spatial connectivity to the Proposed Development, to be taken forward for consideration of no LSE. The potential effects associated with the construction, operation and maintenance (O&M) and decommissioning of the Proposed Development are presented in Section 5, as well as a summary of all designated sites for each receptor group. Where some designated sites are designated for features covering multiple receptor groups, the site has been repeated in all relevant sections below, with only the features relevant to the specific receptor group presented in the relevant section. The site selection process is described below on a receptor group basis.

4.2 Benthic Subtidal and Intertidal Ecology

4.2.1.1 An initial site selection range of 50 km from the Proposed Development was applied to identify all designated sites with benthic subtidal and intertidal ecology features. A subsequent precautionary range of 20 km was applied as the distance threshold for LSE, based on the maximum potential range for any impacts caused by the Proposed Development on sites with benthic subtidal and intertidal ecology features. This is based on the impact with the largest zone of influence which is considered to be increased suspended sediment concentrations and deposition. A precautionary 20 km range is applied in the absence of site-specific physical process assessment information. That range will be confirmed (or updated if relevant) through subsequent technical reporting (specifically marine and coastal processes).

4.3 Marine Mammals

4.3.1.1 The marine mammal site selection process applied is dependent on the species in question and their relevant MUs. The site selection process is concerned with the four Annex II marine mammal species included for which SACs may be designated, with the relevant MUs defining the study area for each species, as described in Table 4.1.

Table 4.1. Marine mammal receptor Management Units (MUs).

Receptor Species	Relevant MU
Harbour porpoise	North Sea MU
Bottlenose dolphin	Coastal East Scotland MU and Greater North Sea MU
Grey seal	Moray Firth MU and the North Coast and Orkney MU
Harbour seal	Moray Firth MU and the North Coast and Orkney MU

4.3.1.2 As a precautionary measure, all designated sites for marine mammal species within these MUs are considered within the screening stage. Should wider connectivity be evident (beyond the range of the MU), then that will also be taken into consideration for screening.

4.4 Offshore and Intertidal Ornithology

4.4.1.1 Initial site selection for offshore and intertidal ornithology identified all European and national site network sites (SPAs and Ramsar sites) with designated ornithology features (both breeding/non-breeding seabirds and waterbirds) located within a range defined by the criteria outlined in Table 4.2. Appendix A contains an ornithology screening table which considers all UK coastal SPA and Ramsar sites and identifies those sites where a designated breeding and/or non-breeding feature falls into the criteria outlined within Table 4.2. For sites where no species are identified within the criteria outlined in Table 4.2 (no pathway of interaction with the Proposed Development exists), these are not considered further for screening and are greyed out. The resulting sites with a pathway of interaction with the Proposed Development as shown in Appendix A are considered in Section 5.4.

4.4.1.2 The bird species likely to occur within the Proposed Development boundary can be grouped into a series of categories for this high-level screening process. This categorisation is based on biological relationships related to breeding biology, feeding, habitat use and migratory pathways. The categories are:

- Breeding seabirds;
- Breeding waterbirds;
- Non-breeding seabirds; and
- Wintering waterbirds.

Table 4.2. Screening site selection criteria for offshore and intertidal ornithology.

Criteria	Definition	Relevant Distance/Range to Determine Connectivity with Qualifying Features
Criteria 1A	European and Ramsar sites which have physical overlap with Array Area.	Overlap between designated site and Array Area
Criteria 1B	European and Ramsar sites which have physical overlap with Offshore ECC.	Overlap between designated site and Offshore ECC
Criteria 2	European and Ramsar sites that occur within a defined range of effect (in this case mean of the maximum foraging range +1 Standard Deviation, hereafter referred to as MMF+1SD), the Proposed Development. This Criteria only identifies sites with receptors that are interest features in the breeding season since it is only at that part of the year that a numeric range can be stated based on foraging distances from the designated site. Consequently, only breeding features of relevant SPAs/Ramsars are listed in Table 4.3 (with a full list of all features documented in Appendix A).	MMF+1SD, Woodward *et al*. (2019) provides the most up-to-date collation of seabird foraging ranges based on multiple individuals from numerous study colonies. Table 4.3 provides an overview of Woodward *et al*. (2019) foraging ranges.
Criteria 3	European and Ramsar sites which occur within range of the maximum expected extent of displacement/disturbance due to Project activities.	Intertidal: 0.5 km Offshore: 4 km (seaducks) 10 km (divers) (ranges based on advice from JNCC, 2022)
Criteria 4	Designated sites for breeding and non-breeding interest features that might pass through the Array Area on migration or in winter. Relevant breeding SPAs for each species from colonies located along the North-eastern seaboard of the UK and non-breeding SPA features that are located within the migratory pathways identified by Wright *et al*. (2012) and other relevant information sources) (Table 4.4). These SPAs (and Ramsars where relevant) have been carried forward to the determination of no LSE stage if a pathway has been identified.	North-eastern seaboard of the UK. Those located within the migratory pathways identified by Wright *et al*. (2012) etc.

Table 4.3. Mean-maximum foraging range, standard deviation and mean-maximum foraging range +1SD of UK breeding seabird species used to screen against Criteria 2 (Woodward et al., 2019).

Species	Mean-max Foraging Range (km)	Standard Deviation (km)	Mean-max +1SD (km)
Arctic tern	25.7	14.8	40.5
Arctic skua[5]	62.5	17.7	80.2
Atlantic puffin	137.1	128.3	265.4
Black-headed gull	18.5	-	18.5
Black-legged kittiwake	156.1	144.5	300.6
Common eider	21.5	-	21.5
Common guillemot	73.2	80.5	153.7
Common gull	50	-	50
Common tern	18.0	8.9	26.9
Cormorant	25.6	8.3	33.9
European shag	13.2	10.5	23.7
European storm-petrel	336	-	336
Great black-backed gull	73	-	73
Great skua	443.3	487.9	931.2
Herring gull	58.8	26.8	85.6
Lesser black-backed gull	127	109	236
Little tern	5	-	5
Manx shearwater	1346.8	1018.7	2365.5
Mediterranean gull	20	-	20
Northern fulmar	542.3	657.9	1200.2
Northern gannet	315.2	194.2	509.4
Razorbill	88.7	75.9	164.6
Red-throated diver	9	-	9
Roseate tern	12.6	10.6	23.2
Sandwich tern	34.3	23.2	57.5

[5] Arctic skua foraging range is taken from Thaxter *et al.* (2012).

Table 4.4. Non-breeding waterbird SPA and Ramsar sites included in site selection.

Site Code	Site Name	Distance from Array Area (km)	Category of Relevant Interest Feature
UK9020313	Moray Firth SPA	29.3	Non-breeding waterbirds
UK9001624	Inner Moray Firth SPA	100.4	Non-breeding waterbirds
UK13025	Inner Moray Firth Ramsar	100.4	Non-breeding waterbirds
UK9001625	Moray and Nairn Coast SPA	53.3	Non-breeding waterbirds
UK13048	Moray and Nairn Coast Ramsar	53.3	Non-breeding waterbirds
UK9001623	Cromarty Firth SPA	95.2	Non-breeding waterbirds
UK13009	Cromarty Firth Ramsar	95.2	Non-breeding waterbirds
UK9001622	Dornoch Firth and Loch Fleet SPA	77.0	Non-breeding waterbirds
UK13011	Dornoch Firth and Loch Fleet Ramsar	77.0	Non-breeding waterbirds

4.5 Migratory Fish

4.5.1.1 Following the standard approach adopted by other OWF developments, a highly precautionary range of 100 km from the relevant estuary mouth has been considered for the site selection process. Underwater noise is considered to be the impact with the largest range affecting migratory fish and a screening distance of 100 km is considerably greater than the potential noise footprint of the Proposed Development; therefore, 100 km is considered a precautionary and inclusive range for the screening process.

5 Screening

5.1.1.1 For the purpose of this screening exercise, the maximum design scenario is based on the current project description described in Table 1.1 (up to 150 WTGs). On a precautionary basis, the potential effects discussed below consider the larger impacts anticipated to occur from fixed foundation turbines. Where relevant, potential effects specific to only one foundation type (i.e., fixed of floating) are identified.

5.2 Benthic Subtidal and Intertidal Ecology

5.2.1.1 The study area for benthic subtidal and intertidal ecology receptors for the Proposed Development with respect to HRA Stage 1 is defined by the maximum range of relevant effects from the Proposed Development. The potential effects to be considered are identified in Table 5.1, including the types of activity that could result in such effects at different stages of development. The maximum range of all such effects is defined as 20 km (as described in Chapter 8: Benthic Subtidal and Intertidal Ecology of the Offshore Scoping Report; Caledonia OWF, 2022); a precautionary value to fully encompass the maximum range of relevant effects (typically defined by dispersion of suspended sediment).

5.2.1.2 Based on the screening range considered in Section 4.2, there are no designated sites close enough to the Proposed Development for any of the potential effects described in Table 5.1 to result in a potential for LSE, when considered with the Proposed Development alone.

Table 5.1. Benthic ecology receptor group potential effects.

Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Physical habitat loss/disturbance	Installation of structures; Seabed preparation; Seabed dredging; Sediment disposal; Installation of scour or cable protection Vessel movements/ anchoring; and All in-combination effects	Physical presence of structures; Maintenance of structures; Presence of scour or cable protection and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Suspended sediment/ deposition	Installation of structures; Seabed preparation; Seabed dredging and sandwave clearance; Sediment disposal; Installation of scour or cable protection, and All in-combination effects	Maintenance of structures; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Accidental Pollution	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition above); and All in-combination effects	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition above); and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction

Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Invasive Non-Native Species (INNS)	Vessel movements on and off site; Installation of solid structures; and All in-combination effects.	Vessel movements on and off site; Maintenance Activities; Physical presence of structures; and All in-combination effects.	Scope of works currently unknown; however, anticipated to be similar to those during construction
Electromagnetic Frequencies (EMF)	N/A	Generation of EMF from installed cables.	N/A
Changes to physical processes	Installation of structures.	Physical presence of structures Installation of cable and scour protection (where required).	N/A

5.3 Marine Mammals

5.3.1.1 Table 5.2 presents the potential activities and resulting effects considered for the marine mammal receptors identified in Section 4.3. Based on the potential effects described in Table 5.2 and the screening range (MUs) considered in Section 4.3, there are several designated sites which have been identified for the assessment of no LSE. These are presented within Table 5.3 along with the assessment and conclusions of the HRA Stage 1 process (also see Figure 5.1).

Table 5.2. Marine mammal receptor group potential effects.

Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Underwater Noise	Piling; Unexploded Ordnance (UXO); Construction vessel noise; Other construction activities; Acoustic/geophysical surveys; Acoustic Deterrent Devices (ADD); and All in-combination effects	Acoustic/geophysical surveys; Vessel noise; Operational noise; and All in-combination effects.	Scope of works currently unknown; however, anticipated to be similar to those during construction
Vessel Disturbance	Installation of structures; Seabed preparation; Seabed dredging and sandwave clearance; Sediment disposal; Installation of scour or cable protection; and All in-combination effects	Maintenance of structures; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction

Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Collision Risk	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition in Table 5.1); and All in-combination effects	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition in Table 5.1); and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Accidental pollution	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition in Table 5.1); and All in-combination effects	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition in Table 5.1); and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Changes to prey	Generation of underwater noise from construction/ maintenance activities; Loss of supporting habitats (via all activities listed for physical habitat loss/disturbance in Table 5.1); Vessel movements; EMF; and All in-combination effects.	Generation of underwater noise from construction/ maintenance activities; Loss of supporting habitats (via all activities listed for physical habitat loss/disturbance in Table 5.1; Vessel movements; EMF; and All in-combination effects.	Scope of works currently unknown; however, anticipated to be similar to those during construction
Habitat loss	Removal of supporting habitat during installation of structures; and All in-combination effects	Prey habitat loss in footprint of structures/cable protection; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Disturbance at haul out (non-physical disturbance)	Vessel movements; and All in-combination effects.	Vessel movements; and All in-combination effects.	Scope of works currently unknown; however, anticipated to be similar to those during construction
Entanglement (*floating only*)	N/A	Presence of cables and structures	N/A
Barrier Effects (*floating only*)	N/A	Presence of cables and structures	N/A

Table 5.3. Potential for LSE for marine mammal receptors.

Designated Site	Management Unit	Distance to Designated Site		Feature(s) to consider for Assessment of No LSE	Potential Effects			Assessment of No LSE
		Array Area (km)	Offshore ECC (km)		Construction	O&M	Decommissioning	
Dornoch Firth and Loch Fleet Ramsar	Moray Firth	77.0	63.7	Harbour seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Given proximity to the site, evidence of connectivity and the nature of effects, effects cannot be screened out at this stage and therefore there is a potential for LSE (i.e., cannot demonstrate no LSE).
Dornoch Firth and Morrich More SAC	Moray Firth	83.3	67.9	Harbour seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Given proximity to the site, evidence of connectivity and the nature of effects, effects cannot be screened out at this stage and therefore there is a potential for LSE (i.e., cannot demonstrate no LSE).
Faray and Holm of Faray SAC	North Coast and Orkney	91.7	119.3	Grey seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Given proximity to the site, evidence of connectivity and the nature of effects, effects cannot be screened out at this stage and therefore there is a potential for LSE (i.e., cannot demonstrate no LSE).
Moray Firth SAC	Coastal East Scotland	57.6	32.0	Bottlenose dolphin	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Given proximity to the site, evidence of connectivity and the nature of effects, effects cannot be screened out at this stage and therefore there is a potential for LSE (i.e., cannot demonstrate no LSE).
Sanday SAC	North Coast and Orkney	91.5	119.5	Harbour seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Given proximity to the site, evidence of connectivity and the nature of effects, effects cannot be screened out at this stage and therefore there is a potential for LSE (i.e., cannot demonstrate no LSE).
Southern North Sea SAC	North Sea	340.8	312.4	Harbour porpoise	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	No LSE. The site has been screened out based on the significant distance to the site (minimum of 312 km from the offshore works), and the application of the 26 km effective deterrent radius as applied by Natural England for English sites.

Designated Site	Management Unit	Distance to Designated Site		Feature(s) to consider for Assessment of No LSE	Potential Effects			Assessment of No LSE
		Array Area (km)	Offshore ECC (km)		Construction	O&M	Decommissioning	
Transboundary sites for Harbour porpoise; Bancs des Flandres SCA; Doggersbank (Netherlands) SAC Klaverbak SCI; Noordzeekustone SCI; SBZ 1 SCI; SBZ 2 SCI; SBZ 3 SCI; Vlaamse Banked SCI; Vlakte van de Raan SCI; Voordelta SCI; Waddenzee SCI; and Westerschelde and Saeftinghe SCI.	Various	Various	Various	Harbour porpoise	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	No LSE. Given the significant distance of the nearest transboundary site to the Proposed Development (closest site is 436.6 km to offshore works), the Proposed Development is unlikely to have any significant effects on the features of these sites. It is therefore concluded that there is no LSE on the Annex II harbour porpoise feature of any transboundary site during the construction, O&M, or decommissioning phase.
Transboundary sites for seals; Bancs des Flandres SCA; Doggersbank (Netherlands) SAC Klaverbak SCI; Noordzeekustone SCI; SBZ 1 SCI; SBZ 2 SCI; SBZ 3 SCI; Vlaamse Banked SCI; Vlakte van de Raan SCI; Voordelta SCI; Waddenzee SCI; and Westerschelde and Saeftinghe SCI.	Various	Various	Various	Grey seal	Underwater noise; Collision risk	Collision risk	Underwater noise; Collision risk	Underwater noise: Potential for site connectivity is indicated from seal use at sea data. Therefore, there is the potential for some level of interaction between grey seal and underwater noise associated with the Proposed Development. Collision risk: The location of the Proposed Development relative to the at sea usage area of grey seal together with connectivity to the SAC may result in increased collision risk of grey seal (with vessels associated with activity relating to the Proposed Development). Decommissioning: The impacts during decommissioning are considered to be similar to those outlined in the construction phase. The above, combined with the evidence to suggest connectivity (Vincent *et al.*, 2017) therefore means that effects cannot be screened out at this stage and therefore there is a potential for LSE (i.e., cannot demonstrate no LSE).
					Accidental pollution and water quality; Changes to prey; Habitat loss; Disturbance at haul out	Underwater noise; Changes to prey; Entanglement (*floating only*); Barrier Effects (*floating only*)	Accidental pollution and water quality; Changes to prey; Habitat loss; Disturbance at haul out	No LSE. These features have been screened out from assessment as a result of the distance between the Proposed Development and the designated site, the scale of the potential change and the scale and extent of alternative habitat.

250000 500000 750000 1000000 1250000

6500000

6250000

6000000

5750000

Faray and Holm of Faray

Sanday

Dornoch Firth and Loch Fleet

Moray Firth

Doggersbank

Southern North Sea

Klaverbank

Noordzeekustzone

Waddenzee

Voordelta

Vlakte van de Raan

Westerschelde & Saeftinghe

Vlaamse Banken

SBZ 3 / ZPS 3

SBZ 2 / ZPS 2

SBZ 1 / ZPS 1

Bancs des Flandres

Legend

- Array Area
- Offshore Export Cable Corridor
- Special Areas of Conservation
- Ramsar Site
- Transboundary Site for Seals (SAC/SCI)
- Transboundary Site for Harbour Porpoise (SAC/SCI)

Scale at A3: 1:3,750,000

0 50 100 km

N

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)

Produced:	Reviewed:	Approved:
BPHB	BJ	DH
Date: 02/09/2022	Revision: 01	
REF: UKCAL1_GO_WNF_HRA_MAP_00012		

Figure 5.1

Designated sites identified for marine mammal receptors

CALEDONIA Offshore Wind Farm

OW OCEAN WINDS

5.4 Offshore and Intertidal Ornithology

5.4.1.1 Table 5.4 presents the potential activities and resulting effects considered for the ornithological receptors identified by Table 4.2.

Table 5.4. Offshore ornithology receptor group potential effects.

Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Disturbance and displacement	Installation of structures; Seabed preparation; Seabed dredging and sandwave clearance; Sediment disposal; Vessel associated disturbance; Installation of scour or cable protection, and All in-combination effects	Vessels associated with maintenance of structures; Presence of the operating WTGs; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Collision risk	N/A	Collision with operating WTG rotors and associated infrastructure; and All in-combination effects	N/A
Barrier effect	N/A	Barrier to seasonal migratory movements and/or regular foraging flights from the operating OWF; and All in-combination effects	N/A
Accidental pollution	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition in Table 5.1 and All in-combination effects	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition in Table 5.1 and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Changes to prey	Generation of underwater noise from construction activities; Loss of supporting habitats (via all activities listed for physical habitat loss/disturbance in Table 5.1); Vessel movements; EMF; and All in-combination effects	Generation of underwater noise from maintenance activities; Loss of supporting habitats (via all activities listed for physical habitat loss/disturbance in Table 5.1); Vessel movements; EMF; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction

5.4.1.1 Based on the potential effects described in Table 5.4 and the screening criteria considered in Table 4.2, there are several designated sites which have been identified for the assessment of no LSE. These are presented within Table 5.5 along with the assessment and conclusions of the HRA Stage 1 process. It is noted that some species identified as low displacement species within Bradbury *et al.* (2014) and JNCC (2022) have been screened in on a precautionary basis prior to further discussions with Statutory Nature Conservation Bodies (SNCBs). These include:

- Kittiwake
    - Disturbance susceptibility = 2
    - Habitat specialization = 2
- Manx shearwater
    - Disturbance susceptibility = 1
    - Habitat specialization = 1
- Storm petrel
    - Disturbance susceptibility = 1
    - Habitat specialization = 1

5.4.1.2 The most recent Joint SNCB Interim Displacement Advice Note (JNCC, 2022) advises as a general guide, that any species scoring 3 or more under either category ('Disturbance Susceptibility' or 'Habitat Specialization') and is present in the OWF site or buffer should be progressed to the matrix stage (with the addition of gannet). The guidance note identified "*the priority species for assessment of displacement effects will typically be diver and sea duck species, guillemot, razorbill, puffin and gannet*". However, it is noted that kittiwake, Manx shearwater and storm petrel have previously been requested to be screened in for displacement (with the exception of kittiwake in England and Wales).

5.4.1.3 Additionally, kittiwake have only been screened in for disturbance and displacement the breeding season when they are central place foragers, due to their physiology in terms of flight efficiency and additionally their wide-ranging ecology, as advised by Marine Scotland (2020b).

5.4.1.4 Due to the complexity associated with the number of SPAs/Ramsar sites, designated features and potential effects, the screening process presented below deviates slightly from other receptor groups. Table 5.5 therefore assesses each designated site against the potential effects listed in Table 5.4. Only potential effects where LSE cannot currently be discounted (and therefore the site and species is screened in) are listed within Table 5.5 (for example, collision risk for herring gull at East Caithness Cliffs SPA). All other sites considered have been presented within Appendix A.

5.4.1.5 During site selection, a number of transboundary sites were identified as having features that met Criteria 2 (having designated seabird features that are within MMF+1SD of the Proposed Development). Due to the distances associated with these transboundary sites, assessment for screening has been grouped by feature. The assessments are presented in Table 5.5, and no feature has been screened in for further assessment.

Table 5.5. Screening of SPA and Ramsar sites with a pathway of interaction with the Proposed Development. "" Identifies species which are part of an assemblage feature only. Features with no pathway to the Proposed Development are highlighted in grey within Appendix A.*

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
East Caithness Cliffs SPA	Breeding seabird	21.3	39.0	Shag; Cormorant*	-	-	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. However, these species are not vulnerable to either collision with turbines or to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Out	
	Breeding seabird	21.3	39.0	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	21.3	39.0	Herring gull; Great black-backed gull*		Collision risk		The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	21.3	39.0	Guillemot; Razorbill	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	21.3	39.0	Kittiwake	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Moray Firth SPA	Breeding seabird Non-breeding seabird	29.3	0.0	Shag	-	-	-	This species is beyond the mean-maximum +1SD foraging range from the Array Area during the breeding season (Woodward *et al*., 2019) and additionally has low vulnerability to collision and displacement/disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). The offshore ECC however, directly overlaps with this SPA but this species additionally has low vulnerability to disturbance/displacement from vessel traffic (Fliessbach *et al*., 2019). The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Out	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
North Caithness Cliffs SPA	Non-breeding waterbird	29.3	0.0	Common scoter; Eider; Goldeneye; Great northern diver; Long-tailed duck; Red-breasted merganser; Red-throated diver; Scaup; Slavonian grebe; Velvet scoter	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The cable corridor directly overlaps with this SPA with some species having high or very high vulnerability to disturbance/displacement from offshore wind farms and vessel disturbance (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; Fliessbach *et al*., 2019). Therefore, LSE cannot be discounted for this impact. Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman et al., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	31.2	55.6	Guillemot; Razorbill*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	31.2	55.6	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
	Breeding seabird	31.2	55.6	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination	In	
Troup, Pennan and Lon's Heads SPA	Breeding seabird	32.3	4.3	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	32.3	4.3	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
	Breeding seabird	32.3	4.3	Herring gull*; *	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	32.3	4.3	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Pentland Firth Islands SPA	Breeding seabird	37.8	64.6	Arctic tern	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but is considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Loch of Strathbeg SPA	Breeding seabird	50.9	31.2	Sandwich tern	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Moray and Nairn Coast SPA	Non-breeding waterbird	53.3	20.6	Bar-tailed godwit; Greylag goose; Pink-footed goose; Redshank; Dunlin*; Oystercatcher*; Red-breasted merganser*; Wigeon*	-	Collision risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Moray and Nairn Coast Ramsar	Non-breeding waterbird	53.3	20.6	Greylag goose; Pink-footed goose; Redshank	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	In	In
Copinsay SPA	Breeding seabird	54.7	80.1	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	54.7	80.1	Great black-backed gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	54.7	80.1	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	54.7	80.1	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Hoy SPA	Breeding seabird	55.6	80.1	Great skua; Arctic skua*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but are considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	55.6	80.1	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	In	
	Breeding seabird	55.6	80.1	Great black-backed gull*;	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	55.6	80.1	Guillemot*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Buchan Ness to Collieston Coast SPA	Breeding seabird	55.6	80.1	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	68.7	44.0	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	68.7	44.0	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
	Breeding seabird	68.7	44.0	Herring gull*; Kittiwake*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	68.7	44.0	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury et al., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness et al., 2013; Bradbury et al., 2014; Dierschke et al., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Auskerry SPA	Breeding seabird	71.5	95.8	Storm petrel	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury et al., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness et al., 2013; Bradbury et al., 2014; Dierschke et al., 2016; JNCC, 2022). Nevertheless, there is uncertainty within the vulnerability factors (Wade et al., 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Dornoch Firth and Loch Fleet SPA	Non-breeding waterbird	77.0	63.8	Bar-tailed godwit; Greylag goose; Osprey; Wigeon	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Dornoch Firth and Loch Fleet Ramsar	Non-breeding waterbird	77.0	63.8	Bar-tailed godwit; Greylag goose; Wigeon	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Rousay SPA	Breeding seabird	88.6	115.9	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	88.6	115.9	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	88.6	115.9	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Marwick Head SPA	Breeding seabird	89.3	115.7	Guillemot	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	89.3	115.7	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Calf of Eday SPA	Breeding seabird	92.4	117.6	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
	Breeding seabird	92.4	117.6	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	92.4	117.6	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Cromarty Firth Ramsar	Non-breeding waterbird	95.2	75.1	Bar-tailed godwit; Greylag goose; Common tern*; Dunlin*; Knot*; Oystercatcher*; Red-breasted merganser*; Redshank*; Scaup*; Wigeon*	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Cromarty Firth SPA	Non-breeding waterbird	95.2	75.1	Bar-tailed godwit; Greylag goose; Whooper swan	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
West Westray SPA	Breeding seabird	99.6	127.1	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
	Breeding seabird	99.6	127.1	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	99.6	127.1	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Inner Moray Firth SPA	Non-breeding waterbird	100.4	71.9	Bar-tailed godwit; Greylag goose; Red-breasted merganser; Redshank; Curlew*; Goldeneye*; Goosander*; Oystercatcher*; Scaup*; Teal*; Wigeon*	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
	Non-breeding seabird	100.4	71.9	Cormorant*	-	-	-	This non-breeding seabird may pass windfarms during their migrations; however, this species is not vulnerable to either collision with turbines or to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;). The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Out	
Inner Moray Firth Ramsar	Non-breeding waterbird	100.4	71.9	Bar-tailed godwit; Greylag goose; Red-breasted merganser; Redshank	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Fowlsheugh SPA	Breeding seabird	118.3	82.2	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	118.3	82.2	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	118.3	82.2	Herring gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	118.3	82.2	Kittiwake	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Cape wrath SPA	Breeding seabird	124.5	139.4	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	124.5	139.4	Guillemot*; Puffin*; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	124.5	139.4	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Sule Skerry and Sule Stack SPA	Breeding seabird	125.5	147.0	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	125.5	147.0	Puffin; Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	125.5	147.0	Storm petrel	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Fair Isle SPA	Breeding seabird	134.4	150.0	Gannet*	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	134.4	150.0	Guillemot; Razorbill*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	134.4	150.0	Great skua*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;) but are considered to have moderate/high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	134.4	150.0	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Outer Firth of Forth and St Andrews Bay Complex SPA	Breeding seabird	159.6	122.5	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are considered to have high vulnerability to both collision with turbines and to displacement/disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	159.6	122.5	Kittiwake	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013;	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	159.6	122.5	Manx shearwater	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	159.6	122.5	Puffin; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Sumburgh Head SPA	Breeding seabird	178.3	192.7	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	178.3	192.7	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Foula SPA	Breeding seabird	192.3	213.3	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
	Breeding seabird	192.3	213.3	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;) but are considered to have moderate/high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	192.3	213.3	Puffin	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	192.3	213.3	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
North Rona and Sula Sgeir SPA	Breeding seabird	196.6	214.7	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	196.6	214.7	Storm petrel	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	196.6	214.7	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
	Breeding seabird	196.6	214.7	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	196.6	214.7	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Mousa SPA	Breeding seabird	197.4	211.7	Storm petrel	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact.	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Forth Islands SPA	Breeding seabird	198.9	161.8	Gannet	Disturbance and displacement	Disturbance and displacement; Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	198.9	161.8	Lesser black-backed gull	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	198.9	161.8	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
Noss SPA								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		In
	Breeding seabird	198.9	161.8	Puffin; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	212.3	226.6	Gannet	Disturbance and displacement	Disturbance and displacement; Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	212.3	226.6	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination.	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	212.3	226.6	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016;) but are considered to have moderate/high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	212.3	226.6	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	212.3	226.6	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
St Abb's Head to Fast Castle SPA	Breeding seabird	229.1	192.6	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Ronas Hill - North Roe and Tingon SPA	Breeding seabird	245.6	264.0	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but is considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Northumberland Marine SPA	Breeding seabird	251.8	215.5	Puffin	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	251.8	215.5	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	251.8	215.5	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Fetlar SPA	Breeding seabird	258.1	273.8	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative	In	In

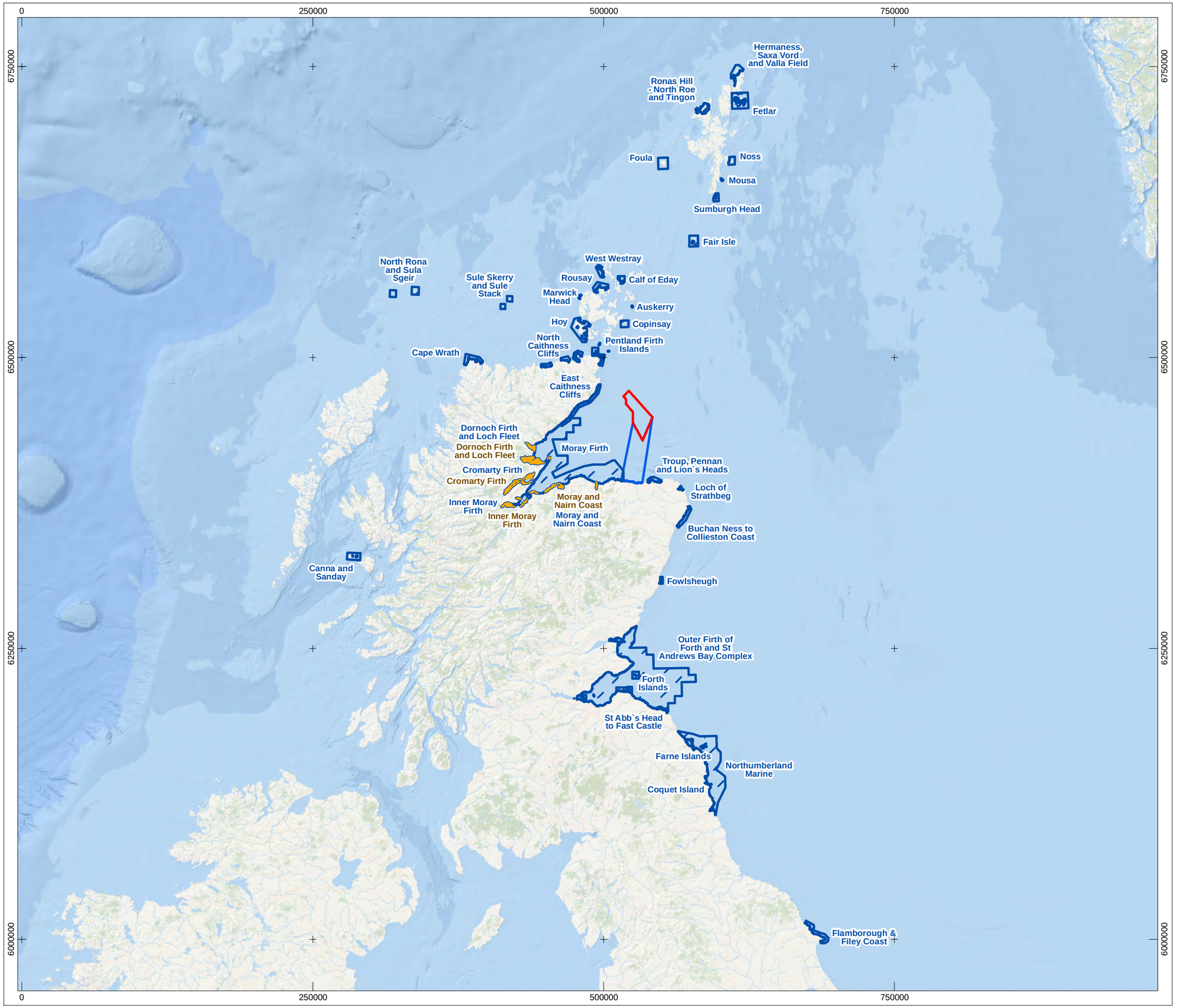
Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	258.1	273.8	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but is considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
Farne Islands SPA	Breeding seabird	266.2	230.6	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Hermaness, Saxa Vord and Valla Field SPA	Breeding seabird	277.2	293.2	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative	In	In

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
	Breeding seabird	277.2	293.2	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	277.2	293.2	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but are considered to have moderate/high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	
	Breeding seabird	277.2	293.2	Kittiwake*	Disturbance and displacement	Collision Risk; Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative	In	

Designated Site	Breeding/ Non-breeding	Distance to Array Area (km)	Distance to Offshore ECC (km)	Feature(s) to consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Screened In/Out	
					Construction	O&M	Decommissioning		Feature	Designated Site
								resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		
Coquet Island SPA	Breeding seabird	300.9	265.2	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
Flamborough and Filey Coast SPA	Breeding seabird	435.9	401.6	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In
	Breeding seabird	435.9	401.6	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. Project experience to date strongly suggests all other potential effects result in no LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	

Table 5.6. Potential for LSE for transboundary offshore ornithology sites.

Feature	Designated Site	Country	Distance to Array Area (km)	Distance to Offshore ECC (km)	Rationale	Screened In/Out
Fulmar	Puffin Island SPA	Ireland	853.6	814.9	The sites have connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019), however this species has very low vulnerability to displacement and collision (Bradbury *et al.*, 2014). Although previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al.*, 2016; Furness *et al.*, 2013), due to the large foraging range for this species, it is determined that significant effects would not therefore manifest on these SPAs after the likelihood and severity of effects on the SPAs have been apportioned to all SPAs within foraging range. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Out
	Cliffs of Moher SPA	Ireland	708.8	670.3		
	Skelligs SPA	Ireland	863.1	824.4		
	Tory Island SPA	Ireland	465.7	429.6		
	Duvillaun Islands SPA	Ireland	646.8	610.5		
	Dingle Peninsula SPA	Ireland	797.8	759.1		
	Iveragh Peninsula SPA	Ireland	818.9	780.0		
	Beara Peninsula SPA	Ireland	850.0	811.0		
	Kerry Head SPA	Ireland	769.4	730.7		
	Blasket Islands SPA	Ireland	831.9	793.4		
	Clare Island SPA	Ireland	661.1	624.1		
	Deenish Island and Scariff Island SPA	Ireland	855.8	816.9		
	Horn Head to Fanad Head SPA	Ireland	439.8	402.9		
	High Island, Inishshark and Davillaun SPA	Ireland	684.2	647.1		
	Lambay Island SPA	Ireland	548.1	508.5		
	Saltee Islands SPA	Ireland	702.6	663.1		
	West Donegal Coast SPA	Ireland	483.0	446.6		
	Littoral seino-marin	France	903.2	868.1		
	Cap Sizun	France	1111.0	1073.7		
	Cote de Granit Rose-Sept Iles	France	997.1	959.9		
	Tregor Goëlo	France	997.1	959.9		
	Ca' d'Erquy-Cap Fréhel	France	1020.6	983.7		
	Camaret	France	1091.0	1053.7		
	Falaise du Bessin Occidental	France	960.1	923.8		
	Ouessant-Molène	France	1066.1	1028.6		
	Seevogelschutzgebiet Helgoland	Denmark	751.6	735.8		
Manx Shearwater	Cote de Granit Rose-Sept Iles	France	997.1	959.9	The sites have connectivity with breeding Manx shearwater based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019), however this species has very low vulnerability to displacement and collision (Bradbury *et al.*, 2014). Although previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al.*, 2016; Furness *et al.*, 2013), due to the large foraging range for this species, it is determined that significant effects would not therefore manifest on this distant SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within foraging range and any potential barrier impacts will be trivial. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Out
	Iles Houat-Hoedic	France	1174.3	1137.2		
	Ouessant-Molène	France	1066.1	1028.6		
	Baie de Morlaix	France	1025.3	988.0		



Legend

- Array Area
- Offshore Export Cable Corridor
- Ramsar Site
- Special Protection Area

Scale at A3: 1:3,000,000

0 50 100 km

N

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)		
Produced:	Reviewed:	Approved:
BPHB	BJ	DH
Date: 02/09/2022	Revision: 01	
REF: UKCAL1_GO_WNF_HRA_MAP_00038		

Figure 5.2

Designated sites identified for offshore and intertidal ornithology receptors

CALEDONIA Offshore Wind Farm

OW OCEAN WINDS

5.5 Migratory Fish

5.5.1.1 The study area for migratory fish for this project with respect to HRA Stage 1 is defined by a precautionary range of 100 km from the Proposed Development to the relevant site's estuary mouth. Table 5.7 presents the potential effects considered for the migratory fish receptors identified.

5.5.1.2 Based on the potential effects described in Table 5.7 and the screening range considered in Section 4.5, there are several designated sites which have been identified with a potential for LSE. These are presented within Table 5.8 along with the assessment and conclusions of the Stage 1 Screening process. All sites considered in the below screening table are depicted in Figure 5.3.

Table 5.7. Migratory fish receptor group potential effects.

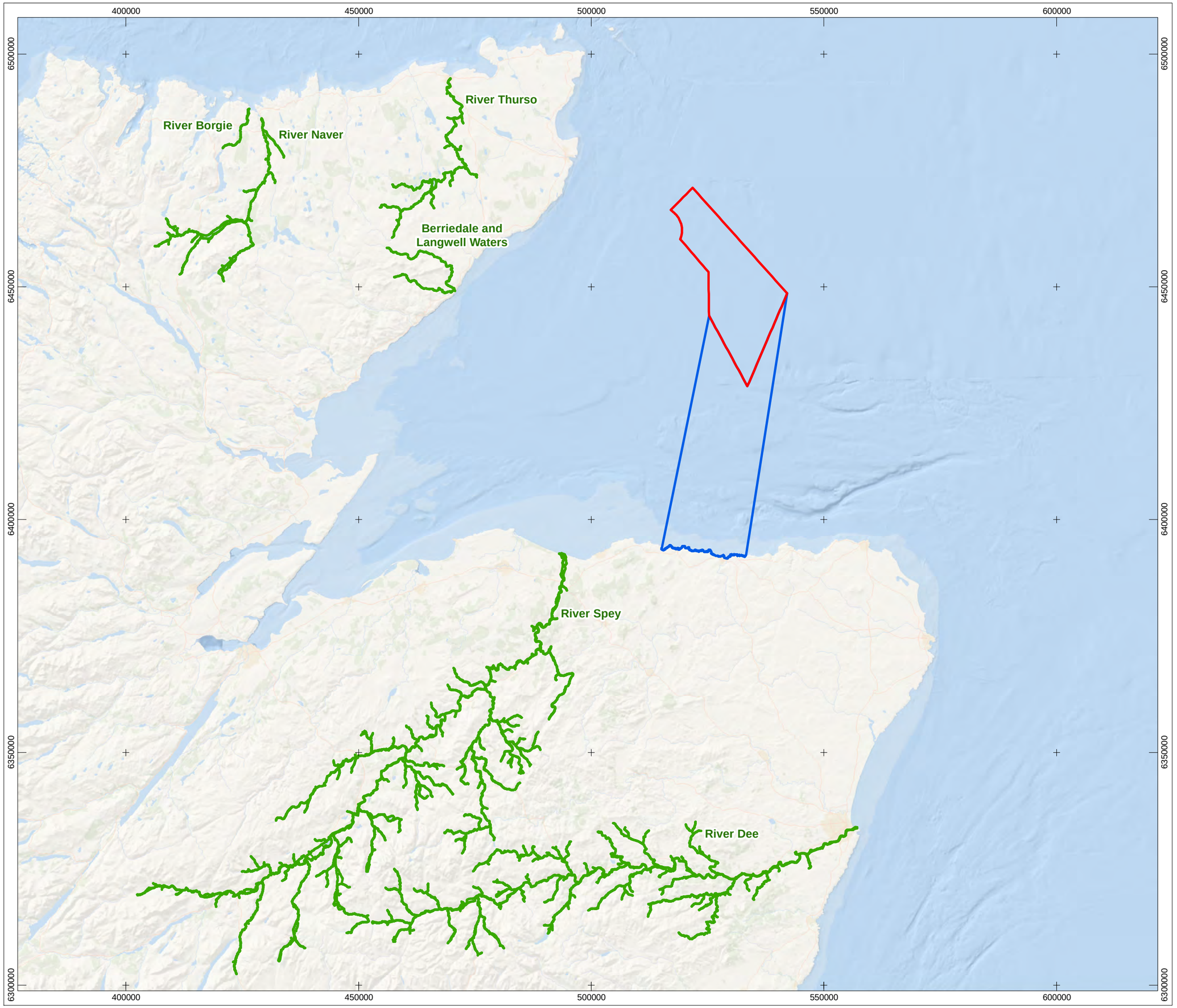
Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Underwater Noise	Piling; UXO; Construction vessel noise; Other construction activities; Acoustic/geophysical surveys; ADD; and All in-combination effects.	Acoustic/geophysical surveys; Vessel noise; Operational noise; and All in-combination effects.	Scope of works currently unknown; however, anticipated to be similar to those during construction
Suspended Sediment/ deposition	Installation of structures (e.g., piling); Seabed preparation; Seabed dredging and sandwave clearance; Sediment disposal; Cable installation; and All in-combination effects	Maintenance of structures; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Accidental Pollution	Release of contaminants; Release of sediment; and All in-combination effects	Release of contaminants; Release of sediment; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
EMF	N/A	Generation of EMF from installed cables	N/A
INNS	Vessel movements on and off site; Installation of solid structures; All in-combination effects.	Vessel movements on and off site; Maintenance activities; Presence of solid structures; All in-combination effects.	Scope of works currently unknown; however, anticipated to be similar to those during construction
Physical habitat loss/disturbance	Installation of structures; Seabed preparation; Seabed dredging; Sediment disposal; Vessel movements/ anchoring; and All in-combination effects	Maintenance of structures; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction

Potential Effect	Activities Potentially Resulting in Effect		
	Construction	O&M	Decommissioning
Changes to prey	Generation of underwater noise from construction/ maintenance activities; Loss of supporting habitats; Vessel movements; EMF; and All in-combination effects.	Generation of underwater noise from construction/ maintenance activities; Loss of supporting habitats; Vessel movements; EMF; and All in-combination effects	Scope of works currently unknown; however, anticipated to be similar to those during construction
Entanglement (*floating only*)	N/A	Presence of cables and structures	N/A
Barrier Effects (*floating only*)	N/A	Presence of cables and structures	N/A

Table 5.8. Potential for LSE for migratory fish receptors.

Designated Site	Distance to Proposed Development		Feature(s) to consider for Assessment of No LSE	Potential Effects			Assessment of No LSE
	Array Area (km)	Offshore ECC (km)		Construction	O&M	Decommissioning	
River Thurso SAC	42.2	58.1	Atlantic salmon	Underwater noise Accidental pollution and water quality Changes to prey	Underwater noise Changes to prey Entanglement (*floating only*) Barrier Effects (*floating only*)	Underwater noise Accidental pollution and water quality Changes to prey	Due to the proximity to the site and migratory nature of the species, there is a potential for connectivity and therefore potential effects cannot be screened out at this stage, leading to a conclusion of potential for LSE.
Berriedale and Langwell waters SAC	48.6	54.6	Atlantic salmon	Underwater noise Accidental pollution and water quality Changes to prey	Underwater noise Changes to prey Entanglement (*floating only*) Barrier Effects (*floating only*)	Underwater noise Accidental pollution and water quality Changes to prey	Due to the proximity to the site and migratory nature of the species, there is a potential for connectivity and therefore potential effects cannot be screened out at this stage, leading to a conclusion of potential for LSE.
River Spey SAC	53.3	20.6	Sea lamprey; Atlantic salmon	Underwater noise Accidental pollution and water quality Changes to prey	Underwater noise Changes to prey Entanglement (*floating only*) Barrier Effects (*floating only*)	Underwater noise Accidental pollution and water quality Changes to prey	Due to the proximity to the site and migratory nature of the species, there is a potential for connectivity and therefore potential effects cannot be screened out at this stage, leading to a conclusion of potential for LSE.

Designated Site	Distance to Proposed Development		Feature(s) to consider for Assessment of No LSE	Potential Effects			Assessment of No LSE
	Array Area (km)	Offshore ECC (km)		Construction	O&M	Decommissioning	
River Naver SAC	83.9	97.5	Atlantic salmon	Underwater noise Accidental pollution and water quality Changes to prey	Underwater noise Changes to prey Entanglement (*floating only*) Barrier Effects (*floating only*)	Underwater noise Accidental pollution and water quality Changes to prey	Due to the proximity to the site and migratory nature of the species, there is a potential for connectivity and therefore potential effects cannot be screened out at this stage, leading to a conclusion of potential for LSE.
River Borgie SAC	92.8	107.5	Atlantic salmon	Underwater noise Accidental pollution and water quality Changes to prey	Underwater noise Changes to prey Entanglement (*floating only*) Barrier Effects (*floating only*)	Underwater noise Accidental pollution and water quality Changes to prey	Due to the proximity to the site and migratory nature of the species, there is a potential for connectivity and therefore potential effects cannot be screened out at this stage, leading to a conclusion of potential for LSE.
River Dee SAC	94.2	57.0	Atlantic salmon	Underwater noise Accidental pollution and water quality Changes to prey	Underwater noise Changes to prey Entanglement (*floating only*) Barrier Effects (*floating only*)	Underwater noise Accidental pollution and water quality Changes to prey	Due to the proximity to the site and migratory nature of the species, there is a potential for connectivity and therefore potential effects cannot be screened out at this stage, leading to a conclusion of potential for LSE.



Legend

- Array Area
- Export Cable Corridor
- Special Areas of Conservation

Scale at A3: 1:750,000

0 20 40 km

N

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)		
Produced:	Reviewed:	Approved:
BPHB	BJ	DH
Date: 02/09/2022	Revision: 01	
REF: UKCAL1_GO_WNF_HRA_MAP_00031		

Figure 5.3

Designated sites identified for migratory fish receptors

CALEDONIA Offshore Wind Farm

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6 In-combination Assessment

6.1 Approach to In-combination Assessment

6.1.1.1 Regulation 48 of the 1994 Habitats Regulations (as similarly covered in the 2017 Habitats Regulations and the Offshore Habitats Regulations) includes a requirement for the Competent Authority to make the AA alone and in-combination with other reasonably foreseeable plans or projects, where these are not directly connected with or necessary to the management of the site. Screening for the Proposed Development alone is undertaken above in Section 5, with screening in-combination provided here.

6.1.1.2 For screening, there is a presumption that where it has not been possible to objectively determine no LSE for the Proposed Development alone, then potential LSE in-combination applies. Consideration has also been given to determination of no LSE in-combination where the Proposed Development demonstrated connectivity to a designated site/feature but no LSE alone was determined. Should any such instances be identified subsequently (e.g., during consultation or as a result of project specific assessments) then in-combination screening will be updated for the RIAA.

6.1.1.3 In-combination impacts of the Proposed Development will be assessed to identify where there could be an accumulation of impacts on each Natura 2000 site. These impacts consider other (proposed) developments within the context of the site and any other reasonably foreseeable proposals in the vicinity including:

- Under construction;
- Consented projects, but not yet implemented;
- Submitted application(s) in the planning system but not yet determined (from scoping onwards);
- Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited; and
- Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

6.1.1.4 It is proposed that projects that are built and operational at the time the site was designated have been classified as part of the baseline conditions. For those projects that were/are only partially constructed or have only recently been completed, the full extent of the impacts arising from the development(s) may not be known and will therefore be included within the in-combination assessment.

6.1.1.5 In assessing the potential cumulative impact(s) for the Proposed Development, it is important to bear in mind that for some projects, predominantly those 'proposed' or identified in development plans etc. may or may not actually be taken forward. There is thus a need to build in some consideration of certainty (or uncertainty) with respect to the potential impacts which might arise from such proposals. For this reason, all relevant projects/plans considered cumulatively alongside the Proposed Development will be reviewed to reflect their stage within the planning and development process. This allows the cumulative impact assessment to present several future development scenarios, each with a differing potential for being

ultimately built out. A full review of such plans and projects will be conducted for the Proposed Development as part of the EIA and, therefore, will be incorporated into the draft RIAA at that stage. The types of plans and projects that will be considered will include (but not be limited to) the following:

- Offshore:
  - Relevant renewable energy developments;
  - Relevant offshore oil and gas developments;
  - Relevant pipelines and cable developments;
  - Relevant port and harbour activities (including capital and maintenance dredging);
  - Relevant marine disposal sites;
  - Relevant marine dredging sites; and
  - Coastal protection works.
- Onshore:
  - Onshore windfarms; and
  - Other energy generation infrastructure.

6.1.1.6 The potential for an in-combination effect will also depend on factors such as timing of works and specifics of works, as not all plans and projects will result in an in-combination effect. Potential plans and projects to include in-combination will therefore be identified for each site screened in alone and in the context of the potential for both the Proposed Development and that plan or project(s) to result in an in-combination effect.

6.1.1.7 In order to generate an initial long list of projects for consideration within the EIA and HRA, a precautionary list of distances for each industry sector has been applied for identification of relevant projects which have the potential to have an in-combination effect. The long list of projects will be refined based on the rationale outlined below for each relevant environmental receptor (see Sections 6.2 to 6.5 below).

6.1.1.8 As stated above, the in-combination assessment is based on the presumption that where it has not been possible to objectively determine no LSE for the Proposed Development alone, then potential LSE in-combination applies. Those designated sites considered for the in-combination assessment are presented below in Table 6.1.

Table 6.1. Designated sites screened in for the Proposed Development in-combination.

Receptor Group	Designated Sites Considered In-combination
Benthic subtidal and intertidal ecology	No sites within the screening ranges identified alone
Marine mammals	Dornoch Firth Ramsar
	Dornoch Firth and Morrich More SAC
	Faray and Holm of Faray SAC
	Moray Firth SAC
	Sanday SAC
	Bancs des Flandres SCA
	Doggersbank (Netherlands) SAC
	Klaverbak SCI
	Noordzeekustone SCI
	SBZ 1 SCI
	SBZ 2 SCI
	SBZ 3 SCI
	Vlaamse Banked SCI
	Vlakte van de Raan SCI
	Voordelta SCI
	Waddenzee SCI
	Westerschelde and Saeftinghe SCI
Offshore and intertidal ornithology	East Caithness Cliffs SPA
	Moray Firth SPA
	North Caithness Cliffs SPA
	Troup, Pennan and Lon's Heads SPA
	Pentland Firth Islands SPA
	Loch of Strathbeg SPA
	Moray and Nairn Coast SPA
	Moray and Nairn Coast Ramsar
	Copinsay SPA
	Hoy SPA
	Buchan Ness to Collieston Coast SPA
	Auskerry SPA
	Dornoch Firth and Loch Fleet SPA
	Dornoch Firth and Loch Fleet Ramsar
	Rousay SPA
	Marwick Head SPA
	Calf of Eday SPA
	Cromarty Firth Ramsar
	Cromarty Firth SPA

Receptor Group	Designated Sites Considered In-combination
	West Westray SPA
	Inner Moray Firth SPA
	Inner Moray Firth Ramsar
	Fowlsheugh SPA
	Cape wrath SPA
	Sule Skerry and Sule Stack SPA
	Fair Isle SPA
	Outer Firth of Forth and St Andrews Bay Complex SPA
	Sumburgh Head SPA
	Foula SPA
	Mousa SPA
	North Rona and Sula Sgeir SPA
	Forth Islands SPA
	Noss SPA
	St Abb's Head to Fast Castle SPA
	Ronas Hill – North Roe and Tingon SPA
	Northumberland Marine SPA
	Fetlar SPA
	Canna and Sanday SPA
	Farne Islands SPA
	Hermaness, Saxa Vord and Valla Field SPA
	Coquet Island SPA
	Flamborough and Filey Coast SPA
Migratory fish	River Thurso SAC
	Berriedale and Langwell Waters SAC
	River Spey SAC
	River Naver SAC
	River Borgie SAC
	River Dee SAC

6.1.1.9 A final long list of all potential plans and projects considered relevant to the Proposed Development will be developed for the Caledonia OWF. At the time of screening, the long list is not available. Therefore, a precautionary approach is being taken in order to define what plans and projects may require consideration in for the in-combination screening in respect of each receptor group. This precautionary list of plans and projects for in-combination screening and the rationale for selection for each receptor group is described below.

6.2 Benthic Subtidal and Intertidal Ecology

6.2.1.1 The potential for LSE in-combination for benthic subtidal and intertidal ecology will be determined based on the following:

- A plan or project which is located within sufficient proximity (20 km) to the designated site; this is based on the maximum potential zone of influence associated with increased suspended sediment. It is based on a precautionary estimate in the absence of site-specific physical processes assessment and will be refined down following assessment of site-specific conditions.

6.2.1.2 Based on the above criteria and similar project screening reports, the Moray West OWF is the only project proposed to be screened in for the benthic subtidal and intertidal ecology in-combination screening.

6.3 Marine Mammals

6.3.1.1 The potential for LSE in-combination for marine mammals will be determined based on the following:

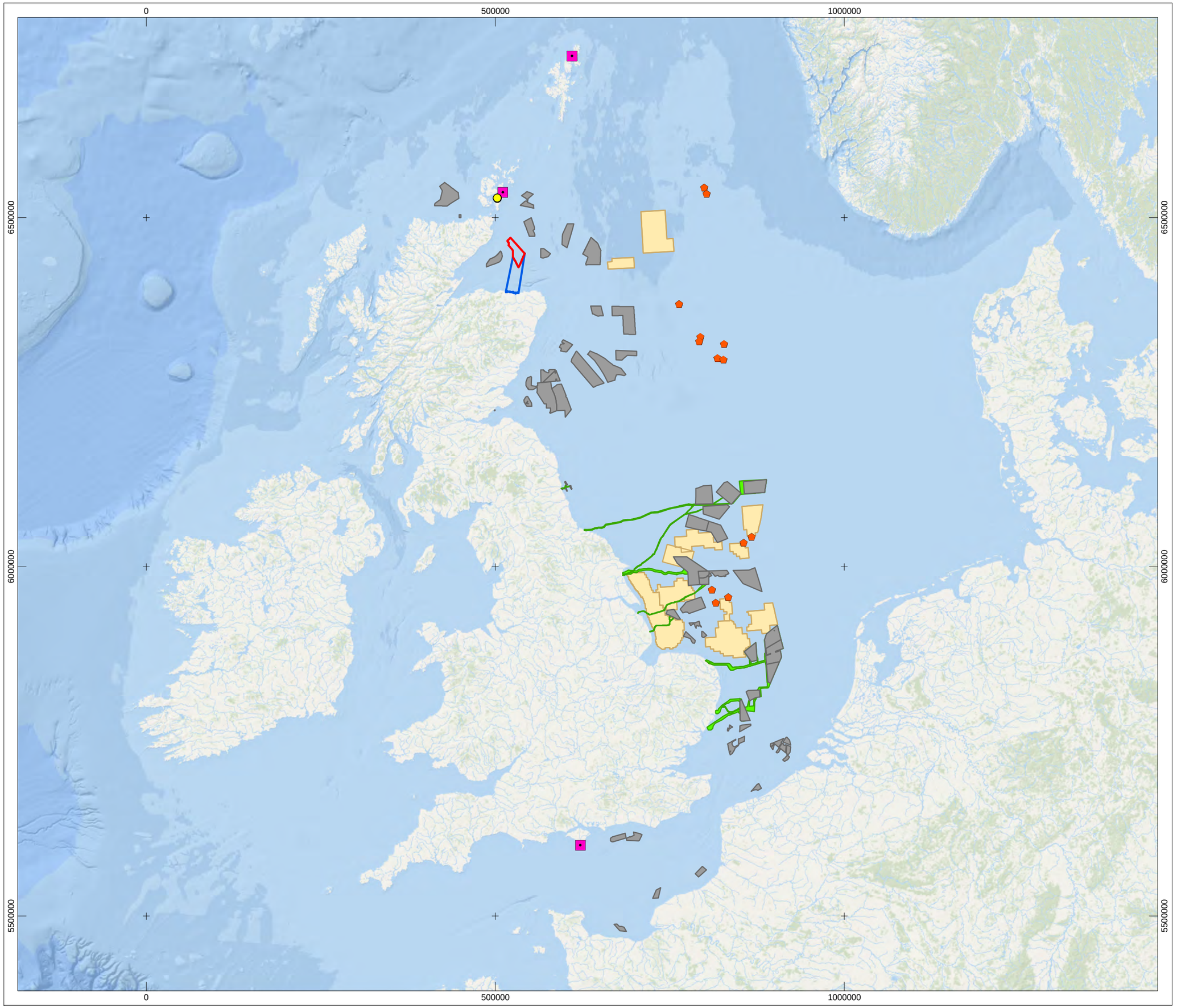
- A plan or project where there is potential for the impacts of the construction and operation and maintenance phases to have a temporal and/or spatial overlap with that of the Proposed Development and the plan or project is within the relevant range to the designated site (e.g., species-specific MUs or drawn in via potential site connectivity).

6.3.1.2 Based on the above criteria and similar project screening reports, the plans and projects proposed to be screened in for the marine mammal in-combination assessment are presented in Table 6.2 (also see Figure 6.1).

Table 6.2. Projects identified to be considered during the marine mammals in-combination screening.

Project Type					
OWFs	OWF Cables	Oil and Gas Platforms	Carbon Capture and Storage	Tidal Site Agreements	The Crown Estate Scotland Wave Energy
2B Energy Methil Demonstration	Blyth Demo	Elgin B Wellhead Platform	Endurance (Project)	Seabed at Deer Sound, Orkney	Mocean Energy Test Area
Blyth Demonstration Site	Doggerbank A Offshore Transmission Owner (OFTO)	Katy Platform	CNS Area 1 (Licence)	Yell Sound Array	
Broadshore	DoggerBank B OFTO	48/9A MIMAS	CNS Area 2 (Licence)	Perpetuus Tidal Energy Centre	
Campion	Dogger Bank C Transmission Asset	49/11B TETHYS	NNS Area 1 (Licence)		
Cluaran Deas Ear	East Anglia TWO Transmission Asset	44/23A KELVIN TM	NNS Area 2 (Licence)		
Cluaran Ear-Thuath	East Anglia THREE Transmission Asset	Jasmine JLQ	Southern North Sea Area 1 (Licence)		
Courseulles-sur-mer	Hornsea Project 2 OFTO	West Franklin WHP	Southern North Sea Area 2 (Licence)		
Diep–e – Le Treport	Hornsea Project 4 OFTO	Jasmine Wellhead Platform	Southern North Sea Area 3 (Licence)		
Dogger Ba–k – Creyke Beck A	Norfolk Boreas Transmission Asset	ENSIGN Platform	Southern North Sea Area 4 (Licence)		
Dogger Ba–k – Creyke Beck B	Norfolk Vanguard East Transmission Asset	Judy JRP	Southern North Sea Area 5 (Licence)		
Dogger Ba–k – Teesside A	Norfolk Vanguard West Transmission Asset	Ivar Aasen Platform	Southern North Sea Area 6 (Licence)		
Dogger Ba–k – Teesside B (Sofia)	Triton Knoll	Edvard Greig Platform	Southern North Sea Area 7 (Licence)		
Dudgeon Extension	Teeside B (Sofia) Transmission Asset	Montrose BLP Platform	Southern North Sea Area 8 (Licence)		
Dunkerque		Jackdaw			
East Anglia One North					
East Anglia Two					
East Anglia Three					
Falck (Bellrock)					
Fecamp					
Five Estuaries					
Floating Energy Allyance					
Hornsea Project 2					
Hornsea Project Four					
Hornsea Project Three					
Inch Cape Offshore Wind Farm					
Mara Mhòr					
MaramWind					
Mermaid					
Moray West					
Moray Offshore Renewable Power (Plan Option NE1)					
Mainstream Renewable Power (Plan Option NE1)					
ESB Asset Development					
Morven					
Neart Na Gaoithe Offshore Wind					
Norfolk Boreas					

Project Type					
OWFs	OWF Cables	Oil and Gas Platforms	Carbon Capture and Storage	Tidal Site Agreements	The Crown Estate Scotland Wave Energy
Norfolk Vanguard East					
Norfolk Vanguard West					
North Falls					
Norther					
Northwester 2					
Outer Dowsing					
OWF Borssele I					
OWF Borssele II					
OWF Borssele III					
OWF Borssele IV					
Pentland Floating Demonstrator					
R3 Z2 PZ2					
R3 z2 pZ3					
Rampion 2					
RWE Renewables–1 - Round 4					
RWE Renewables–2 - Round 4					
Seastar					
Sheringham Shoal Extension					
SSE Renewables-Marubeni-CIP					
Stromar					
Triton Knoll					
West of Orkney					
SeaGreen Alpha Offshore Wind					
SeaGreen Bravo Offshore Wind					



Legend

- Array Area
- Offshore Export Cable Corridor
- Offshore Wind Farm Site Agreement
- Offshore Wind Farm Cable Agreement
- Carbon Capture and Storage Areas
- Wave Site Agreement
- Tidal Site Agreement
- Oil and Gas Platform

Scale at A3: 1:5,000,000

0 100 200 km

N

CRS: WGS 1984 UTM Zone 30N (EPSG:32630)

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BPHB	BJ	DH
Date: 02/09/2022	Revision: 01	
REF: UKCAL1_GO_WNF_HRA_MAP_00045		

Figure 6.1
Projects identified for consideration in-combination with Caledonia Offshore Wind Farm with respect to Marine Mammal Receptors

CALEDONIA Offshore Wind Farm

OW OCEAN WINDS

6.4 Offshore and Intertidal Ornithology

6.4.1.1 The potential for LSE in-combination for offshore ornithology will be determined based on the following:

- A plan or project where there is potential for the construction or operation period to have temporal or spatial overlap with that of the Proposed Development.

6.4.1.2 Projects screened out include commercial fisheries as well as shipping and navigations, which due to already being present were evaluated as being part of the offshore baseline.

6.4.1.3 Based on the above criteria and similar project screening reports, the following plans and projects are proposed to be screened in for the offshore ornithology in-combination assessment are presented in Table 6.3.

Table 6.3. Projects identified to be considered during the offshore ornithology in-combination screening.

OWFs	Tidal Energy	Wave Energy
2B Energy Methil Demonstration	Bluemull Sound	EMEC Bilia Croo
Beatrice	EMEC Fall of Warness	EMEC Scapa Flow
Beatrice Demonstration	EMEC Shapinsay Sound	Mocean Energy Test Area.
Bellrock	Inner Sound	
Blyth Demonstration Site	Seabed at Deer Sound, Orkney	
Broadshore	Yell Sound Array	
CampionWind		
Cluaran Deas Ear		
Cluaran Ear-Thuath		
Dogger Bank A		
Dogger Bank B		
Dogger Bank C		
Dudgeon		
Dudgeon Extension		
East Anglia One		
East Anglia One North		
East Anglia Two		
East Anglia Three		
EOWDC		
Five Estuaries		
Floating Energy Allyance		
Galloper		
Galloper Extension		
Greater Gabbard		
Greater Gabbard Extension		
Gunfleet Sands		
Hornsea Project One		
Hornsea Project Two		

OWFs	Tidal Energy	Wave Energy
Hornsea Project Three		
Hornsea Project Four		
Humber Gateway		
Inch Cape		
Kentish Flats		
Kentish Flats Extension		
Kincardine		
Lincs		
London Array		
Lynn and Inner Dowsing		
Magnora-Technip		
Mara Mhòr		
MaramWind		
Marubeni		
Moray East		
Moray West		
Morven		
Neart Na Gaoithe		
Norfolk Boreas		
Norfolk Vanguard		
North Falls		
Outer Dowsing		
Pentland Floating Demonstrator		
Race Bank		
Seagreen Alpha		
Seagreen Bravo		
Scroby Sands		
Sheringham Shoal		
Sheringham Shoal Extension		
Sofia		
Stromar		
Teesside		
Thanet		
Thanet Extension		
Triton Knoll		
West of Orkney		
Westermost Rough		

6.5 Migratory Fish

6.5.1.1 The potential for LSE in-combination for migratory fish will be determined based on the following:

- A plan or project which is located within sufficient proximity (100 km) to the designated site.

6.5.1.2 Based on the above criteria and similar project screening reports, the plans and projects in Table 6.4 are proposed to be screened in for the migratory fish in-combination screening.

Table 6.4. Projects identified to be considered during the migratory fish in-combination screening.

OWFs	Tidal Site Agreements	The Crown Estate Scotland Wave Energy
Broadshore	Seabed at Deer Sound, Orkney	Mocean Energy Test Area
Cluaran Ear-Thuath		
Floating Energy Aliance		
Maram Wind		
Moray West		
Pentaldn Floating Demonstrator		
Stromar		
West of Orkney		

7 Conclusion for Screening Assessment of No LSE

7.1.1.1 No sites were identified within the screening range applied for benthic subtidal and intertidal ecology receptors; therefore, it is determined that there will be no LSE from the Proposed Development for any designated site or feature, alone or in-combination with other plans or projects.

7.1.1.2 Sites identified with potential for LSE, alone or in combination with other plans or projects (i.e., it has not been possible to determine no LSE at this stage), are presented below for marine mammals (Table 7.1), offshore and intertidal ornithology (Table 7.2) and migratory fish (Table 7.3).

Table 7.1. Summary of marine mammal screening.

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
Dornoch Firth Ramsar	Harbour seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
Dornoch Firth and Morrich More SAC	Harbour seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
Faray and Holm of Faray SAC	Grey seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey; Entanglement (*floating only*); Barrier effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
Moray Firth SAC	Bottlenose dolphin	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
Sanday SAC	Harbour seal	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey Entanglement (*floating only*); Barrier effects (*floating only*)	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
Transboundary sites for seals: Bancs des Flandres SCA Doggersbank (Netherlands) SAC Klaverbak SCI Noordzeekustone SCI SBZ 1 SCI SBZ 2 SCI SBZ 3 SCI Vlaamse Banked SCI Vlakte van de Raan SCI Voordelta SCI Waddenzee SCI Westerschelde and Saeftinghe SCI	Harbour seal; and Grey seal	Underwater noise; Collision risk	Collision risk	Underwater noise; Collision risk	<u>Underwater noise (C):</u> Potential for site connectivity is indicated from seal use at sea data. Therefore, there is the potential for some level of interaction between grey seal and underwater noise associated with the Proposed Development. <u>Collision risk (C, O&M):</u> The location of the project relative to the at sea usage area of grey seal together with connectivity to the SAC may result in increased collision risk of grey seal (with vessels associated with activity relating to the Proposed Development). <u>Decommissioning:</u> The impacts during decommissioning are considered to be similar and potentially less than those outlined in the construction phase. The above, combined with the evidence to suggest connectivity (Vincent *et al*., 2017) therefore means that effects cannot be screened out at this stage and therefore there is a potential for LSE.

Table 7.2. Summary of offshore and intertidal ornithology screening. "" Identifies species which are part of an assemblage feature only.*

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
East Caithness Cliffs SPA	Shag; Cormorant*	No LSE	No LSE	No LSE	No LSE
	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Herring gull; Great black-backed gull*	No LSE	Risk of collision	No LSE	
	Kittiwake	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Guillemot; Razorbill	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Moray Firth SPA	Shag	No LSE	No LSE	No LSE	No LSE
	Common scoter; Eider; Goldeneye; Great northern diver; Long-tailed duck; Red-breasted merganser; Red-throated diver; Scaup; Slavonian grebe; Velvet scoter	Disturbance and displacement with the ECR search area only	Risk of collision; Disturbance and displacement	Disturbance and displacement with the ECR search area only	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
North Caithness Cliffs SPA	Guillemot; Razorbill*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Kittiwake	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Troup, Pennan an' Lion's Heads SPA	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Herring gull*	No LSE	Risk of collision	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Pentland Firth Islands SPA	Arctic tern	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Loch of Strathbeg SPA	Sandwich tern	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Moray and Nairn Coast SPA	Bar-tailed godwit; Greylag goose; Pink-footed goose; Redshank; Dunlin*; Oystercatcher*; Red-breasted merganser*; Wigeon*	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Moray and Nairn Coast Ramsar	Greylag goose; Pink-footed goose; Redshank	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Copinsay SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Great black-backed gull*	No LSE	Risk of collision	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Hoy SPA	Great skua; Arctic skua*	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
	Great black-backed gull*	No LSE	Risk of collision	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Guillemot*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Buchan Ness to Collieston Coast SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Herring gull*	No LSE	Risk of collision	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Auskerry SPA	Storm petrel	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Dornoch Firth and Loch Fleet SPA	Bar-tailed godwit; Greylag goose; Osprey; Wigeon	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Dornoch Firth and Loch Fleet Ramsar	Bar-tailed godwit; Greylag goose; Wigeon	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Rousay SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Marwick Head SPA	Guillemot	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Calf of Eday SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Cromarty Firth Ramsar	Bar-tailed godwit; Greylag goose; Common tern*; Dunlin*; Knot*; Oystercatcher*; Red-breasted merganser*; Redshank*; Scaup*; Wigeon*	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Cromarty Firth SPA	Bar-tailed godwit; Greylag goose; Whooper swan	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
West Westray SPA	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
Inner Moray Firth SPA	Bar-tailed godwit; Greylag goose; Red-breasted merganser; Redshank; Curlew*; Goldeneye*; Goosander*; Oystercatcher*; Scaup*; Teal*; Wigeon*	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Cormorant*	No LSE	No LSE	No LSE	No LSE
Inner Moray Firth Ramsar	Bar-tailed godwit; Greylag goose; Red-breasted merganser; Redshank	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Fowlsheugh SPA	Fulmar*	No LSE	No LSE	No LSE	No LSE
	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Herring gull*	No LSE	Risk of collision	No LSE	
	Kittiwake	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Cape wrath SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Guillemot*; Puffin*; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Sule Skerry and Sule Stack SPA	Gannet	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Puffin; Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Storm petrel	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Fair Isle SPA	Gannet*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Guillemot; Razorbill*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Great skua*	No LSE	Risk of collision	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Outer Firth of Forth and St Andrews Bay Complex SPA	Gannet	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Kittiwake	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Manx shearwater	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Puffin; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Sumburgh Head SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Foula SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Great skua	No LSE	Risk of collision	No LSE	

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Puffin	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
North Rona and Sula Sgeir SPA	Gannet	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Storm petrel	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Mousa SPA	Storm petrel	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Forth Islands SPA	Gannet	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Lesser black-backed gull	No LSE	Risk of collision	No LSE	
	Kittiwake	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Puffin; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Noss SPA	Gannet	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Great skua	No LSE	Risk of collision	No LSE	
	Kittiwake	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
St Abb's Head to Fast Castle SPA	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Ronas–Hill - North Roe and Tingon SPA	Great skua	No LSE	Risk of collision	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Northumberland Marine SPA	Puffin	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Fetlar SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Great skua	No LSE	Risk of collision	No LSE	

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
Canna and Sanday SPA	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	
Farne Islands SPA	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
Hermaness, Saxa Vord and Valla Field SPA	Gannet	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination.
	Fulmar*	No LSE	Disturbance and displacement	No LSE	
	Great skua	No LSE	Risk of collision	No LSE	
	Kittiwake*	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	
Coquet Island SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
Flamborough and Filey Coast SPA	Fulmar*	No LSE	Disturbance and displacement	No LSE	Effects cannot be screened out at this stage, alone or in-combination. Therefore, there is a potential for LSE alone or in-combination
	Gannet	Disturbance and displacement	Risk of collision; Disturbance and displacement	Disturbance and displacement	

Table 7.3. Summary of migratory fish screening.

Designated Site	Feature(s) to Consider for Assessment of No LSE	Potential Effects			Assessment of No LSE (Alone or In-combination)
		Construction	O&M	Decommissioning	
River Thurso SAC	Atlantic salmon	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
Berriedale and Langwell waters SAC	Atlantic salmon	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
River Spey SAC	Sea lamprey; Atlantic salmon	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
River Naver SAC	Atlantic salmon	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
River Borgie SAC	Atlantic salmon	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.
River Dee SAC	Atlantic salmon	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Underwater noise; Collision risk; Changes to prey	Underwater noise; Collision risk; Accidental pollution and water quality; Changes to prey	Effects cannot be screened out at this stage and therefore there is a potential for LSE.

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CALEDONIA
Offshore Wind Farm

Code UKCAL1–ARP–GEN–ENV–RPT-00002

Caledonia Offshore Wind Farm

Offshore HRA Screening Report: Appendix A – Seabird Screening

Caledonia Offshore Wind Farm

Title

Caledonia Offshore Wind Farm

Offshore HRA Screening Report: Appendix A – Seabird Screening

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004	September 28, 2022	Fourth draft	Comments from Ocean Winds
005	September 30, 2022	Final	-

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Acronyms and Abbreviations

ECC	Export Cable Corridor
GW	Gigawatt
HRA	Habitats Regulations Appraisal
LSE	Likely Significant Effect
MLWS	Mean Low Water Springs
MW	Megawatt
NETS	National Electricity Transmission System
OfTI	Offshore Transmission Infrastructure
OnTI	Onshore Transmission Infrastructure
OWF	Offshore Wind Farm
SD	Standard Deviation
SMP	Sectoral Marine Plan
SPA	Special Protection Area
WTG	Wind Turbine Generator

1. Introduction

1.1.1.1 In response to the Scottish Government's target of net-zero emissions of all greenhouse gases by 2045 and the aim to generate 50% of Scotland's overall energy consumption from renewable sources by 2030, the Crown Estate Scotland launched the ScotWind Leasing process in 2021, which released new areas of seabed within Scottish waters for future offshore development. The ambition, as set out in the Offshore Wind Policy Statement (Scottish Government, 2020a), was to offer 11 Gigawatts (GW) of offshore capacity within a series of Plan Options identified by the Scottish Government as the most suitable areas for development as set out within the Sectoral Marine Plan (SMP) for Offshore Wind (Scottish Government, 2020b).

1.1.1.2 In January 2022, as part of the ScotWind bidding round, Ocean Winds (the Developer) was successfully awarded an Option Agreement (granting exclusive rights) to develop an offshore wind farm (OWF) within the NE4 Plan Option, which is located within the Moray Firth, off the northeast coast of Scotland. Ocean Winds (via its 100% owned subsidiary Caledonia Offshore Wind Farm Limited) is now currently progressing the proposals for this OWF, which has been named the Caledonia Offshore Wind Farm (Caledonia OWF). The Terms of the Agreement are dependent upon Caledonia OWF being awarded all key consents and permissions to construct and operate the OWF from the relevant regulatory authorities, including Marine Scotland.

1.1.1.3 The Array Area is located within the NE4 Plan Option and is approximately 429 km2 in size, with the northern limit of the site being approximately 22 km from Wick and the southern limit of the site being approximately 38 km from Banff. Caledonia OWF is targeting a capacity of 2 GW for the Caledonia OWF. A maximum of 150 wind turbine generators (WTGs) will be located within the Array Area, with WTG capacities ranging from 14 to 25 Megawatts (MW).

1.1.1.4 Most of the Array Area is shallow enough to allow construction using fixed foundation technology which offers the preferred, lowest cost, lowest risk solution. Using current technology, indicatively 75% of the WTGs could be constructed using fixed foundations (this figure is likely to increase as technology advances). It is unlikely that floating foundations would be installed in water depths more suitable for fixed bottom technology. The threshold for floating technology is nominally defined as above 60 m water depth.

1.1.1.5 The Proposed Development has secured a connection to the National Electricity Transmission System (NETS). National Grid Electricity System Operator (ESO) has stated that the grid connection point will be at New Deer. The Proposed Development will incorporate various Offshore Transmission Infrastructure (OfTI) within the Array Area, as well as the offshore export cables transferring power between the Array Area and preferred landfall location. The footprint of the study area assessed within this Habitats Regulations Appraisal (HRA) Screening Report includes the Array Area, the offshore Export Cable Corridor (ECC) and potential landfall area. The Proposed Development also comprises the onshore infrastructure components located above the mean low water springs (MLWS) mark, which includes the Onshore Transmission Infrastructure (OnTI) that facilitate connection of the Proposed Development to the NETS at New Deer.

2 Offshore and Intertidal Ornithology Screening

2.1.1.1 The Offshore HRA Screening Report has been produced to inform the HRA process for the Project. It provides information to enable the screening of the Proposed Development with respect to the assessment of no likely significant effect (LSE) on European and Ramsar sites of nature conservation importance alone and in-combination.

2.1.1.2 This Appendix has been produced to support the offshore and intertidal ornithology sections of the Offshore HRA Screening Report. Table 2.1 presents a screening assessment which considers all UK coastal Special Protection Area (SPA) and Ramsar sites and identifies those sites where a designated breeding and/or non-breeding feature falls into the screening criteria (identified within the main Offshore HRA Screening Report). For sites where no species are identified within the criteria (no pathway of interaction with the Project exists), these are not considered further for screening and are greyed out.

Table 2.1 All SPA and Ramsar sites assessed for offshore and intertidal ornithology screening. Features with no pathway to Caledonia OWF highlighted in grey. "" Identifies species which are part of an assemblage feature only.*

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
East Caithness Cliffs SPA	Breeding seabird	21.3	39.0	Shag; Cormorant*	-	-	-	The Array Area is within the mean-maximum +1 Standard Deviation (SD) foraging ranges (Woodward *et al*., 2019) for designated seabird species. However, these species are not vulnerable to either collision with turbines or to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	Out	In
	Breeding seabird	21.3	39.0	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	21.3	39.0	Herring gull; Great black-backed gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	21.3	39.0	Kittiwake	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource		In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	21.3	39.0	Guillemot; Razorbill	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Caithness and Sutherland Peatlands Ramsar	Breeding waterbird	28.6	45.1	Dunlin	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Moray Firth SPA	Breeding seabird Non-breeding seabird	29.3	0.0	Shag	-	-	-	This species is beyond the mean-maximum +1SD foraging range from the Array Area during the breeding season (Woodward *et al*., 2019) and additionally has low vulnerability to collision and displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013). The offshore ECC however, directly overlaps with this SPA but this species additionally has low vulnerability to disturbance/ displacement from vessel traffic (Fliessbach *et al*., 2019). The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor.	Yes	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Non-breeding waterbird	29.3	0.0	Common scoter; Eider; Goldeneye; Great northern diver; Long-tailed duck; Red-breasted merganser; Red-throated diver; Scaup; Slavonian grebe; Velvet scoter	Disturbance and displacement	-	Disturbance and displacement	The cable corridor directly overlaps with this SPA with some species having high or very high vulnerability to disturbance / displacement from offshore wind farms and vessel disturbance (Bradbury *et al.*, 2014; Dierschke *et al.*, 2016, Furness *et al.*, 2013; Fliessbach *et al.*, 2019). Therefore, LSE cannot be discounted. Therefore, LSE cannot be discounted for this impact. Migratory birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). The negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be trivial. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination.	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
North Caithness Cliffs SPA	Breeding seabird	31.2	55.6	Guillemot; Razorbill*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	31.2	55.6	Fulmar*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	31.2	55.6	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Troup, Pennan and Lion's Heads SPA	Breeding seabird	32.3	4.3	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	32.3	4.3	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	
	Breeding seabird	32.3	4.3	Herring gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	32.3	4.3	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement/disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In	
Pentland Firth Islands SPA	Breeding seabird	37.8	64.6	Arctic tern	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016) but is considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Scapa flow SPA	Non-breeding waterbird	48.7	76.2	Eider*; Goldeneye*; Long-tailed duck*; Red-breasted merganser*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding seabird	48.7	76.2	Shag*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Loch of Strathbeg SPA	Breeding seabird	50.9	31.2	Sandwich tern	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
Loch of Strathbeg SPA-	Non-breeding waterbird	50.9	31.2	Barnacle goose; Greylag goose; Pink-footed goose; Whooper swan; Goldeneye*; Teal*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
	Non-breeding waterbird	50.9	31.2	Greylag goose; Pink-footed goose; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Moray and Nairn Coast SPA	Non-breeding waterbird	53.3	20.6	Bar-tailed godwit; Greylag goose; Pink-footed goose; Redshank; Dunlin*; Oystercatcher*; Red-breasted merganser*; Wigeon*	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
Moray and Nairn Coast Ramsar	Non-breeding waterbird	53.3	20.6	Greylag goose; Pink-footed goose; Redshank	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Switha SPA	Non-breeding waterbird	53.8	79.9	Barnacle goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Copinsay SPA	Breeding seabird	54.7	80.1	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
	Breeding seabird	54.7	80.1	Great black-backed gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	54.7	80.1	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		In	
	Breeding seabird	54.7	80.1	Guillemot*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Hoy SPA	Breeding seabird	55.6	80.1	Great skua; Arctic skua*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	55.6	80.1	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Breeding seabird	55.6	80.1	Great black-backed gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	55.6	80.1	Guillemot*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	55.6	80.1	Kittiwake	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	In	In	
North Orkney SPA	Non-breeding waterbird	60.7	87.9	Eider*; Long-tailed duck*; Red-breasted merganser*; Velvet scoter*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
	Non-breeding seabird	60.7	87.9	Shag*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Buchan Ness to Collieston Coast SPA	Breeding seabird	68.7	44.0	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Furness *et al*., 2013; Dierschke *et al*., 2016). Therefore, LSE cannot be discounted for this impact.	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Breeding seabird	68.7	44.0	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	68.7	44.0	Herring gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	68.7	44.0	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		In	
Buchan Ness to Collieston Coast SPA	Breeding seabird	68.7	44.0	Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Tips of Corsemaul and Tom Mor SPA	Breeding seabird	70.1	30.5	Common gull	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Auskerry SPA	Breeding seabird	71.5	95.8	Arctic tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Auskerry SPA	Breeding seabird	71.5	95.8	Storm petrel	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	Breeding seabird	74.0	42.3	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	74.0	42.3	Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Ythan Estuary and Meikle Loch Ramsar	Non-breeding waterbird	74.0	42.3	Pink-footed goose; Eider*; Lapwing*; Redshank*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	74.7	42.2	Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Non-breeding waterbird	74.7	42.2	Pink-footed goose	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to its migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Dornoch Firth and Loch Fleet SPA	Non-breeding waterbird	77.0	63.8	Bar-tailed godwit; Greylag goose; Osprey; Wigeon	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
Dornoch Firth and Loch Fleet Ramsar	Non-breeding waterbird	77.0	63.8	Bar-tailed godwit; Greylag goose; Wigeon	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver,	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
Rousay SPA	Breeding seabird	88.6	115.9	Arctic tern; Arctic skua*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Rousay SPA	Breeding seabird	88.6	115.9	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	88.6	115.9	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	88.6	115.9	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Marwick Head SPA	Breeding seabird	89.3	115.7	Guillemot	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	89.3	115.7	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Calf of Eday SPA	Breeding seabird	92.4	117.6	Cormorant*; Great black-backed gull*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Calf of Eday SPA	Breeding seabird	92.4	117.6	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
	Breeding seabird	92.4	117.6	Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	92.4	117.6	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
East Sanday Coast SPA	Non-breeding waterbird	93.2	117.1	Bar-tailed godwit; Purple sandpiper; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
East Sanday Coast Ramsar	Non-breeding waterbird	93.2	117.1	Purple sandpiper; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Cromarty Firth SPA	Breeding seabird	95.2	75.1	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Cromarty Firth SPA	Non-breeding waterbird	95.2	75.1	Bar-tailed godwit; Greylag goose; Whooper swan	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
Cromarty Firth Ramsar	Non-breeding waterbird	95.2	75.1	Bar-tailed godwit; Greylag goose; Common tern*; Dunlin*; Knot*; Oystercatcher*; Red-breasted merganser*; Redshank*; Scaup*; Wigeon*	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk.	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
North Sutherland Coastal Islands SPA	Non-breeding waterbird	97.5	113.1	Barnacle goose	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to its migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
West Westray SPA	Breeding seabird	99.6	127.1	Arctic tern; Arctic skua*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
West Westray SPA	Breeding seabird	99.6	127.1	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	99.6	127.1	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	99.6	127.1	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Inner Moray Firth SPA	Breeding seabird	100.4	71.9	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Inner Moray Firth SPA	Non-breeding waterbird	100.4	71.9	Bar-tailed godwit; Greylag goose; Red-breasted merganser; Redshank; Curlew*; Goldeneye*; Goosander*; Oystercatcher*; Scaup*; Teal*; Wigeon*	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter), therefore LSE can be discounted for this impact. Nevertheless, as these	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Non-breeding seabird	100.4	71.9	Cormorant*	-	-	-	This non-breeding seabird may pass windfarms during their migrations; however, this species is not vulnerable to either collision with turbines or to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	Out	
Inner Moray Firth Ramsar	Non-breeding waterbird	100.4	71.9	Bar-tailed godwit; Greylag goose; Red-breasted merganser; Redshank	-	Collision Risk	-	Migratory birds may pass windfarms during their migrations; noting, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al*., 2009 – common eider; Speakman *et al*., 2009 – red-throated diver, whooper swan, common scoter),	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								therefore LSE can be discounted for this impact. Nevertheless, as these non-breeding features may have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array and therefore, LSE cannot be discounted in relation to collision risk. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
Papa Westray (North Hill and Holm) SPA	Breeding seabird	108.1	134.4	Arctic skua; Arctic tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Fowlsheugh SPA	Breeding seabird	118.3	82.2	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	118.3	82.2	Guillemot; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	118.3	82.2	Herring gull*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	118.3	82.2	Kittiwake	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		In	
Cape wrath SPA	Breeding seabird	124.5	139.4	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Breeding seabird	124.5	139.4	Guillemot*; Puffin*; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	124.5	139.4	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Sule Skerry and Sule Stack SPA	Breeding seabird	125.5	147.0	Leach's petrel	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	125.5	147.0	Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
								The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact.			
Sule Skerry and Sule Stack SPA	Breeding seabird	125.5	147.0	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	125.5	147.0	Puffin; Guillemot*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								(Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	125.5	147.0	Storm petrel	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Fair Isle SPA	Breeding seabird	134.4	150.0	Arctic tern; Arctic skua*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	134.4	150.0	Gannet*	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Fair Isle SPA											In
	Breeding seabird	134.4	150.0	Guillemot; Razorbill*; Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	134.4	150.0	Great skua*	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have moderate / high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	134.4	150.0	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource	In	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Montrose Basin SPA	Non-breeding waterbird	140.1	102.9	Greylag goose; Pink-footed goose; Redshank; Dunlin*; Eider*; Knot*; Oystercatcher*; Shelduck*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Montrose Basin Ramsar	Non-breeding waterbird	140.1	102.9	Greylag goose; Pink-footed goose; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*,	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Handa SPA	Breeding seabird	142.7	153.7	Guillemot; Razorbill; Fulmar*; Kittiwake*; Great skua*l	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
Outer Firth of Forth and St Andrews Bay Complex SPA	Breeding seabird	159.6	122.5	Arctic tern; Common tern; Herring gull; Shag; Guillemot; Black-headed gull*; Common gull*; Herring gull*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Outer Firth of Forth and St Andrews Bay Complex SPA	Breeding seabird	159.6	122.5	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	159.6	122.5	Kittiwake	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	159.6	122.5	Manx shearwater	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Furness *et al*., 2013; Bradbury *et al*., 2014; Dierschke *et al*., 2016; JNCC (2022)). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	159.6	122.5	Puffin; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Outer Firth of Forth and St Andrews Bay Complex SPA	Non-breeding seabird Non-breeding waterbird	159.6	122.5	Kittiwake; Guillemot; Razorbill; Black-headed gull; Common gull; Herring gull; Little gull; Shag; Common scoter; Eider; Goldeneye; Long-tailed duck; Red-breasted merganser; Red-throated diver; Slavonian grebe; Velvet scoter	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Firth of Tay and Eden Estuary SPA	Breeding seabird	168.9	131.6	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird Non-breeding seabird	168.9	131.6	Bar-tailed godwit; Greylag goose; Pink-footed goose; Redshank; common scoter*; Dunlin*; Eider*; Goldeneye*; Goosander*; Grey plover*; Long-tailed duck*; Oystercatcher*; Red-breasted merganser*; Sanderling*; Shelduck*; Velvet scoter*; Cormorant*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Firth of Tay and Eden Estuary Ramsar	Non-breeding waterbird	168.9	131.6	Bar-tailed godwit; Greylag goose; Pink-footed goose; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Priest Island (Summer Isles) SPA	Breeding seabird	169.5	166.2	Storm petrel	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
Sumburgh Head SPA	Breeding seabird	178.3	192.7	Arctic tern; Guillemot*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Sumburgh Head SPA	Breeding seabird	178.3	192.7	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
	Breeding seabird	178.3	192.7	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore,	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Firth of Forth SPA	Non-breeding seabird	191.6	154.5	Sandwich tern; Cormorant*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								discounted in relation to all effects alone.			
	Non-breeding waterbird	191.6	154.5	Bar-tailed godwit; Golden plover; Knot; Pink-footed goose; Redshank; Red-throated diver; Shelduck; Slavonian grebe; Turnstone; Common scoter*; Curlew*; Dunlin*; Eider*; Goldeneye*; Great crested grebe*; Grey plover*; Lapwing*; Long-tailed duck*; Mallard*; Oystercatcher*; Red-breasted merganser*; Ringed plover*; Scaup*; Velvet scoter*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Firth of Forth Ramsar	Non-breeding waterbird	191.6	154.5	Bar-tailed godwit; Goldeneye; Knot; Pink-footed goose; Redshank; Shelduck; Slavonian grebe; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Foula SPA	Breeding seabird	192.3	213.3	Arctic tern; Guillemot; Leach's petrel; Shag; Arctic skua*; Razorbill*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Foula SPA	Breeding seabird	192.3	213.3	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
	Breeding seabird	192.3	213.3	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have moderate / high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	192.3	213.3	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		In	
	Breeding seabird	192.3	213.3	Puffin	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
North Rona and Sula Sgeir SPA	Breeding seabird	196.6	214.7	Guillemot; Leach's petrel; Great black-backed gull*; Razorbill*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
								The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact.			
	Breeding seabird	196.6	214.7	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	196.6	214.7	Storm petrel	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement/ disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et*	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								al., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	196.6	214.7	Fulmar*	-	Disturbance and displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	
	Breeding seabird	196.6	214.7	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								(Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	196.6	214.7	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Mousa SPA	Breeding seabird	197.4	211.7	Arctic tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Mousa SPA	Breeding seabird	197.4	211.7	Storm petrel	Disturbance and Displacement	Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have low to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE can be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, there is uncertainty within the vulnerability factors (Wade *et al.,* 2016), therefore this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
Forth Islands SPA	Breeding seabird	198.9	161.8	Arctic tern; Common tern; Roseate tern; Sandwich tern; Shag; Cormorant*; Guillemot*; Herring gull*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Forth Islands SPA	Breeding seabird	198.9	161.8	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	198.9	161.8	Lesser black-backed gull	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	198.9	161.8	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been		In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	198.9	161.8	Puffin; Razorbill*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Noss SPA	Breeding seabird	212.3	226.6	Guillemot	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Noss SPA	Breeding seabird	212.3	226.6	Gannet	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement / disturbance from	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Breeding seabird	212.3	226.6	Fulmar*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Breeding seabird	212.3	226.6	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have moderate / high vulnerability to collision with turbines (Bradbury *et al*., 2014).	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
	Breeding seabird	212.3	226.6	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.		In	
	Breeding seabird	212.3	226.6	Puffin*	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Shiant Isles SPA	Breeding seabird	215.9	211.6	Puffin; Kittiwake*; Fulmar*	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
	Breeding seabird	215.9	211.6	Razorbill; Shag; Guillemot*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Non-breeding waterbird	215.9	211.6	Barnacle goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
Papa Stour SPA	Breeding seabird	221.8	240.8	Arctic tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Imperial Dock Lock, Leith SPA	Breeding seabird	228.7	191.0	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
St Abb's Head to Fast Castle SPA	Breeding seabird	229.1	192.6	Guillemot*; Herring gull*; Razorbill*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
St Abb's Head to Fast Castle SPA	Breeding seabird	229.1	192.6	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
Rum SPA	Breeding seabird	244.2	216.0	Manx shearwater; Kittiwake	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
Rum SPA	Breeding seabird	244.2	216.0	Guillemot*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Ronas Hill - North Roe and Tingon SPA	Breeding seabird	245.6	264.0	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but is considered to have moderate	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
West Coast of the Outer Hebrides SPA	Non-breeding waterbird	246.9	243.1	Black-throated diver; Eider; Great northern diver; Long-tailed duck; Red-breasted merganser; Slavonian grebe	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Lindisfarne SPA	Breeding seabird	251.3	215.0	Little tern; Roseate tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird	251.3	215.0	Bar-tailed godwit; Common scoter; Dunlin; Eider; Golden plover; Grey plover; Greylag goose; Light-bellied brent goose; Long-tailed duck; Red-breasted merganser; Redshank; Ringed plover; Sanderling; Shelduck; Whooper swan; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Lindisfarne Ramsar	Non-breeding waterbird	251.3	215.0	Bar-tailed godwit; Greylag goose; Light-bellied brent goose; Redshank; Ringed plover; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Northumbria Coast SPA	Breeding seabird	251.7	215.4	Arctic tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	251.7	215.4	Purple sandpiper; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Northumbria Coast Ramsar	Breeding seabird	251.7	215.4	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	251.7	215.4	Purple sandpiper; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Northumberland Marine SPA	Breeding seabird	251.8	215.5	Puffin	Disturbance and displacement	Disturbance and displacement	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to have high vulnerability to collision with turbines but is vulnerable to displacement / disturbance from offshore wind farms and vessel traffic (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	251.8	215.5	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Breeding seabird	251.8	215.5	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Northumberland Marine SPA	Breeding seabird	251.8	215.5	Arctic tern; Common tern; Guillemot; Little tern; Roseate tern; Sandwich tern; Black-headed gull*; Cormorant*; Great black-backed gull*; Herring gull*; Razorbill*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	251.8	215.5	Lesser black-backed gull*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Fetlar SPA	Breeding seabird	258.1	273.8	Arctic tern; Arctic skua*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Fetlar SPA	Breeding seabird	258.1	273.8	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	In
	Breeding seabird	258.1	273.8	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et*	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								al., 2016; Furness *et al*., 2013) but is considered to have moderate vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Glas Eileanan SPA	Breeding seabird	259.1	223.2	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Canna and Sanday SPA	Breeding seabird	259.8	232.5	Guillemot*; Herring gull*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	259.8	232.5	Kittiwake*; Puffin*	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	
Inner Clyde Estuary SPA	Non-breeding waterbird	261.8	222.2	Redshank	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 –	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Inner Clyde Estuary Ramsar	Non-breeding waterbird	261.8	222.2	Redshank	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Ramna Stacks and Gruney SPA	Breeding seabird	263.6	281.1	Leach's petrel	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Farne Islands SPA	Breeding seabird	266.2	230.6	Arctic tern; Common tern; Guillemot; Roseate tern; Sandwich tern; Cormorant*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	266.2	230.6	Puffin*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Farne Islands SPA	Breeding seabird	266.2	230.6	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC (2022)). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
North Uist Machair and Islands SPA	Non-breeding waterbird	272.0	263.7	Barnacle goose; Purple sandpiper; Ringed plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
North Uist Machair and Islands Ramsar	Non-breeding waterbird	272.0	263.7	Barnacle goose; Ringed plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding waterbird	272.0	263.7	Dunlin; Ringed plover	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Hermaness, Saxa Vord and Valla Field SPA	Breeding seabird	277.2	293.2	Puffin; Guillemot*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Hermaness, Saxa Vord and Valla Field SPA	Breeding seabird	277.2	293.2	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	In
	Breeding seabird	277.2	293.2	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	Yes	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	277.2	293.2	Great skua	-	Collision risk	-	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. These species are not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013) but are considered to have moderate / high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
	Breeding seabird	277.2	293.2	Kittiwake*	Disturbance and Displacement	Collision Risk; Disturbance and Displacement	Disturbance and Displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to collision with turbines (Bradbury *et al*., 2014). Therefore, LSE cannot be discounted for this impact. This species is not considered to be highly sensitive to displacement / disturbance to offshore wind farms (Bradbury *et al*., 2014; Dierschke *et al*., 2016; Furness *et al*., 2013; JNCC, 2022). Nevertheless, kittiwake have previously been requested to be screened in for disturbance and displacement for developments in Scotland (not screened in for developments in England or Wales). Therefore, this species has been screened in on a precautionary basis for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource	In	In	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.			
Flannan Isles SPA	Breeding seabird	282.2	289.3	Kittiwake*; Fulmar*	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
	Breeding seabird	282.2	289.3	Leach's petrel Guillemot*; Puffin*; Razorbill*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Coll SPA	Non-breeding waterbird	283.3	250.8	Barnacle goose; Greenland white-fronted goose	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Coll Ramsar	Non-breeding waterbird	283.3	250.8	Greenland white-fronted goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Treshnish Isles SPA	Breeding seabird	289.2	255.2	Storm petrel	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
	Non-breeding waterbird	289.2	255.2	Barnacle goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
South Uist Machair and Lochs SPA	Breeding seabird	294.1	275.1	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	294.1	275.1	Ringed plover; Sanderling	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
South Uist Machair and Lochs Ramsar	Non-breeding waterbird	294.1	275.1	Ringed plover	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding waterbird	294.1	275.1	Dunlin; Ringed plover	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Sound of Gigha SPA	Non-breeding waterbird	300.6	261.8	Eider; Great northern diver; Red-breasted merganser; Slavonian grebe	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Coquet Island SPA	Breeding seabird	300.9	265.2	Arctic tern; Common tern; Roseate tern; Sandwich tern; Black-headed gull*; Herring gull*; Lesser black-backed gull*; Kittiwake*; Puffin*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Coquet Island SPA	Breeding seabird	300.9	265.2	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are	Yes	In	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
North Colonsay and Western Cliffs SPA	Breeding seabird	305.1	268.3	Guillemot*; Kittiwake*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	305.1	268.3	Chough	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA	Non-breeding waterbird	305.4	272.5	Barnacle goose; Greenland white-fronted goose; Ringed plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) Ramsar	Non-breeding waterbird	305.4	272.5	Barnacle goose; Greenland white-fronted goose; Ringed plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding waterbird	305.4	272.5	Dunlin	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Castle Loch, Lochmaben Ramsar	Non-breeding waterbird	325.6	287.8	Pink-footed goose	-	-	-	This non-breeding features is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Castle Loch, Lochmaben SPA	Non-breeding waterbird	325.6	287.8	Pink-footed goose	-	-	-	This non-breeding features is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Gruinart Flats, Islay SPA	Non-breeding waterbird	331.4	294.0	Barnacle goose; Chough; Greenland white-fronted goose; Light-bellied brent goose	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Gruinart Flats, Islay Ramsar	Non-breeding waterbird	331.4	294.0	Barnacle goose; Greenland white-fronted goose; Light-bellied brent goose	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Mingulay and Berneray SPA	Breeding seabird	332.5	305.8	Razorbill; Guillemot; Kittiwake*; Puffin*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	332.5	305.8	Fulmar*	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	
Rinns of Islay SPA	Non-breeding waterbird	336.8	299.5	Chough; Greenland white-fronted goose; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Rinns of Islay Ramsar	Non-breeding waterbird	336.8	299.5	Barnacle goose; Greenland white-fronted goose; Whooper swan	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Upper Solway Flats and Marshes SPA	Non-breeding waterbird	337.1	299.8	Barnacle goose; Bar-tailed godwit; Curlew; Golden plover; Knot; Oystercatcher; Pink-footed goose; Pintail; Redshank; Scaup; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								discounted in relation to all effects alone.			
Upper Solway Flats and Marshes Ramsar	Breeding waterbird	337.1	299.8	Curlew	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	337.1	299.8	Barnacle goose; Bar-tailed godwit; Knot; Oystercatcher; Pink-footed goose; Pintail; Redshank; Scaup; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Solway Firth SPA	Non-breeding waterbird	337.1	299.8	Barnacle goose; Bar-tailed godwit; Common scoter; Curlew; Dunlin; Golden plover; Goldeneye; Goosander; Grey plover; Knot; Lapwing; Oystercatcher; Pink-footed goose; Pintail; Redshank; Red-throated diver; Sanderling; Scaup; Shelduck; Shoveler; Teal; Turnstone; Whooper swan; Ringed plover	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*,	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
	Non-breeding seabird Non-breeding waterbird	337.1	299.8	Black-headed gull; Common gull; Cormorant; Herring gull; Common scoter*; Dunlin*; Goldeneye*; Goosander*; Grey plover*; Lapwing*; Sanderling*; Shelduck*; Shoveler*; Teal*; Turnstone*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Bridgend Flats, Islay Ramsar	Non-breeding waterbird	339.1	301.4	Barnacle goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Bridgend Flats, Islay SPA	Non-breeding waterbird	339.1	301.4	Barnacle goose	-	-	-	This non-breeding feature do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
St Kilda SPA	Breeding seabird	340.4	338.5	Gannet; Fulmar*; Manx shearwater*; Great skua	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Breeding seabird	340.4	338.5	Leach's petrel; Puffin; Storm petrel; Guillemot*; Kittiwake*; Razorbill*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Laggan, Islay SPA	Non-breeding waterbird	343.5	305.8	Barnacle goose; Greenland white-fronted goose	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Ailsa Craig SPA	Breeding seabird	343.6	304.0	Gannet	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
	Breeding seabird	343.6	304.0	Lesser black-backed gull ; Guillemot*; Herring gull*; Kittiwake*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Teesmouth and Cleveland Coast SPA	Breeding seabird	371.0	335.4	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding seabird Non-breeding waterbird	371.0	335.4	Sandwich tern Herring gull*; Black-headed gull*; Knot; Redshank; Ruff; Gadwall*; Lapwing*; Sanderling*; Shoveler*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								discounted in relation to all effects alone.			
Teesmouth and Cleveland Coast Ramsar	Non-breeding waterbird	371.0	335.4	Knot; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Rathlin Island SPA	Breeding seabird	375.6	336.8	Guillemot; Kittiwake; Razorbill; Common gull*; Herring gull*; Lesser black-backed gull*; Puffin*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	375.6	336.8	Fulmar*	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	
Loch of Inch and Torrs Warren SPA	Non-breeding waterbird	377.0	337.4	Greenland white-fronted goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Loch of Inch and Torrs Warren Ramsar	Non-breeding waterbird	377.0	337.4	Greenland white-fronted goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Sheep Island SPA	Breeding seabird	389.1	350.4	Cormorant	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Larne Lough SPA	Breeding seabird	407.6	368.1	Common tern; Roseate tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	407.6	368.1	Light-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
Larne Lough Ramsar	Breeding seabird	407.6	368.1	Common tern; Roseate tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	407.6	368.1	Light-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
Morecambe Bay and Duddon Estuary SPA	Breeding seabird	407.8	370.5	Common tern; Herring gull; Lesser black-backed gull; Little tern; Sandwich tern' Arctic tern*; Black-headed gull*; Great black-backed gull*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	407.8	370.5	Bar-tailed godwit; Black-tailed godwit; Curlew; Dunlin; Golden plover; Grey plover; Knot; Little egret; Oystercatcher; Pink-footed goose; Pintail; Redshank; Ringed plover; Ruff; Sanderling; Shelduck; Turnstone; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Copeland Islands SPA	Non-breeding seabird	407.8	370.5	Lesser black-backed gull; Mediterranean gull	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	413.5	373.9	Arctic tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Breeding seabird	413.5	373.9	Manx shearwater	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Morecambe Bay Ramsar	Breeding seabird	416.7	379.5	Herring gull; Lesser black-backed gull; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird Non-breeding seabird	416.7	379.5	Bar-tailed godwit; Dunlin; Eider; Golden plover; Goldeneye; Great crested grebe; Grey plover; Knot; Lapwing; Oystercatcher; Pink-footed goose; Pintail; Red-breasted merganser; Redshank; Ringed plover; Ringed plover; Sanderling; Shelduck; Turnstone; Wigeon Cormorant	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Morecambe Bay Ramsar	Breeding waterbird	416.7	379.5	Curlew	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Outer Ards SPA	Breeding seabird	417.0	377.4	Arctic tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	417.0	377.4	Golden plover; Light-bellied brent goose; Ringed plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Outer Ards Ramsar	Non-breeding waterbird	417.0	377.4	Golden plover; Light-bellied brent goose; Ringed plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Duddon Estuary Ramsar	Non-breeding waterbird	417.0	379.7	Knot; Pintail; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Lough Foyle SPA	Non-breeding waterbird	418.1	380.1	Bar-tailed godwit; Bewick's swan; Golden plover; Light-bellied brent goose; Whooper swan; Curlew*; Dunlin*; Eider*; Great crested grebe*; Greenshank*; Grey plover*; Greylag goose*; Knot*; Lapwing*; Mallard*; Mute swan*; Oystercatcher*; Red-breasted merganser*; Redshank*; Red-throated diver*; Shelduck*; Teal*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Lough Foyle Ramsar	Non-breeding waterbird	418.1	380.1	Bar-tailed godwit; Light-bellied brent goose; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Belfast Lough SPA	Non-breeding waterbird	418.7	379.2	Great crested grebe; Redshank; Bar-tailed godwit*; Black-tailed godwit*; Curlew*; Dunlin*; Eider*; Goldeneye*; Great crested grebe*; Oystercatcher*; Purple sandpiper*; Red-breasted merganser*; Scaup*; Shelduck*; Turnstone*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Belfast Lough Ramsar	Non-breeding waterbird	418.7	379.2	Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Belfast Lough Open Water SPA	Non-breeding waterbird	418.9	379.3	Great crested grebe	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Strangford Lough SPA	Breeding seabird	429.9	390.3	Arctic tern; Common tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	429.9	390.3	Bar-tailed godwit*; Black-tailed godwit*; coot*; Curlew*; Dunlin*; Eider*; Gadwall*; Golden plover*; Goldeneye*; Great crested grebe*; Greenshank*; Grey plover; Greylag goose;	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
				Lapwing; Mallard; Mute swan; Oystercatcher; Pintail; Red-breasted merganser; Ringed plover; Shelduck; Shoveler; Teal; Turnstone; Wigeon				foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Strangford Lough Ramsar	Breeding seabird	429.9	390.3	Common tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	429.9	390.3	Knot; Light-bellied brent goose; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Lough Neagh and Lough Beg SPA	Breeding seabird	432.5	393.4	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	432.5	393.4	Bewick's swan; Whooper swan	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
Lough Neagh and Lough Beg Ramsar	Non-breeding waterbird	432.5	393.4	Goldeneye; Pochard; Scaup; Tufted duck; Tundra swan; Whooper swan	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Flamborough and Filey Coast SPA	Breeding seabird	435.9	401.6	Kittiwake; Guillemot; Razorbill; Cormorant*; Herring gull*; Puffin*; Shag*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Flamborough and Filey Coast SPA	Breeding seabird	435.9	401.6	Fulmar*	-	Disturbance and Displacement	-	The Array Area has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward *et al*., 2019). This species has low vulnerability to displacement and collision (Bradbury *et al*., 2014). However, previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke *et al*., 2016; Furness *et al*., 2013).	Yes	In	In

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all effects alone or in-combination.			
	Breeding seabird	435.9	401.6	Gannet	Disturbance and displacement	Disturbance and displacement Collision risk	Disturbance and displacement	The Array Area is within the mean-maximum +1SD foraging ranges (Woodward *et al*., 2019) for designated seabird species. This species is considered to have high vulnerability to both collision with turbines and to displacement / disturbance from offshore wind farms (Bradbury *et al*., 2014, Dierschke *et al*., 2016; Furness *et al*., 2013). Therefore, LSE cannot be discounted for this impact. The pathway to effects due to insufficient prey resource is weak for this highly mobile receptor. Temporary and low-impact effects are anticipated for local fish and benthic ecology. As such, there would be sufficient alternative resource available to support the species population. All other potential effects are highly unlikely to result in an LSE for this species-site combination. Therefore, LSE can be discounted in relation to all other effects alone or in-combination.	Yes	In	
Bowland Fells SPA	Breeding seabird	438.0	401.0	Lesser black-backed gull	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Liverpool Bay / Bae Lerpwl SPA	Breeding seabird	446.1	408.8	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird Non-breeding seabird	446.1	408.8	Common scoter; Red-throated diver Little gull	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Killough Bay SPA	Non-breeding waterbird	460.9	421.3	Light-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Killough Bay Ramsar	Non-breeding waterbird	460.9	421.3	Light-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Greater Wash SPA	Breeding seabird	464.2	429.9	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird Non-breeding seabird	464.2	429.9	Common scoter; Red-throated diver Little gull	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Ribble and Alt Estuaries SPA	Breeding seabird	471.5	434.2	Common tern; Lesser black-backed gull; Black-headed gull*; Common tern*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	471.5	434.2	Bar-tailed godwit; Bewick's swan; Black-tailed godwit; Dunlin; Golden plover; Grey plover; Knot; Oystercatcher; Pink-footed goose; Pintail; Redshank; Ringed plover; Sanderling; Shelduck; Teal; Whooper swan; Wigeon; Scaup*; Whimbrel*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Ribble and Alt Estuaries Ramsar	Breeding seabird	471.5	434.2	Lesser black-backed gull	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding seabird	471.5	434.2	Lesser black-backed gull; Cormorant*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Non-breeding waterbird	471.5	434.2	Bar-tailed godwit; Bewick's swan; Black-tailed godwit; Dunlin; Grey plover; Knot; Oystercatcher; Pink-footed goose; Pintail; Redshank; Ringed plover; Sanderling; Shelduck; Teal; Whooper swan; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Humber Estuary SPA	Breeding seabird	484.9	449.4	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	484.9	449.4	Avocet; Bar-tailed godwit; Bittern; Black-tailed godwit; Dunlin; Golden plover; Knot; Redshank; Ruff; Shelduck; Curlew*; Dark-bellied brent goose*; Goldeneye*; Mallard*; Oystercatcher*; Pink-footed goose*; Pochard*; Ringed plover*; Sanderling*; Scaup*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Humber Estuary Ramsar	Non-breeding waterbird	484.9	449.4	Bar-tailed godwit; Black-tailed godwit; Black-tailed godwit; Dunlin; Dunlin; Golden plover; Golden plover; Knot; Knot; Redshank; Shelduck	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Carlingford Lough SPA	Non-breeding waterbird	493.8	454.2	Light-bellied brent goose; Dunlin*; Grey plover*; Oystercatcher*; Redshank*; Ringed plover*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	493.8	454.2	Common tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Carlingford Lough Ramsar	Non-breeding waterbird	493.8	454.2	Light-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	493.8	454.2	Arctic tern; Common tern; Roseate tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Mersey Narrows and North Wirral Foreshore SPA	Breeding seabird	505.6	468.4	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird Non-breeding seabird	505.6	468.4	Bar-tailed godwit; Knot; Dunlin*; Grey plover*; Knot*; Oystercatcher*; Redshank*; Sanderling* Common tern; Little gull; Cormorant	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Mersey Narrows and North Wirral Foreshore Ramsar	Non-breeding seabird Non-breeding waterbird	505.6	468.4	Common tern; Cormorant; Little gull Bar-tailed godwit; Dunlin; Grey plover; Knot; Oystercatcher; Redshank; Sanderling	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Anglesey Terns / Morwenoliaid Ynys Môn SPA	Breeding seabird	511.8	473.2	Arctic tern; Common tern; Roseate tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
The Dee Estuary SPA	Breeding seabird	515.0	477.7	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding seabird	515.0	477.7	Sandwich tern	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
	Non-breeding waterbird	515.0	477.7	Bar-tailed godwit; Black-tailed godwit; Curlew; Dunlin; Grey plover; Knot; Oystercatcher; Pintail; Redshank; Shelduck; Teal	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 –	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
	Breeding waterbird	515.0	477.7	Black-tailed godwit; Dunlin	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
The Dee Estuary Ramsar	Non-breeding waterbird	515.0	477.7	Bar-tailed godwit; Curlew; Grey plover; Knot; Oystercatcher; Pintail; Redshank; Redshank; Shelduck; Teal	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Mersey Estuary SPA	Non-breeding waterbird	515.7	478.5	Black-tailed godwit*; Curlew*; Dunlin*; Golden plover*; Great crested grebe*; Grey plover*; Lapwing*; Pintail*; Redshank*; Ringed plover*;	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
				Shelduck*; Teal*; Wigeon*				species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Ynys Seiriol / Puffin Island SPA	Breeding seabird	529.9	492.0	Cormorant	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Traeth Lafan/ Lavan Sands, Conway Bay SPA	Non-breeding waterbird	534.8	496.9	Oystercatcher	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Gibraltar Point SPA	Breeding seabird	570.1	535.9	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	570.1	535.9	Bar-tailed godwit; Grey plover; Sanderling	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Gibraltar Point Ramsar	Non-breeding waterbird	570.1	535.9	Bar-tailed godwit; Dark-bellied brent goose; Grey plover; Sanderling	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*,	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
	Breeding seabird	572.4	538.2	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
The Wash SPA	Non-breeding waterbird Non-breeding seabird	572.4	538.2	Bar-tailed godwit; Bewick's swan; Black-tailed godwit; Common scoter; Curlew; Dark-bellied brent goose; Dunlin; Gadwall; Goldeneye; Grey plover; Knot; Oystercatcher; Pink-footed goose; Pintail; Redshank; Sanderling; Shelduck; Turnstone; Wigeon; Avocet*; Golden plover*; Greater white-fronted goose*; Lapwing*; Little Grebe*; Mallard*; Ringed plover*; Teal*; Turnstone*; Whimbrel*; Whooper swan* Great black-backed gull*; Herring gull*; Lesser black-backed gull*; Black-headed gull*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
The Wash Ramsar	Breeding waterbird	572.4	538.2	Curlew	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird	572.4	538.2	Bar-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover; Knot; Oystercatcher; Pink-footed goose; Pintail; Redshank; Sanderling; Shelduck; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Northern Cardigan Bay / Gogledd Bae Ceredigion SPA	Non-breeding waterbird	576.5	538.5	Red-throated diver	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
North Norfolk Coast SPA	Breeding seabird	589.3	555.3	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	589.3	555.3	Dark-bellied brent goose; Knot; Pink-footed goose; Wigeon; Greater white-fronted goose; Grey plover; Oystercatcher; Pintail; Redshank; Ringed plover; Shelduck;	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
North Norfolk Coast Ramsar	Breeding seabird	589.3	555.3	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	589.3	555.3	Dark-bellied brent goose; Knot; Pink-footed goose; Pintail; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA	Breeding seabird	591.3	552.7	Manx shearwater	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	Out
	Non-breeding waterbird	591.3	552.7	Chough	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Ouse Washes Ramsar	Non-breeding waterbird	627.3	592.7	Gadwall; Pintail; Shoveler; Teal; Tundra swan; Whooper swan; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Ouse Washes SPA	Non-breeding waterbird	627.3	592.7	Bewick's swan; Pintail; Shoveler; Teal; Whooper swan; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Great Yarmouth North Denes SPA	Breeding seabird	637.3	604.9	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Dyfi Estuary / Aber Dyfi SPA	Non-breeding waterbird	611.2	573.7	Greater white-fronted goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Outer Thames Estuary SPA	Breeding seabird	650.8	618.4	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	650.8	618.4	Red-throated diver	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Breydon Water SPA	Breeding seabird	653.0	620.3	Common tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird	653.0	620.3	Avocet; Bewick's swan; Golden plover; Lapwing; Ruff; Black-tailed godwit*; Greater white-fronted goose*; Redshank*; Shoveler*; Snipe*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Non-breeding seabird	653.0	620.3	Cormorant*	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Breydon Water Ramsar	Non-breeding waterbird	653.0	620.3	Bewick's swan	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
	Breeding waterbird	653.0	620.3	Lapwing	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Minsmere-Walberswick SPA	Breeding seabird	680.7	647.8	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	680.7	647.8	Gadwall; Greater white-fronted goose; Shoveler	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Minsmere-Walberswick Ramsar	Breeding waterbird	680.7	647.8	Avocet; Bearded reedling; Bittern; Eurasian marsh harrier; Gadwall; Shoveler; Teal	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Severn Estuary SPA	Non-breeding waterbird	692.2	655.3	Bewick's swan; Dunlin; Gadwall; Greater white-fronted goose; Redshank; Shelduck	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Severn Estuary Ramsar	Non-breeding waterbird	692.2	655.3	Bewick's swan; Dunlin; Gadwall; Greater white-fronted goose; Redshank; Shelduck	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Alde-Ore Estuary SPA	Breeding seabird	696.0	662.7	Lesser black-backed gull; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	696.0	662.7	Avocet; Redshank; Ruff	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Alde-Ore Estuary Ramsar	Breeding seabird	696.0	662.7	Lesser black-backed gull	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	696.0	662.7	Avocet; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Deben Estuary SPA	Non-breeding waterbird	698.8	665.2	Avocet; Dark-bellied brent goose	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Deben Estuary Ramsar	Non-breeding waterbird	698.8	665.2	Dark-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Stour and Orwell Estuaries SPA	Non-breeding waterbird Non-breeding seabird	702.1	668.2	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover; Knot; Pintail; Redshank; Curlew*;; Gladwall*; Goldeneye*; Great crested grebe*; Lapwing*; Oystercatcher*; Ringed plover*; Shelduck*; Turnstone*; Wigeon* Cormorant*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								discounted in relation to all effects alone.			
Stour and Orwell Estuaries Ramsar	Non-breeding waterbird	702.1	668.2	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover; Knot; Pintail; Redshank; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Bae Caerfyrddin/ Carmarthen Bay SPA	Non-breeding waterbird	708.6	670.8	Common scoter	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Burry Inlet SPA	Non-breeding waterbird	711.7	674.1	Curlew; Dunlin; Grey plover; Knot; Oystercatcher; Pintail; Redshank; Shelduck; Shoveler; Teal; Turnstone; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Burry Inlet Ramsar	Non-breeding waterbird	711.7	674.1	Knot; Oystercatcher; Pintail; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter).	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA	Breeding seabird	714.9	676.1	Lesser black-backed gull; Puffin; Storm petrel; Guillemot*; Kittiwake*; Razorbill*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	714.9	676.1	Manx shearwater	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	
Hamford Water SPA	Breeding seabird	716.4	682.6	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	716.4	682.6	Avocet; Black-tailed godwit; Dark-bellied brent goose; Grey plover; Redshank; Ringed plover; Shelduck; Teal	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Hamford Water Ramsar	Non-breeding waterbird	716.4	682.6	Black-tailed godwit; Dark-bellied brent goose; Redshank; Ringed plover	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Abberton Reservoir SPA	Breeding seabird	717.1	682.8	Cormorant	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	717.1	682.8	Coot; Gadwall; Goldeneye; Great crested grebe; Mute swan; Pochard; Shoveler; Teal; Tufted duck; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Abberton Reservoir Ramsar	Non-breeding waterbird	717.1	682.8	Gadwall; Shoveler; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Colne Estuary (Mid-Essex Coast Phase 2) SPA	Breeding seabird	717.9	683.7	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding seabird Non-breeding waterbird	717.9	683.7	Cormorant* Dark-bellied brent goose; Redshank; Black-tailed godwit*; Curlew*; Dunlin*; Goldeneye*; Grey plover*; Mute swan*; Ringed plover*; Sanderling*; Shelduck*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Colne Estuary (Mid-Essex Coast Phase 2) Ramsar	Non-breeding waterbird	717.9	683.7	Dark-bellied brent goose; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	Breeding seabird	721.4	687.1	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird Non-breeding season	721.4	687.1	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover; Avocet*; Bar-tailed godwit*; Canada goose*; Curlew*; Golden plover*; Lapwing*; Mallard*; Oystercatcher*; Redshank*; Ringed plover*; Shelduck*; Teal*; Turnstone*; Wigeon* Cormorant*; Great black-backed gull*; Herring gull*; Black-headed gull*;	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar	Non-breeding waterbird	721.4	687.1	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Grassholm SPA	Breeding seabird	721.7	682.9	Gannet	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Dengie (Mid-Essex Coast Phase 1) Ramsar	Non-breeding waterbird	727.7	693.4	Dark-bellied brent goose; Grey plover; Knot	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Dengie (Mid-Essex Coast Phase 1) SPA	Non-breeding waterbird	727.7	693.4	Dark-bellied brent goose; Grey plover; Knot; Bar-tailed godwit*; Black-tailed godwit*; Dunlin*; Golden plover*; Lapwing*; Little egret*; Oystercatcher*; Red-throated diver*; Ringed plover*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar	Non-breeding waterbird	733.0	698.2	Dark-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA	Non-breeding waterbird	733.0	698.2	Dark-bellied brent goose; Avocet*; Black-tailed godwit*; Dunlin*; Golden plover*; Lapwing*; Little egret*; Redshank*; Shelduck*; Shoveler*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Foulness (Mid-Essex Coast Phase 5) SPA	Breeding seabird	740.2	706.0	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird	740.2	706.0	Bar-tailed godwit; Dark-bellied brent goose; Grey plover; Knot; Oystercatcher; Redshank; Avocet*; Curlew*; Dunlin*; Ringed plover*; Shelduck*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Foulness (Mid-Essex Coast Phase 5) Ramsar	Non-breeding waterbird	740.2	706.0	Bar-tailed godwit; Dark-bellied brent goose; Grey plover; Knot; Oystercatcher; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Benfleet and Southend Marshes SPA	Non-breeding waterbird Non-breeding seabird	744.0	709.2	Dark-bellied brent goose; Dunlin; Grey plover; Knot; Ringed plover; Avocet*; Bar-tailed godwit*;; Black-tailed godwit*; Canada goose*; Curlew*; Dunlin*; Golden plover*; Lapwing*; Mallard*; Oystercatcher*; Redshank*; Ringed plover*; Shelduck*; Teal*; Turnstone*; Wigeon*; Cormorant*; Great black-backed gull*; Herring gull*; Black-headed gull*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Benfleet and Southend Marshes Ramsar	Non-breeding waterbird	744.0	709.2	Grey plover; Knot; Dark-bellied brent goose	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Thames Estuary and Marshes SPA	Non-breeding waterbird	745.8	710.9	Avocet; Black-tailed godwit; Dunlin; Grey plover; Knot; Redshank; Ringed plover; Bewick's swan*; Gadwall*; Golden plover*; Pintail*; pochard*; Ruff*; Shelduck*; Shoveler*; Teal*; Tufted duck*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Thames Estuary and Marshes Ramsar	Non-breeding waterbird	745.8	710.9	Black-tailed godwit; Dunlin; Grey plover; Knot; Redshank; Ringed plover	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Medway Estuary and Marshes SPA	Breeding seabird	755.3	720.5	Little tern; Common tern*	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding waterbird	755.3	720.5	Avocet*; gadwall*; Lapwing*; Mallard*; mute swan*; Oystercatcher*; Pochard*; redshank*; Ringed plover*; Shelduck*; shoveler*; Teal*; tufted duck*	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Non-breeding waterbird	755.3	720.5	Avocet; Black-tailed godwit; Dark-bellied brent goose; Dunlin; Golden plover; Grey plover; Knot; Pintail; Pintail; Redshank; Redshank; Ringed plover; Shelduck; Teal; Curlew*; Great crested grebe*; Greenshank*; Oystercatcher*; Shoveler*; Teal*; Wigeon*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Medway Estuary and Marshes Ramsar	Non-breeding waterbird	755.3	720.5	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Dunlin; Grey plover; Knot; Pintail; Pintail; Redshank; Redshank; Ringed plover; Shelduck; Shelduck; Teal	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
The Swale SPA	Non-breeding waterbird Non-breeding seabird	762.3	727.6	Dark-bellied brent goose; Dunlin; Coot*; Gadwall*; Mute swan*; Pintail*; Pochard*; Shoveler*; Teal*; Tufted duck*; Wigeon* Cormorant*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
	Breeding waterbird	762.3	727.6	Coot*; Lapwing*; Mallard*; Moorhen*; Redshank*; Reed bunting*; Reed warbler*; Shelduck*	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
The Swale Ramsar	Non-breeding waterbird	762.3	727.6	Dark-bellied brent goose; Grey plover; Redshank	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Thanet Coast and Sandwich Bay SPA	Breeding seabird	771.0	736.6	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	771.0	736.6	Golden plover; Turnstone	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Thanet Coast and Sandwich Bay Ramsar	Non-breeding waterbird	771.0	736.6	Turnstone	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Stodmarsh SPA	Non-breeding waterbird	779.0	744.7	Bittern; Gadwall; Shoveler	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Stodmarsh Ramsar	Non-breeding waterbird	779.0	744.7	Bittern; Gadwall; Shoveler	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding waterbird	779.0	744.7	Gadwall	-	-	-	Breeding waterbird features from this SPA do not have connectivity with the array during the breeding season. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Solent and Southampton Water SPA	Breeding seabird	788.0	751.6	Common tern; Little tern; Roseate tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	788.0	751.6	Black-tailed godwit; Dark-bellied brent goose; Ringed plover; Teal	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Solent and Southampton Water Ramsar	Non-breeding waterbird	788.0	751.6	Black-tailed godwit; Dark-bellied brent goose; Ringed plover; Teal	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Solent and Dorset Coast SPA	Breeding seabird	788.8	752.4	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Portsmouth Harbour SPA	Non-breeding waterbird	799.3	763.1	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Red-breasted merganser	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Portsmouth Harbour Ramsar	Non-breeding waterbird	799.3	763.1	Dark-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Chichester and Langstone Harbours SPA	Breeding seabird	801.3	765.1	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
	Non-breeding waterbird	801.3	765.1	Bar-tailed godwit; Curlew; Dark-bellied brent goose; Dunlin; Grey plover; Pintail; Red-breasted merganser; Redshank; Ringed plover; Sanderling; Shelduck; Shoveler; Teal; Turnstone; Wigeon	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Chichester and Langstone Harbours Ramsar	Non-breeding waterbird	801.3	765.1	Black-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover; Redshank; Ringed plover; Shelduck	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Dungeness, Romney Marsh and Rye Bay SPA	Breeding seabird	804.7	770.1	Common tern; Little tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird Non-breeding seabird	804.7	770.1	Bewick's swan; Bittern; Golden plover; Ruff; Shoveler; Aquatic warbler*; Common sandpiper*; Coot*; Gadwall*; Great crested grebe*; Greater white-fronted goose*; Lapwing*; Little grebe*; Pochard*; Sanderling*; Whimbrel*; Wigeon* Cormorant*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Dungeness, Romney Marsh and Rye Bay Ramsar	Non-breeding waterbird	804.7	770.1	Aquatic warbler; Mute swan; Shoveler	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Poole Harbour SPA	Breeding seabird	808.6	771.8	Common tern; Sandwich tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	808.6	771.8	Avocet; Black-tailed godwit; Little egret; Shelduck; Spoonbill; Curlew*; Dark-bellied brent goose*; Dunlin*; Goldeneye*; Greenshank*; Pochard*; Red-breasted merganser*; Redshank*; Teal*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
	Non-breeding seabird Non-breeding waterbird	809.1	773.0	Cormorant Dark-bellied brent goose; Ruff	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Poole Harbour Ramsar	Breeding seabird	808.6	771.8	Common tern; Mediterranean gull	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	808.6	771.8	Avocet; Black-tailed godwit; Shelduck	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be	No	Out	

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								discounted in relation to all effects alone.			
Pagham Harbour SPA	Breeding seabird	809.1	773.0	Common tern; Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	809.1	773.0	Dark-bellied brent goose; Ruff	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	
Pagham Harbour Ramsar	Non-breeding waterbird	809.1	773.0	Dark-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Exe Estuary SPA	Non-breeding waterbird Non-breeding seabird	815.4	778.1	Avocet; Black-tailed godwit; Dark-bellied brent goose; Dunlin; Grey plover; Oystercatcher; Slavonian grebe; Common tern*; Great northern diver*; Grey plover*; Peregrine falcon*; Red-throated diver*; Ringed plover*; Wigeon* Little tern*; Sandwich tern*	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
Exe Estuary Ramsar	Non-breeding waterbird	815.4	778.1	Dark-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
Chesil Beach and The Fleet SPA	Breeding seabird	816.8	779.8	Little tern	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Non-breeding waterbird	816.8	779.8	Wigeon	-	-	-	This non-breeding feature is unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.	No	Out	
Chesil Beach and The Fleet Ramsar	Non-breeding waterbird	816.8	779.8	Dark-bellied brent goose	-	-	-	This non-breeding feature does not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Tamar Estuaries Complex SPA	Non-breeding waterbird	845.6	808.3	Avocet; Little egret	-	-	-	These non-breeding features do not have non-breeding season connectivity with Caledonia due to their migratory pathway and therefore, LSE cannot be discounted in relation to all effects alone.	No	Out	Out
Falmouth Bay to St Austell Bay SPA	Non-breeding waterbird	863.9	826.1	Black-throated diver; Great northern diver; Slavonian grebe	-	-	-	These non-breeding features are unlikely to have non-breeding season connectivity with Caledonia due to their migratory path or proximity to the array. The impact from negligible numbers that do migrate through the array would only do so on two occasions per year and these species tend to show high avoidance of	No	Out	Out

Designated Site	Breeding / Non-breeding	Distance to Array (km)	Distance to Offshore ECC (km)	Feature(s) to Consider for Assessment of No LSE	Potential Effects (if Screened In)			Assessment of No LSE	Likely Pathway	Feature Screened In/ Out	Designated Site Screened In/Out
					Construction	Operation and Maintenance	Decommissioning				
								offshore wind farms. Therefore, the impact is considerably less than for species that come into contact with wind farms daily (e.g., central place foragers during the breeding season) with migratory species consequently being less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are trivial (Masden *et al.*, 2009 – common eider; Speakman *et al.*, 2009 – red-throated diver, whooper swan, common scoter). Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects have been apportioned to all SPAs and any potential barrier impacts will be trivial. Therefore, LSE can be discounted in relation to all effects alone.			
Isles of Scilly SPA	Breeding seabird	927.1	888.1	Great black-backed gull; Lesser black-backed gull; Shag; Storm petrel; Common tern*; Cormorant*; Guillemot*; Lesser black-backed gull*; Puffin*; Razorbill*;	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out
	Breeding seabird	927.1	888.1	Fulmar*; Manx shearwater	-	-	-	This SPA is located on the west coast of the UK. It is unlikely to resolve in meaningful connectivity with the array due to the distance required to travel around land. LSE can therefore be discounted.	No	Out	
Isles of Scilly Ramsar	Breeding seabird	927.1	888.1	Lesser black-backed gull; Storm petrel	-	-	-	The Array Area has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward *et al.*, 2019). Therefore, LSE can be discounted in relation to all effects alone.	No	Out	Out

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