OSSIAN OFFSHORE WIND FARM: TRANSMISSION INFRASTRUCTURE

EIA SCOPING REPORT: PART 4 (OF 5)

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Ossian Transmission Infrastructure
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8. ASSESSMENT OF EFFECTS – OFFSHORE AND ONSHORE ENVIRONMENT

8.1. Introduction

8.1.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for those topics that consider both the onshore and offshore elements of the Ossian Transmission Infrastructure.

8.1.1.2 The proposed scope of the assessment has been structured to allow the reader to distinguish between information relevant to specific jurisdictions. Where appropriate and relevant, the baseline environment, designated sites, proposed data sources, relevant guidance, potential impacts and consultation sections are split as follows.

- General – information that applies the topic specific study area (i.e. both English and Scottish jurisdictions) and is therefore applicable to both the application for a DCO to be made to the Planning Inspectorate and the application for a Marine Licence to be made to MD-LOT.
- English jurisdiction – information which is specific to the topic specific study area located within English jurisdiction and is therefore applicable to the application for a DCO to be made to the Planning Inspectorate. This included the Onshore Transmission Infrastructure, Landfall and EOfTI.
- Scottish jurisdiction/waters – information which is specific to the portion of the topic specific study area located within Scottish waters and is therefore applicable to the application for a Marine Licence to be made to MD-LOT.

8.2. Socio-economics

8.2.1 Introduction

8.2.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for socio-economic receptors of relevance to the Ossian Transmission Infrastructure and considers the potential impacts from the construction, operation and maintenance and decommissioning phases.

8.2.1.2 The socio-economic assessment will be informed by the conclusions of other assessments within the EIA process and by the conclusions of the assessment for the Ossian Array. Impacts in relation to agricultural land holdings are considered in **section 7.7** of this EIA Scoping Report. Impacts on human health are set out in **section 7.12** of this EIA Scoping Report.

8.2.1.3 This section has been prepared by BiGGAR Economics Ltd.

8.2.2 Proposed Study Area for the Assessment

General (Applicable to the DCO and the Marine Licence)

UK Economy

8.2.2.1 The socio-economic assessment will be undertaken at the level of the UK economy. As part of the Ossian Transmission Infrastructure is in Scottish waters, consideration will be given to the proportion of UK impacts that will affect the Scottish economy.

English Jurisdiction (Applicable to the DCO)

Tourism Economy

8.2.2.2 For potential impacts on the tourism economy, a smaller local study area is more appropriate. This has been defined in line with the guidance on identification of 'local areas' for offshore developments published by Marine Scotland (Marine Scotland, 2022). Although this guidance does not apply in England (and equivalent English guidance is not available), the principles for identifying the areas are universal. This guidance identifies six principles for identifying local study areas for offshore development.

- Principle 1 (Dual Geographies): The local area for the supply chain and investment impacts should be separate from the local area(s) for wider socio-economic impacts, including tourism and recreation.
- Principle 2 (Appropriate Impacts): The appropriate impacts to be considered for assessments should be identified before defining the local areas.
- Principle 3 (Epicentres): The local areas should include all the epicentres of the appropriate impacts.
- Principle 4 (Accountability): The local areas used in the assessment should comprise pre-existing economic or political geographies (community councils, local authorities, development agencies) to enhance accountability.
- Principle 5 (Understandable): The local areas should be defined in such a way that they are understandable to the communities they describe.
- Principle 6 (Connected Geography): The local area for the supply chain and investment impacts should consist of connected (including coastal) pre-existing economic or political geographies.

8.2.2.3 On the basis of these principles, the tourism assessment will focus on the local administrative areas that contain the Landfall and Onshore Transmission Infrastructure and could experience effects that could impact visitor behaviour. At the scoping stage, the local authority areas that have been defined as the tourism study area are:

- East Lindsey;
- Boston; and
- South Holland.

8.2.2.4 The tourism study area is shown on **Figure 8.2.1**.

8.2.3 Baseline Environment

8.2.3.1 An outline of the baseline environment relevant to the socio-economics assessment, taking into account the extent of the Ossian Transmission Infrastructure Scoping Boundary and based upon an initial review, is provided below. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 8.2.1**.

8.2.3.2 This baseline environment section is split into the following subsections to allow the reader to distinguish between information relevant to specific jurisdictions.

- General – this subsection summarises baseline environment information across the entire UK Economy study area (within which the effects of the Ossian Transmission Infrastructure will be assessed, including the SOfTI). This is therefore applicable to the application for a DCO to be made to the Planning Inspectorate and the application for a Marine Licence to be made to MD-LOT.
- English jurisdiction. The Tourism Economy subsection summarises baseline environment information which is specific to the tourism economy study area in England (which includes the Landfall and Onshore Transmission Infrastructure). This is therefore applicable to the application for a DCO to be made to the Planning Inspectorate.

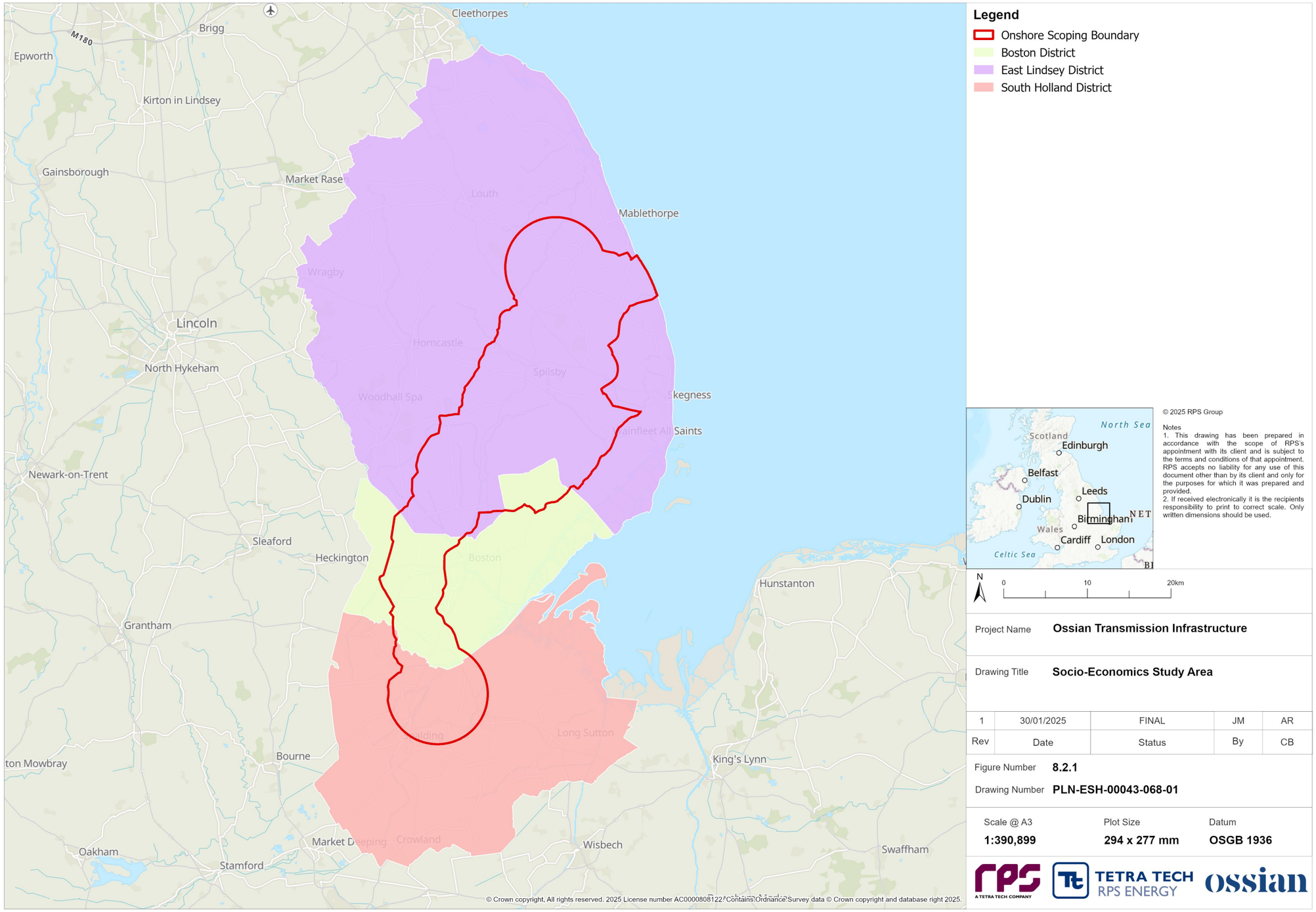

Figure 8.2.1: Tourism Economy Study Area

Existing and Future Baseline Conditions - General

Socio-economics Overview

8.2.3.3 While the total population for the UK is projected to increase 6% from 2023 to 2043, the share of the working age population is expected to decrease from 63% to 59% in the same period. As the structure of the economy changes over time, the UK will require employment opportunities to be created in those sectors that can drive productivity growth, providing the basis for economic growth and generating the levels of prosperity required to meet the needs of an ageing population. The offshore renewables sector represents an opportunity of substantial scale for the UK economy.

8.2.3.4 The socio-economics assessment will outline current population structures, population projections, economic activity, industrial structures, and levels of education. This will focus on the UK, noting also the baseline position for Scotland. This will provide the context for the current and potential future economic impact of the offshore wind sector and how the Ossian Transmission Infrastructure is expected to contribute. The UK offshore wind industry currently employs 32,000 people and this is expected to increase to over 100,000 by 2030 (RenewableUK, Offshore Wind Industry Council, The Crown Estate and Crown Estate Scotland, 2024).

Strategic Overview

8.2.3.5 The socio-economics assessment will take into account the documents set out below in order to consider the future baseline.

8.2.3.6 **Invest 2035: The UK's Modern Industrial Strategy**. The UK Government's modern industrial strategy (UK Government, 2024a) is a 10-year plan designed to provide businesses with the certainty and stability needed to drive economic growth. It focuses on addressing barriers to investment in the highest-potential growth sectors and regions, creating the right conditions for increased investment, high-quality employment, and tangible benefits for communities across the country. A key part of this strategy is the clean energy sector, one of the eight identified growth-driving industries. To fully unlock the potential of the renewable energy sector, more must be done to build resilient supply chains and strengthen the UK's manufacturing base. This will ensure the creation of high-quality jobs and long-term economic benefits.

8.2.3.7 **Plan for Change and Make Britain a Clean Energy Superpower**. The Plan for Change, Milestones for Mission-Led Government sets out the UK (UK Government, 2024b) Government's milestones to deliver transformative change by the end of this Parliament. Focused on six key missions, the plan prioritises economic growth, energy security, and improving the lives of working people.

8.2.3.8 Supporting and emphasising the role of the renewable energy sector in delivering change, growth, and good jobs, Make Britain a Clean Energy Superpower (UK Government, 2024c) sets out milestones for the UK Government's mission to deliver clean, secure, and affordable power while building a resilient economy and protecting future generations. The UK Government considers becoming a clean energy superpower to be both an economic opportunity and an environmental necessity.

8.2.3.9 **Clean Power by 2030, Action Plan: a new era of clean electricity**. The Clean Power 2030 Action Plan (UK Government, 2024d) addresses three major challenges: securing affordable energy, creating thousands of skilled jobs through new energy industries, and reducing greenhouse gas emissions. This builds on the milestones set out in the Plan for Change, focusing on building strong domestic supply chains, upskilling workers, and preparing the energy system for rising demand as the UK transitions to a net-zero economy by 2050.

8.2.3.10 **UK Government Offshore Wind Sector Deal**. The Offshore Wind Sector Deal (UK Government, 2020), emphasises how UK companies can benefit from the opportunities presented by the expansion of offshore wind, enhancing the international competitiveness of UK firms and sustaining the UK's role as a global leader in offshore wind generation.

8.2.3.11 **Offshore Wind Net Zero Investment Roadmap**. The Offshore Wind Net Zero Investment Roadmap (UK Government, 2023) outlined the then UK Government's ambitions for the sector to play a key role in decarbonising the UK's power system by 2035 and achieving net-zero by 2050. The Roadmap highlighted the significant potential for growth in investment in the sector, which has the potential to generate growth in the UK economy and support the delivery of good quality jobs.

8.2.3.12 **Regional and Local Policies**. It is also important that the assessment takes account of the relevant local and regional economic development and tourism policy objectives. This will include economic development and tourism strategic for Lincolnshire and for the local authority areas in the tourism study area. These will include the Strategic Economic Plan for Lincolnshire (Greater Lincolnshire LEP, 2014).

Existing and Future Baseline Conditions – English Jurisdiction

Tourism Overview (Tourism Economy)

8.2.3.13 The tourism study area has a population of approximately 312,000, accounting for 40% of the total population in Lincolnshire (ONS, 2024c). Of the 113,200 people in employment in the tourism study area, 14% work in tourism-related industries, including accommodation and food services; and arts, entertainment and recreation, which is higher than tourism-related employment in Lincolnshire (11%) and the UK (11%) (ONS, 2024b).

8.2.3.14 The tourism baseline for the socio-economics assessment will outline the scale of the tourism economy and identify key attractions in the tourism study area. This will include an overview of visitor numbers and their spend and key visitor attractions within the tourism study area.

8.2.4 Proposed Data Sources

Desk Studies

8.2.4.1 The data sources that will be used to inform the proposed scope of the socio-economics assessment are presented within **Table 8.2.1**. These data sources will be taken forward and used to inform the EIA process. The sources listed are the latest available data at the time of preparing this EIA Scoping Report, although the latest data available at the time when the socio-economic assessment is undertaken will be consulted and updated.

Table 8.2.1: Data Sources for Socio-economic Baseline

Source, Author and Year	Summary	Coverage of Study Areas
Socio-economics (Applicable to both English and Scottish Jurisdiction)		
Census and NOMIS labour statistics.	Labour market and Census data	Covers the UK as a whole
Office for National Statistics (ONS) (2020), Principal Populations 2018-Based.	Population projections for the UK as a whole, broken down by age.	Covers the UK as a whole.
ONS (2024a) Annual Survey of Hours and Earnings 2023.	Provides average and median residential and workplace earning.	Covers the UK and local authority areas.
ONS (2024b), Business Register and Employment Survey 2022 and 2023.	Provides a breakdown of employment by sector.	Covers the UK, local authority areas and electoral wards.
ONS (2024c), Annual Population Survey 2023.	Provides statistics on characteristics of populations, including economic activity rate and unemployment rate.	Covers the UK and local authority areas.
Marine Scotland (2022), Defining Local Areas for Assessing the Impact of Offshore Renewable and Other Marine Developments: Guidance Principles.	Provides a guidance on defining local areas for assessing the impact of offshore renewables.	Scottish publication but can be applied to local areas anywhere.
Offshore Renewable Energy Catapult (2020), The Offshore Wind O&M Opportunity.	Discusses the potential opportunities in offshore wind by 2030, with a detailed breakdown of annual spending and associated opportunities in the UK.	Considers opportunities in the UK.
UK Government (2020), The Offshore Wind Sector Deal	Sets out the economic opportunities associated with offshore wind, including UK Government targets on the share of UK content.	Applies to the UK.
Offshore Wind Industry Council, Offshore Wind Skills Intelligence Report (2023).	Current skills and future workforce requirements for offshore wind.	Applies to the UK.
Offshore Wind Industry Council, People Skills Survey 2021 – 2026 (2021).	Available skills to fulfil offshore wind contracts.	Applies to the UK.
Offshore Wind Industry Council, Collaborating for Growth: Strategies for Expanding the UK Offshore Wind Supply Chain (2020).	Approaches to maximising opportunities from the offshore wind supply chain.	Applies to the UK.
Oxford Brookes University, Guidance on assessing the socio-economic impacts of offshore wind farms (2020).	Guidance on the socio-economic impacts from offshore wind farms.	Applies to the UK.
ORE Catapult, Offshore Wind Operations and Maintenance a £9 billion per year opportunity by 2030 for the UK to seize (2020).	Evidence on operations and maintenance contracts and opportunities from them.	Applies to the UK.
RenewableUK, Offshore Wind Industry Council, The Crown Estate and Crown Estate Scotland (2024), 2024 Offshore Wind Industrial Growth Plan.	Provides statistics on the current UK offshore wind sector and its potential future development.	Applies to the UK
BVG Associates, Guide to an Offshore Wind Farm (2019).	Data on offshore wind supply chain.	Applies to the UK.
Tourism (Applicable to English Jurisdiction)		
VisitBritain (2024a), GB Domestic Day Visits 2023.	Annual publication of domestic day visits by number and value.	Covers the UK, Nations and Regions.

Source, Author and Year	Summary	Coverage of Study Areas
VisitBritain (2024b), GB Tourism Survey 2023.	Annual publication of domestic overnight tourism visits and nights by number, value and purpose.	Covers the UK, Nations and Regions.
VisitBritain (2024c), International Passenger Survey 2023.	Annual publication of international overnight tourism visits and nights by number, value and purpose.	Covers the UK, Nations and Regions.
BiGGAR Economics, East Anglia One North and East Anglia Two Offshore Wind Farms: Tourism Impact Review (2019).	Study of the impact on tourism of two offshore wind farms near the Suffolk Coast Area.	Applies to the UK.
Online Searches.	Identification of tourism and recreational assets within the tourism study area.	Tourism study area.

8.2.4.2 A more detailed literature review will be developed for the ES, building upon the high-level outline provided within this EIA Scoping Report. This may include additional and updated data published by the ONS, which is expected to be published before the publication of the ES.

Site-specific Surveys

8.2.4.3 No site-specific surveys are considered necessary.

8.2.5 Mitigation Measures

8.2.5.1 At this stage, the following measures are proposed to be adopted. These measures, which are set out in the Supply Chain Development Statement (SCDS) that informed the Array Application (OWFL, 2023), may evolve (and be further refined) as the design and EIA process progresses.

- Deliver up to 3,528 MW of offshore wind energy.
- Aim to achieve a minimum of 62% UK content.

8.2.5.2 The SCDS commitments will inform the assessment of the potential socio-economic impacts since these will be quantified based on the proportion of UK content (that is the proportion of project expenditure that is expected to be retained within the UK economy).

8.2.5.3 In addition, there are a number of other proposed mitigation measures that are likely to minimise disruption and could be relevant to some of the socio-economic impacts scoped in (for example, changes to visitor behaviour). These include the following.

- The commitment to consider trenchless techniques, such as HDD, for the installation of the Landfall and Onshore Export Cables, where practicable, to reduce impacts to land use and recreation receptors. For example, the utilisation of trenchless techniques at the Landfall to avoid potential impacts on access to the public beach and proposed National Trail, King Charles III England Coast Path Route - Skegness to Mablethorpe will be considered.
- Construction of the Landfall and Onshore Transmission Infrastructure would be managed through a CoCP, which will set out the principles of good environmental management to be followed, including in relation to noise and dust. An Outline CoCP will be submitted as part of the application for development consent.
- CTMP: the movement of construction vehicles entering or exiting construction sites and utilising the local highway network would be controlled through a CTMP. This would seek to reduce disruption to access for tourism/businesses. An Outline CTMP will be submitted as part of the application for development consent.
- PRoW Management Plan, which will include measures to minimise disruption to the affected PRoW network during construction. For example, these measures may include requirements for managed crossings, temporary or permanent diversions and measures to ensure the safety of PRoW users during the construction phase. An Outline PRoW Management Plan will be submitted as part of the application for development consent.

8.2.5.4 With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan and the Offshore Decommissioning Programme.

8.2.6 Proposed Scope of the Assessment

8.2.6.1 Potential impacts that are proposed to be scoped in into the assessment for socio-economics are set out in **Table 8.2.2**.

8.2.7 Impacts Proposed to be Scoped Out

8.2.7.1 Impacts that are proposed to be scoped out of the assessment for socio-economics and the justification are set out in **Table 8.2.3**.

Table 8.2.2: Potential Impacts Proposed to be Scoped in for Socio-economics

Impact	Project Phase			Relevant to England or Scotland		Description	Proposed Approach to Assessment
	C	O	D	England	Scotland		
Increase in employment and Gross Value Added (GVA).	✓	✓	✓	✓	✓	The construction of the Ossian Transmission Infrastructure will require expenditure with companies in each of the study areas. This will support employment and generate GVA, including impacts associated with spending in the wider supply chain (indirect effects) and spending by staff (induced effects). Operation and maintenance will require expenditure with companies and organisations in each of the study areas, supporting employment and generating GVA. Decommissioning will require expenditure with companies and organisations in each of the study areas, supporting employment and generating GVA.	Assess the economic impact in socio-economic study areas, with consideration of the relative size and industrial baseline in each.
Changes to visitor behaviour.	✓	✓	✓	✓	×	Construction and decommissioning: Potential changes to visitor behaviour may arise if construction or decommissioning activities disrupt the operations of or access to tourism assets. The assessment will consider the potential for disruptions to tourism activity. Operation and maintenance: Potential changes to visitor behaviour may arise from changes to the appeal of tourism assets (e.g. related to the visibility of the Onshore Converter Stations from tourist attractions). The assessment will consider whether the Onshore Converter Stations could change the nature of the attraction of tourism assets	Assess the potential impacts on tourism assets, with a focus on whether this will lead to changes in visitor behaviour.
Changes to commercial fisheries.	✓	×	✓	✓	✓	If construction or decommissioning causes disruption to commercial fishing, this may lead to reduced economic activity in the supply chain and processing sector supported by commercial fisheries.	Assess the relationship between topic-specific effects and socio-economic effects.
Changes to shipping and marine recreation.	✓	×	✓	✓	✓	Changes to economic activity as a result of the construction or decommissioning may impact activity in the shipping and marine recreation sectors.	Assess the relationship between topic-specific effects and socio-economic effects.

Table 8.2.3: Impacts Proposed to be Scoped Out of the Assessment for Socio-economics

Impact	Relevant to England or Scotland		Justification
	England	Scotland	
Construction, Operation and Maintenance and Decommissioning			
Demographic changes.	✓	✓	Demographic changes are only likely to occur if the economic impacts are sufficiently large to noticeably affect economic and social conditions. Economic effects arising from this impact are unlikely to be significant at a UK level and are not expected to be geographically concentrated in local areas. This impact has therefore been scoped out of the assessment.
Changes to housing demand.	✓	N/A	Changes to housing demand are only likely to occur if the economic impacts are sufficiently large to noticeably affect economic and social conditions. Economic effects arising from this impact are unlikely to be significant at a UK level and are not expected to be geographically concentrated in local areas. This impact has therefore been scoped out of the assessment.
Changes to other local public and private services.	✓	✓	Changes to local public and private services are only likely to occur if the economic impacts are sufficiently large to noticeably affect economic and social conditions. Economic effects arising from this impact are unlikely to be significant at a UK level and are not expected to be geographical concentrated in local areas. This impact has therefore been scoped out of the assessment.
Socio-cultural impacts.	✓	✓	Changes to socio-cultural features are only likely to occur if the economic impacts are sufficiently large to noticeably affect economic and social conditions. The economic effects arising from this impact are unlikely to be significant at a UK level and are not expected to be geographical concentrated in local areas. This impact has therefore been scoped out of the assessment.
Operation and Maintenance			
Changes to commercial fisheries.	✓	✓	During operation and maintenance, it is unlikely that the presence of underwater Offshore Export Cables will disrupt commercial fisheries. This impact has therefore been scoped out of the assessment.
Changes to shipping and marine recreation.	✓	✓	During operation and maintenance, it is unlikely that the presence of underwater Offshore Export Cables will disrupt shipping or marine recreation. This impact has therefore been scoped out of the assessment.

8.2.8 Proposed Assessment Methodology

8.2.8.1 The assessment methodology proposed to be used for the impacts scoped into the assessment, as set out in **Table 8.2.2**, is described below. The methodology will build on the assessment undertaken for the Ossian Array and the overall methodology will align with that used for the Ossian Array, where appropriate.

Legislation and Policy

8.2.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

8.2.8.3 The assessment of socio-economic receptors will also comply with the following guidance documents where they are specific to this topic.

- General:
  - HM Treasury (2022), Green Book: Appraisal and Evaluation in Central Government.
- Scottish Waters:
  - Marine Scotland (2022) Defining 'Local Areas' for assessing impacts of offshore renewables and other marine developments: Guidance Principles.

Assessment of Effects

Economic Impacts (UK Economy) - General

8.2.8.4 The economic impacts of the Ossian Transmission Infrastructure on employment and GVA have been considered at a high level as part of the cumulative assessment in the Ossian Array EIA Report (Ossian OWFL, 2024). The assessment for the EIA for the Ossian Transmission Infrastructure will draw on the findings of this previous analysis, will build on this and will adopt a similar method.

8.2.8.5 To assess the economic impacts of the Ossian Transmission Infrastructure, the focus will be on the direct and indirect (supply chain) effects, in line with the UK Offshore Wind Sector Deal (UK Government, 2020). In addition to this, the assessment will consider the impacts of staff spending and the economic impact that this subsequent increase in demand stimulates (the induced impact).

8.2.8.6 Economic impacts will be reported in terms of the following.

- GVA: a measure of economic value added by an organisation, industry or region typically estimated by subtracting the non-staff operational costs from the turnover of an organisation.
- Years of Employment: this is a measure of employment which is equivalent to one person being employed for a year and is typically used when considering short to medium term employment impacts, such as those associated with construction.
- Jobs: this is a measure of employment which considers the headcount employment in an organisation or industry. This measure is used when considering long-term impacts, such as jobs supported during operation and maintenance.

8.2.8.7 The socio-economic assessment will consider the lowest, realistic levels of expenditure associated with the Ossian Transmission Infrastructure, since that would represent the 'worst case' scenario in terms of the expected beneficial socio-economic effects. This will take account of the 'Commitment' scenario in the SCDS initially submitted as part of the ScotWind leasing process in 2021 and updated in 2023 (Ossian OWFL, 2023). Although the SCDS supports the Crown Estate Scotland leasing process that applies to the Array, it includes estimates of UK supply chain content and so is relevant to this socio-economic assessment.

8.2.8.8 The assessment will account for deadweight, leakage, displacement and substitution. Sensitivity analysis will also be undertaken to account for risk, uncertainty and optimism bias, where they could have implications for the economic impacts.

8.2.8.9 The Ossian Transmission Infrastructure includes the construction and installation of Offshore Export Cables from the Ossian Array to Landfall, the Landfall, HVDC Onshore Export Cables, Onshore Converter Stations and HVAC Onshore Export Cables. The assessment will consider three phases:

- construction;
- operation and maintenance; and
- decommissioning.

8.2.8.10 The impacts during the construction phase will be based on planned expenditure associated with this phase. In addition to the total impact over the period, the assessment will also consider the timings of impacts during this phase to understand the peaks and troughs of this activity.

8.2.8.11 The impacts during the operation and maintenance phase for the Ossian Transmission Infrastructure will be based on projected operational (including maintenance) expenditure.

8.2.8.12 In instances where impacts are expected to occur over several years or in the more distant future, such as the operation and maintenance and decommissioning phases, a discount rate will be applied. This allows impacts that occur sooner to be valued more highly than impacts that occur further into the future, a concept known as time preference. In this instance, a discount rate of 3.5% will be chosen, in line with the UK Government's Green Book (UK Government, 2022). On this basis, it is expected that the decommissioning phase impacts will be valued substantially lower than those during the construction phase.

8.2.8.13 The quantified economic impacts will be assessed by considering the sensitivity of the economy and the magnitude of impact to determine the significance of effect, as described in **section 5.5** of this EIA Scoping Report.

8.2.8.14 To consider the sensitivity of an economy, it is necessary to consider resilience and agility. This will be done by taking a number of factors into account, including the scale of the economy, the diversity of sectors in the economy, the level of economic activity, the level of skills and education, and the level of economic potential from utilising capital (natural, human, social, economic). These factors will be taken into account when describing sensitivity as very high, high, medium, low or negligible.

8.2.8.15 The magnitude of economic impacts will be assessed by considering how the economic impacts quantified compare to the typical economic growth and employment rates. On this basis, magnitude will be described as high, medium, low, negligible or no change. For example, an economic impact that was equal to or greater than the long-term trend economic growth rate would be considered to be of high magnitude of impact.

8.2.8.16 The assessment of effects will present the following:

- the effects of the Ossian Transmission Infrastructure as a whole (including the SOfTI);
- the effects of the EOfTI, Landfall and Onshore Transmission Infrastructure (to inform the application for development consent to be made to the Planning Inspectorate); and
- the effects of the SOfTI (to inform the application for a Marine License to be made to MD-LOT).

Tourism Economy – English Jurisdiction

8.2.8.17 Visitor attractions and assets will be identified with the tourism study area. The sensitivity of each asset will be determined by the contribution that it makes to the overall tourism economy of the area.

8.2.8.18 The key features associated with a visitor attraction or asset will also be considered, together with whether the Landfall and Onshore Transmission Infrastructure could have an impact on these key features, which could lead to a change in visitor behaviour. This will consider the magnitude of impacts considered in other EIA topic chapters, such as visual, traffic or noise, and the sensitivity of each asset to such impacts.

8.2.8.19 The effect on each tourism asset will then be determined based on the sensitivity of the receptor and magnitude of each impact, based on the methodology outlined in **section 5.5** of this EIA Scoping Report.

Cumulative Effects and Inter-related Effects

8.2.8.20 The CEA for socio-economics will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. This assessment will include consideration of cumulative effects of the Ossian Transmission Infrastructure with the Ossian Array. The socio-economics chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including project lifetime and receptor-led effects in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

8.2.8.21 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on socio-economics are screened out from the EIA process.

Relevant Consultation

8.2.8.1 The Applicant has undertaken introductory consultation with statutory consultees through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken as required throughout the PEIR and ES phases.

8.2.9 Next Steps

8.2.9.1 The following are proposed as next steps in relation to socio-economics.

- Agreement of the identified data sources and guidance documents for the baseline characterisation and assessment of effects.
- Agreement as to whether all receptors and impacts have been identified for socio-economics.
- Confirmation of scope of, and approach to, the assessment.

8.2.9.2 Consultees are invited to respond on the proposed approach to these matters set out in this EIA Scoping Report.

8.3. Climate Change

8.3.1 Introduction

8.3.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for climate change from construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure. The climate change assessment will be informed by the conclusions of the assessment for the Ossian Array.

8.3.1.2 The following aspects of climate change are relevant to the assessment, in accordance with the IEMA guidance Environmental Impact Assessment Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022) and the Environmental Impact Assessment Guide to Climate Change Resilience and Adaptation (IEMA, 2020).

- **Greenhouse gas emissions**: The emission of greenhouse gases (GHGs) contributing to climate change, including GHG emissions from land use (i.e. green carbon) and seabed use change (i.e. blue carbon), and construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure.

- **Climate Change Risk Assessment (CCRA)**: The potential risks to the Ossian Transmission Infrastructure from a changing climate and their vulnerability to climate change.

8.3.1.3 The CCRA will be informed by discussions with the authors of all other EIA topics to identify potential changes in environmental conditions as a result of climate change. It is noted that impacts in relation to flood risk (including an allowance for climate change) are set out in **section 7.3** of this EIA Scoping Report.

8.3.2 Proposed Study Area for the Assessment

GHG Emissions

8.3.2.1 GHG emissions have a global (international) impact rather than directly affecting any specific local receptor. The assessment will therefore focus on the impact of GHG emissions on the global climate and therefore will be applicable to both English and Scottish jurisdiction. This will be expressed in the form of the atmospheric concentration of the relevant GHGs, expressed in carbon dioxide-equivalents (CO_2e).

8.3.2.2 The GHG emissions will be assessed on a life-cycle basis for activities required for the construction, operation and maintenance, and decommissioning of the Ossian Transmission Infrastructure. This will consider GHG emissions caused directly and indirectly from a variety sources, including on-site activities and the associated supply chain.

8.3.2.3 In addition, as the purpose of the Ossian Transmission Infrastructure is to connect the Array to the National Grid electricity transmission system, the cumulative effects with the Array (which is subject to a separate application) will be considered, including the avoided or 'saved' baseline GHG emissions. This will account for energy generated from the Array in comparison to alternative grid-connected electricity generators and will build on the work undertaken for the Array Application.

8.3.2.4 The study area for the GHG assessment is therefore defined in terms of an assessment boundary rather than a specified geographic area. The assessment boundary and relevant sources of GHG emissions are set out in **Table 8.3.2** below.

Climate Change Risk and Resilience

8.3.2.5 The study area for the CCRA at this stage encompasses the Ossian Transmission Infrastructure Scoping Boundary, as shown on **Figure 1.3.1** and is therefore applicable to both English and Scottish jurisdiction.

8.3.2.6 The CCRA for the Landfall and Onshore Transmission Infrastructure will cover the 25 km grid cells within which the Onshore Transmission Infrastructure is located, based on the UK Climate Projections 2018 (UKCP18) probabilistic projections (Met Office Hadley Centre (MOHC), 2024).

8.3.2.7 The CCRA for the Offshore Transmission Infrastructure will cover the footprint of the Offshore Transmission Infrastructure, in the context of the wider climate patterns in the central North Sea and east of England coastline, based on the UK Offshore Energy Strategic Environmental Assessment (Department for Business, Energy and Industrial Strategy (BEIS), 2022).

8.3.3 Baseline Environment

8.3.3.1 An outline of the baseline environment for climate change based upon an initial review of the Ossian Transmission Infrastructure Scoping Boundary, is provided below. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 8.3.1**.

8.3.3.2 From an initial review, the offshore GHG baseline environment is predominantly seabed sediment habitats. The GHG baseline environment relating to the Landfall and Onshore Transmission Infrastructure encompasses a wide variety of habitats, including agricultural land, woodland, built up areas and hardstanding (i.e. roads). Natural England mapping indicates that there may be an area of peaty soils within the Onshore Scoping Boundary.

8.3.3.3 A more detailed GHG baseline environment will be established once the Ossian Transmission Infrastructure site selection process has been refined. The detailed GHG baseline assessment will comprise a review of the existing land and seabed use likely to be affected by construction activities, with reference to any areas of carbon-rich habitats, such as peaty soils, woodland, seabed sediments, saltmarsh and seagrass beds.

8.3.3.4 The CCRA baseline shall be informed through a review of observational data for the Onshore Transmission Infrastructure, Landfall and Offshore Transmission Infrastructure. Data will be collected on a variety of climatic parameters, including temperature, precipitation, wind speeds and records of extreme weather. Data sources to be used to inform the CCRA are set out in **section 8.3.4**.

Future Baseline Conditions

8.3.3.5 The future baseline GHG emissions for the land and seabed use in the absence of the Ossian Transmission Infrastructure would be expected to remain similar to the existing land and seabed use, with a decrease in agriculture-related GHG emissions over time, in line with the UK's national climate change policies (such as the UK's Net Zero Strategy (BEIS, 2021; DESNZ, 2023)).

8.3.3.6 The CCRA future baseline will be informed by a review of projections of future climate change, sourced from local, regional, national and international climate change projection modelling (see **Table 8.3.1**). It is anticipated that these will display general warming trends, alongside changes to precipitation patterns, wind speeds, extreme weather events, wave heights, and sea level. These parameters will be reviewed and presented in greater detail.

8.3.4 Proposed Data Sources

Desk Studies

8.3.4.1 The data sources used to inform the baseline assessment will primarily comprise published material (e.g. datasets, studies) that is publicly available online. Baseline site-specific surveys undertaken to support the benthic ecology (see **section 6.3**) and land use assessments (see **section 7.7**) will be utilised where relevant to inform the seabed and land use GHG baseline for the Offshore Transmission Infrastructure, Landfall and Onshore Transmission Infrastructure, respectively.

8.3.4.2 Primary data sources are listed in **Table 8.3.1** below. Where a date or edition has been specified, this is the current edition but the latest version available at the time of assessment would be used.

Table 8.3.1: Key Data Sources - Climate Change

Source	Author and Year	Description
GHG Emissions Assessment Data Sources (General)		
Inventory of Carbon and Energy Database	Jones and Hammond, 2019	To support calculation of embodied carbon emissions.
Published EPDs	Various	To support calculation embodied carbon emissions for elements of the Ossian Transmission Infrastructure, such as transformers and cables.
Published building benchmarks	Royal Institution of Chartered Surveyors (RICS) (2012), OneClick Life cycle Assessment LCA (2023)	To support calculation of embodied carbon emissions for elements of the Ossian Transmission Infrastructure, such as the Onshore Converter Stations.
UK Government GHG Conversion Factors for Company Reporting	DESNZ and Department for Environment, Food and Rural Affairs (Defra), 2024	Emission factor depository used to calculate GHG emissions.
Published carbon storage and sequestration data for terrestrial and marine habitats	Cunningham and Hunt (2023), Gregg *et al*. (2021)	To support calculation of land use and seabed GHG emissions.
Peaty Soils Location (England)	Natural England (2024)	To support the assessment of land use GHG emissions.
CCRA Data Sources (General)		
IPCC Sixth Assessment Report	IPCC (2021)	Source of climate change projections and climate baseline for the Offshore Transmission Infrastructure.
Met Office Climate Averages	Met Office (2020)	Source of climate baseline data for the Onshore Transmission Infrastructure.
UKCP18 Dataset	MOHC (2024)	Source of climate change projections for the Onshore Transmission Infrastructure.
UKCP18 Marine Report	Palmer. (2018)	Source of climate change projections for the Offshore Transmission Infrastructure.
UK Offshore Energy Strategic Environmental Assessment	BEIS (2022)	Source of climate baseline data for the Offshore Transmission Infrastructure.

Site-specific Surveys

8.3.4.3 There are no site-specific surveys proposed for climate change.

8.3.5 Mitigation Measures

8.3.5.1 The following measures adopted as part of the Ossian Transmission Infrastructure are relevant to the assessment for climate change. These measures may evolve (and be further clarified) as the design and EIA process progresses.

- The Applicant will implement elements of its Net Zero Transition Action Plan in the construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure, as appropriate.
- The design of the Ossian Transmission Infrastructure will be aligned with the principles of the Publicly Available Specification 2080:2023 technical standard (British Standards Institute (BSI), 2023), which provides the technical standard for managing whole-life carbon in buildings and infrastructure.
- The Applicant will aim to reduce or control GHG emissions throughout the lifetime of the Ossian Transmission Infrastructure. Measures will include sustainable procurement practices, such as the following, which will be set out in a GHG Reduction Strategy.
  - The Applicant will take a sustainable approach to procurement and work with the supply chain to drive the uptake of low carbon solutions in the

construction, and operation and maintenance of the Ossian Transmission Infrastructure, where feasible.
  - Focus areas for supply chain engagement during the construction phase of the Ossian Transmission Infrastructure will be on carbon hotspots, such as steel and marine shipping fuels.
  - Sustainability criteria will be implemented, where possible, within supplier selection processes, including tender questions on carbon management which are weighted and scored, and contractual clauses on sustainability performance for the contractors and suppliers delivering the Ossian Transmission Infrastructure.
  - In the sourcing of Service Operation Vessels (SOVs) used for operation and maintenance phase activities, the Applicant will specify the use of more efficient vessels which are 'next-gen ready', where feasible.
- To adapt to the effects of climate change, the design of the Ossian Transmission Infrastructure will consider projected future climate changes, including sea level rise, increased flood risk, increased temperatures and heatwave incidence, and higher frequency and intensity of extreme weather (e.g. storms), where necessary.

8.3.5.2 In addition, given that the purpose of the Ossian Transmission Infrastructure is to connect a source of renewable energy (the Ossian Array) to the National Grid electricity transmission system, climate change mitigation is an inherent aim and direct consequence of the Ossian Transmission Infrastructure.

8.3.5.3 As part of the applications for development consent and a Marine Licence, outline management plans, including a CoCP and Site Waste Management Plan, will be prepared. These will include climate change mitigation measures where relevant, including the control of construction and operational waste, and optimisation of site construction activities to reduce associated energy use.

8.3.6 Proposed Scope of the Assessment

8.3.6.1 Potential impacts that are proposed to be scoped into the assessment for climate change are set out in **Table 8.3.2**.

8.3.7 Impacts Proposed to be Scoped Out

8.3.7.1 Impacts that are proposed to be scoped out of the assessment for climate change and the justification are set out in **Table 8.3.3**.

Table 8.3.2: Potential Impacts Proposed to be Scoped in for Climate Change

Impact	Phase			Relevant to England or Scotland		Description	Proposed Approach to Assessment
	C	O	D	England	Scotland		
The impact of GHG emissions arising from the manufacturing and installation of the Ossian Transmission Infrastructure	✓	×	×	✓	✓	GHG emissions will arise from the manufacturing and installation of the Ossian Transmission Infrastructure, including Offshore Export Cables, Transition Joint Bays, Onshore Export Cables, Onshore Converter Stations, access tracks and grid connection works. These emissions would contribute to the lifecycle total and net GHG balance of the Ossian Transmission Infrastructure.	The assessment will take into account the IEMA Environmental Impact Assessment Guide 'Assessing Greenhouse Gas Emissions and Evaluating Their Significance' (IEMA, 2022) or any updates to this guidance. The magnitude of impact will be expressed as tonnes of carbon dioxide equivalent (tCO_2e), using 100-year global warming potential values for non-CO_2 GHGs from the Intergovernmental Panel on Climate Change (IPCC's) Sixth Assessment Report (IPCC, 2021), or as otherwise defined in literature sources. Emissions will be calculated using published carbon intensity benchmark values, project-specific materials, energy and fuel consumption estimates together with published Environmental Product Declarations (EPDs) and appropriate emissions factors.
The impact of GHG emissions arising from land and seabed use change.	✓	×	×	✓	✓	GHG emissions will arise from land and seabed use change from habitat loss during construction of the Ossian Transmission Infrastructure. In particular, GHG emissions will arise from loss of habitats that have significant carbon stores (such as seagrass or seabed sediment habitat offshore, or peat and woodland onshore). These emissions would contribute to the lifecycle total and net GHG balance of the Ossian Transmission Infrastructure.	The assessment will take into account IEMA (2022) guidance or any updates to this guidance. The magnitude of impact will be expressed as tCO_2e, using 100-year global warming potential values for non-CO_2 GHGs from the IPCC's Sixth Assessment Report (IPCC, 2021), or as otherwise defined in literature sources. Land and seabed use change emissions will be assessed using relevant land use survey results, published data on agricultural land use classes, soil carbon stocks and GHG fluxes (for the Onshore Transmission Infrastructure) and benthic ecology survey results, and published data on blue carbon stocks and GHG fluxes (for the Offshore Transmission Infrastructure). Consideration would be given to whether the Ossian Transmission Infrastructure would affect/disturb areas of high terrestrial or marine carbon stocks.
The impact of climate change on the Ossian Transmission Infrastructure.	×	✓	×	✓	✓	The Ossian Transmission Infrastructure consists of Offshore Export Cables, Transition Joint Bays, Onshore Export Cables, access tracks and Onshore Converter Stations. These are generally at low risk from climate change, with no vulnerable site users.	The assessment will be undertaken in accordance with Environmental Impact Assessment Guide to Climate Change Resilience and Adaptation (IEMA, 2020), and adopt a risk-based approach to assessment through four key stages.

Impact	Phase			Relevant to England or Scotland		Description	Proposed Approach to Assessment
	C	O	D	England	Scotland		
						The main climate risk to the Landfall and Onshore Transmission Infrastructure is flooding, which will be assessed in the Flood Risk Assessment. Other risks, such as increased temperatures resulting in increased cooling demand and/or component failure, and extreme weather events causing damage, will be assessed. Risks to the Offshore Transmission Infrastructure, such as increased scour from extreme weather events or corrosion of submerged structures, will also be assessed.	An assessment of the baseline climate to understand present-day vulnerability and assess current climate-related risks, opportunities, and levels of adaptation. An assessment of future climate projections to understand the future vulnerability. Identification of the vulnerability of the Ossian Transmission Infrastructure to climate change (including the identification of hazards and receptors) and undertake an assessment of the likelihood and severity of potential impacts and effects, respectively. Identification of climate change adaptation and mitigation commitments, including design measures to reduce the vulnerability of the Ossian Transmission Infrastructure to climate change.
Net Whole Life Effects							
Net whole life GHG emissions and context across all Ossian Transmission Infrastructure stages.	✓	✓	✓	✓	✓	IEMA (2022) guidance notes that, due to the nature of GHG emissions, it is good practice to include a section that reports on the whole life GHG emissions associated with a project. As such, the assessment will detail net whole life GHG emissions, taking into account the GHG emissions from the construction, operation and maintenance and decommissioning phases.	The assessment will take into account IEMA (2022) guidance or any updates to this guidance. The magnitude of impact will be expressed as tCO_2e, using 100-year global warming potential values for non-CO_2 GHGs from the IPCC's Sixth Assessment Report (IPCC, 2021) or as otherwise defined in literature sources.
Cumulative net whole life GHG emissions for Ossian.	✓	✓	✓	✓	✓	As the purpose of the Ossian Transmission Infrastructure is to connect the Array to the National Grid, the cumulative GHG effects with the Array will be considered, including the avoided or 'saved' GHG emissions over the lifetime of Ossian.	The assessment will take into account IEMA (2022) guidance or any updates to this guidance. The magnitude of impact will be expressed as tCO_2e, using 100-year global warming potential values for non-CO_2 GHGs from the IPCC's Sixth Assessment Report (IPCC, 2021) or as otherwise defined in literature sources. The cumulative net emissions will account for energy generated from the Array, and their effects, in comparison to alternative grid-connected electricity generators, to calculate the avoided emissions over the lifetime of the

Impact	Phase			Relevant to England or Scotland		Description	Proposed Approach to Assessment
	C	O	D	England	Scotland		
							Ossian. Net emissions will be informed by the GHG assessment detailed in the Array Application.

Table 8.3.3: Impacts Proposed to be Scoped Out of the Assessment for Climate Change

Impact	Relevant to England or Scotland		Justification
	England	Scotland	
Construction			
The impact of disposal of waste during construction	✓	✓	Emissions from the disposal of waste materials are not expected to be material. Waste would predominantly comprise inert waste. No significant effects are therefore considered likely. It is noted that the impacts and effects of disposal of waste during construction have been scoped out for other projects, such as Eastern Green Link 3 and 4.
Operation and Maintenance			
The impact of GHG emissions arising from the consumption of materials and activities required to facilitate the operation and maintenance phase.	✓	✓	The Ossian Transmission Infrastructure will not be designed with the expectation of any significant plant maintenance and repair activities, or refurbishment being required, and therefore emissions due to these activities are expected to be minimal. There is therefore no potential for significant effects and this is proposed to be scoped out of the assessment.
Decommissioning			
The impact of GHG emissions arising from the decommissioning phase.	✓	✓	The potential impacts of the decommissioning phase are proposed to be scoped out. This is due to uncertainties around the fate of infrastructure so far into the future. The Applicant will commit to assessment of such impacts at the time of decommissioning through the draft DCO. It is noted that the impacts and effects during decommissioning have been scoped out for other projects, such as Eastern Green Link 3 and 4.
Construction and Decommissioning			
The impact of climate change on the Ossian Transmission Infrastructure during construction and decommissioning.	✓	✓	The construction and decommissioning phases of the Ossian Transmission Infrastructure are anticipated to be relatively short term. The construction of the Ossian Transmission Infrastructure is anticipated to take approximately four years, and decommissioning is assumed to be similar. Variations in climatic parameters would be minimal compared to the present day baseline for construction. Climate changes are likely to occur gradually, and it is considered that construction contractors will be able to adapt working methods over time, where necessary, prior to the commencement of decommissioning. The Applicants will employ good health and safety practices with respect to risks such as heatstroke or storm events offshore.

Impact	Relevant to England or Scotland		Justification
	England	Scotland	
			The effects of climate change on the Ossian Transmission Infrastructure during the construction and decommissioning phases are not anticipated to be significant and are therefore proposed to be scoped out of the assessment for climate change.
Operation and Maintenance and Decommissioning			
The impact of GHG emissions arising from land and seabed use change during the operation and maintenance and decommissioning phases.	✓	✓	The operation and maintenance phase would not result in any new habitat loss. All impacts in terms of change in land use or impacts on seabed use would occur during the construction phase. Operation and maintenance activities, as described in **section 4** of this EIA Scoping Report would be limited in nature and, in many cases, would be undertaken remotely. Works at the Onshore Converter Stations would be undertaken within the operational footprint created during the construction phase. No new impacts are anticipated during the operation and maintenance phase and therefore there is no potential for significant effects. The decommissioning phase of the Ossian Transmission Infrastructure is anticipated to be relatively short. Decommissioning activities will occur in the same area as construction and operation and maintenance activities, and will not cause material land or seabed use change. In addition, there are significant uncertainties around the fate of infrastructure so far into the future. The Applicant will commit to assessment of any impacts, if required, at the time of decommissioning through the draft DCO. As such, it is considered that the decommissioning phase will not result in substantial GHG emissions from land and seabed use change, and this impact is proposed to be scoped out of the assessment. It is noted that the impacts and effects during decommissioning have been scoped out for other projects, such as Eastern Green Link 3 and 4.
In-combination Climate Change Effects			
In-combination climate change effects.	✓	✓	In-combination climate change effects are proposed to be scoped out of the climate change assessment as they will be addressed individually within each relevant topic assessment chapter of the ES. Climate projections data will be provided to ES topic authors, so that each topic assessment can consider how potential climatic changes may affect the future baseline, including the sensitivity or resilience of identified receptors.

8.3.8 Proposed Assessment Methodology

8.3.8.1 The proposed assessment methodology for the impacts to be scoped into the assessment of climate change, as set out in **Table 8.3.2**, is described below.

8.3.8.2 The methodology will build on the assessment undertaken for the Ossian Array and the overall methodology will align with that used for the Ossian Array, where appropriate.

Legislation and Policy

8.3.8.3 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance - General

8.3.8.4 The main guidance for the assessment of GHG emissions in EIA is the IEMA guide to 'Assessing Greenhouse Gas Emissions and Evaluating their Significance' (IEMA, 2022).

8.3.8.5 The main guidance document with regard to CCRA within the context of EIA is the Environmental Impact Assessment Guidance on Climate Change Resilience and Adaptation (IEMA, 2020).

8.3.8.6 Both guidance documents are applicable to both English and Scottish jurisdiction.

GHG Emissions Assessment - General

8.3.8.7 The GHG emissions assessment will take into account the work undertaken for the Ossian Array as part of the Array Application and will build on this. It will be undertaken on a lifecycle basis, calculating the GHG emissions associated with the construction, operation and decommissioning of the Ossian Transmission Infrastructure.

8.3.8.8 GHG emissions have a global (international) impact rather than directly affecting any specific local receptor to which a level of sensitivity can be assigned. The global atmospheric mass of the relevant GHGs and consequent warming potential, expressed in CO_2e, will therefore be treated as a single receptor of high sensitivity (given the importance of the global climate as a receptor).

8.3.8.9 In line with IEMA (2022) guidance, the magnitude of impact will be reported numerically in tonnes of CO_2e. Where a quantifiable figure is not possible, this will be expressed qualitatively.

8.3.8.10 The significance of the effect upon climate change will be determined by considering the sensitivity of the receptor and the magnitude of the impact.

8.3.8.11 Assessment guidance from IEMA (2022) describes five levels of significance for emissions resulting from a development, each based on how that development contributes towards achieving a net zero and 1.5°C-aligned reduction trajectory. To aid in considering whether effects are significant, the guidance recommends that GHG emissions should be contextualised against pre-determined carbon budgets, or policy and performance standards where a budget is not available. It is a matter of professional judgement to integrate these sources of evidence and evaluate them in the context of significance.

8.3.8.12 Taking the guidance into account, the following will be considered in contextualising the Ossian Transmission Infrastructure's emissions.

- The magnitude of net GHG emissions as a percentage of national and local carbon budgets (where feasible).
- Whether the Ossian Transmission Infrastructure contributes to, and is line with, the UK's policy for GHG emissions reductions, where these are consistent with science-based commitments to limit global climate change to an internationally-agreed level (as determined by the UK's nationally determined contribution to the Paris Agreement).

8.3.8.13 Effects from GHG emissions will be described in the assessment for climate change as adverse, negligible or beneficial based on the following definitions, which closely follow the examples in Box 3 of the IEMA guidance (IEMA, 2022).

- Major adverse: impacts are not mitigated or are only compliant with do-minimum standards set through regulation, and do not provide further reductions required by existing local and national policy for projects of this type.
- Moderate adverse: impacts are partially mitigated and may partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type.
- Minor adverse: impacts would be reduced through measures that go well beyond existing and emerging policy requirements and good practice design standards for projects of this type.
- Negligible: impacts would be reduced through measures that go well beyond existing and emerging policy and design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050.
- Beneficial: impacts are below zero and it causes a reduction in atmospheric GHG concentration, whether directly or indirectly, compared to the without-project baseline.

8.3.8.14 Major and moderate adverse effects and beneficial effects are considered to be significant. Minor adverse and negligible effects are not considered to be significant.

8.3.8.15 GHG emissions associated with a project are often reported as a whole life figure (net emissions) that takes account of all life stages. The net whole life figure is the key element for determining the Ossian Transmission Infrastructure's whole life impact on climate change.

8.3.8.16 In addition, the impact of the Ossian Transmission Infrastructure will be considered in the context of the separate application for the Array. This allows the consideration of avoided emissions from the generation of renewable electricity (associated with the application for the Array) enabled by the Ossian Transmission Infrastructure. Avoided emissions refer to those emissions that have been prevented by using a specific product or service, compared to a scenario where

the product or service had not been used. The impact of avoided emissions, taking into account the application for the Array will be assessed in the cumulative effects assessment in the ES.

Climate Change Adaptation and Resilience - General

8.3.8.17 IEMA (2020) defines climate change resilience as the *'ability to respond to changes in climate. If a receptor or project has good climate change resilience, it is able to respond to the changes in climate in a way that ensures it retains much of its original function and form. A receptor or project that has poor climate change resilience will lose much of its original function or form as the climate changes'*.

8.3.8.18 Assessment of climate change adaptation and resilience differs from many other EIA topics in that it considers how the resilience of a development is affected by an external factor (climate change) and not specifically how potential environmental receptors are affected by a development's impacts. Consequentially, this assessment cannot easily be assigned significance with respect to the severity of impacts in the same way as for the other topics. Instead, a risk-analysis based approach will be used for the assessment.

8.3.8.19 An assessment of climate change risks will be undertaken and presented in a matrix format, considering the probability and consequence of the identified risks to the Ossian Transmission Infrastructure (see **Table 8.3.4** for definitions, which have been informed by IEMA (2020) guidance). A scoring matrix will be used to define the overall significance of each risk (see **Table 8.3.5**), considering embedded mitigation measures.

Table 8.3.4: Probability and Consequence Factor Definitions

Factor	Score Definition
Probability: Reflects both the range of possibility of climatic parameter changes illustrated in the climate change projections and the probability that the possible changes would cause the impact being considered.	Major: high probability of impact, likely even with the smaller changes illustrated as possible in the projections.
	Moderate: moderate probability of impact, plausible in the central range of possible change illustrated in projections.
	Minor: unlikely or low probability of impact; impact would occur only at the extremes of possible change illustrated in projections.
Consequence: the magnitude and likely consequences of the impact should it occur.	High: severe impact (e.g. risk to individual life or public health, widespread property damage or disruption to business).
	Medium: moderate impacts with greater disruption and/or costs.
	Low: unlikely or low impact: for example, low-cost and easily repaired property damage; small changes in occupiers' behaviour.

Table 8.3.5: Risk Assessment Scoring Matrix

	Probability		
Consequence	**Minor**	**Moderate**	**Major**
Low	Not Significant	Not Significant	Significant
Medium	Not Significant	Significant	Significant
High	Significant	Significant	Significant

8.3.8.20 The assessment of effects will present the following:

- the effects of the Ossian Transmission Infrastructure as a whole (including the SOfTI);
- the effects of the EOfTI, Landfall and Onshore Transmission Infrastructure (to inform the application for development consent to be made to the Planning Inspectorate); and
- the effects of the SOfTI (to inform the application for a Marine License to be made to MD-LOT).

Cumulative Effects and Inter-related Effects

8.3.8.21 The CEA for climate change will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. This assessment will include consideration of cumulative effects of the Ossian Transmission Infrastructure with the Ossian Array. This will build on and further develop the assessment provided in the Array Application.

8.3.8.22 The climate change chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects and will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

8.3.8.23 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure.

8.3.8.24 All developments that emit GHGs have the potential to impact the atmospheric mass of GHGs as a receptor and so may have a transboundary impact on climate change. Consequently, transboundary impacts due to other specific international development projects are not individually identified but would be taken into account when considering the impact of the Ossian Transmission Infrastructure by defining the atmospheric mass of GHGs as a high sensitivity receptor. Each country has its own policy and targets concerning carbon and climate change which are intended to limit GHG emissions to acceptable levels within that country's defined budget

and international commitments. It is therefore proposed that transboundary impacts and effects on climate change are screened in for the EIA process.

Relevant Consultation

8.3.8.25 The Applicant has undertaken introductory consultation with statutory consultees through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken if required throughout the PEIR and ES phases.

8.3.9 Next Steps

8.3.9.1 The following are proposed as next steps in relation to climate change.

- As highlighted in **paragraph 8.3.1.2**, climate change will be assessed for the Ossian Transmission Infrastructure though an assessment of GHG emissions and assessment of climate risk and resilience.
- As part of the ongoing site selection process and refinement of the Ossian Transmission Infrastructure, the GHG emissions assessment methodology and climate risk and resilience methodology will be refined, and relevant baseline information will be collected. Data will be collected through site-specific benthic ecology and land use surveys, alongside desk-based review of applicable GHG emissions data and climate change projections.
- The CCRA study area set out in **paragraph 8.3.2.5** will also be refined, following selection of Offshore Export Cable Corridor(s), Landfall, Transition Joint Bays, Onshore Export Cable Corridors, and Onshore Converter Station sites.

8.3.9.2 While there are no statutory consultees to consult with regarding climate change, any comments regarding the assessment of climate change following the submission of this EIA Scoping Report will be reviewed and accounted for where appropriate.

9. OTHER ASSESSMENTS

9.1. Introduction

9.1.1.1 In addition to the requirement for EIA, other assessments are required under separate policy and legislation to support the application for development consent and deemed Marine License and Marine Licence in Scottish waters for the Ossian Transmission Infrastructure, which are described in the following sections of this EIA Scoping Report.

9.1.1.2 The scope of these other assessments will be discussed and agreed with relevant authorities in line with the requirements of the relevant policy and legislation, rather than within this EIA Scoping Report. However, the topic chapters within this EIA Scoping Report indicate where the findings from these other assessments will be utilised during the EIA process, as appropriate.

9.2. Habitat Regulations - General

9.2.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) (collectively known as the 'Habitats Regulations') require the assessment of significant effects on internationally important nature conservation sites, including the following:

- SACs or candidate SACs;
- SPAs or potential SPAs;
- Sites of Community Importance; and
- Ramsar sites.

9.2.1.2 These have been traditionally referred to as European Sites or Natura 2000 sites. Following the UK's departure from the EU, and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, such sites in the UK are now referred to as the National Site Network. The assessment required under the Habitats Regulations is to be undertaken by the 'competent authority', which, in the case of the Ossian Transmission Infrastructure, is the Secretary of State for Energy Security and Net Zero (in respect of the EOfTI, Landfall and the Onshore Transmission Infrastructure) and the Scottish Ministers (in respect of the SOfTI).

9.2.1.3 To carry out the assessment, the competent authority requires a report to be submitted alongside the application for development consent. Therefore, an Information to Support Appropriate Assessment (ISAA) will be provided alongside the application for development consent and deemed Marine License, and Marine Licence in Scottish waters, reporting the findings of the HRA process for the Ossian Transmission Infrastructure.

9.2.1.4 At this stage, a Stage 1 Likely Significant Effects (LSE) Screening Report has been undertaken based on the current design of the Ossian Transmission Infrastructure and is provided separately. This process covers all onshore and offshore elements of the Ossian Transmission Infrastructure within a single assessment and reporting process.

9.2.1.5 The Stage 1 LSE Screening Report for the Ossian Transmission Infrastructure aims to inform the HRA process by evaluating the potential for LSE on National Site Network sites. It identifies relevant sites and features that could be affected. Sites with no predicted LSE are screened out, while those with potential LSE will be considered further in the Stage 2 Appropriate Assessment.

9.2.1.6 The Habitats Regulations also provide protection for certain species of plants and animals, referred to as EPS. These regulations set out those species that are protected and the activities that are prohibited, such as deliberate disturbance or creating damage to a breeding place.

9.2.1.7 The Habitats Regulations also provide for licences to be granted for certain operations, such as proposed developments that may affect protected species, subject to:

- there being no satisfactory alternative; and
- the action authorised not being detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

9.2.1.8 With respect to the Ossian Transmission Infrastructure, the species present will be identified, and the likely effects assessed within the ES. Where possible, effects on protected species will be avoided or reduced. Where such effects cannot be avoided, then an application for an EPS licence will be made. For EOfTI this would to be the MMO, for the SOfTI this would be MD-Lot and for the Landfall and the Onshore Transmission Infrastructure this would be Natural England.

9.3. Marine Conservation Zone Assessment – General

9.3.1.1 Part 5 of the Marine and Coastal Access Act 2009 enables the designation of MCZs in England and Wales as well as UK offshore areas. Consideration of MCZs is required for any marine licence application or application for development consent which includes a deemed Marine Licence.

9.3.1.2 As stated in **section 1** of this EIA Scoping Report, a deemed Marine License is required for the Offshore Transmission Infrastructure.

9.3.1.3 A MCZ screening report is provided, which forms **Appendix 9.1** of this EIA Scoping Report. The MCZ Screening also provides a summary of the proposed approach to the MCZ assessment for the EOfTI, which will be reported in the ES.

9.4. Water Framework Directive - General

9.4.1.1 The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 set out objectives for surface and groundwater bodies, including water quality with the aim of improving the water environment. Objectives are set for waterbodies in terms of their status.

9.4.1.2 According to the EA's Water Framework Directive assessment: estuarine and coastal waters (EA, 2010), impacts of biology, chemistry and hydromorphology need to be considered specifically in relation to WFD status classes and to be reported under a specific WFD section in any environmental statement or report produced or in a separate WFD compliance report.

9.4.1.3 Therefore, a WFD Compliance Assessment will be conducted as part of the application for development consent to ensure that any impacts on WFD receptors from the Ossian Transmission Infrastructure align with the objectives of affected WFD water bodies. The WFD Compliance Assessment will also help guide the design of the Ossian Transmission Infrastructure to avoid, minimise, mitigate, or compensate for risks to WFD water body receptors.

9.4.1.4 WFD Screening Assessments for the Ossian Transmission Infrastructure are provided in **Appendices 9.2** and **9.3** of this EIA Scoping Report. They identify the resources that need to be considered within the WFD Compliance Assessment that will be prepared and submitted alongside the PEIR and subsequent ES.

10. TOPICS PROPOSED TO BE SCOPED OUT

10.1. Introduction

10.1.1.1 The following sections of this EIA Scoping Report set out the environmental topics proposed to be scoped out of the EIA process for the Ossian Transmission Infrastructure. These topics are proposed to be scoped out for both English and Scottish jurisdictions.

10.2. Planning Policy Context

10.2.1.1 A description of the consenting process and the Planning Act 2008 will be provided within the introductory chapters of the ES, setting the context for the Ossian Transmission Infrastructure and the EIA process. In addition, the relevant national and local legislative and planning policy requirements will be described within each environmental topic chapter, including how and where these have been considered in the PEIR and subsequent ES.

10.2.1.2 A Planning Statement will also be submitted in support of the application for development consent for the Ossian Transmission Infrastructure. The Planning Statement will evidence how the Ossian Transmission Infrastructure complies with relevant national, regional and local legislative and planning policy requirements. This will be supported by detailed policy trackers, in line with good practice and guidance from the Planning Inspectorate, including NPS, marine policy and local policy trackers to demonstrate compliance with relevant policies on a policy-by-policy basis.

10.2.1.3 Taking the above information into account, and in the interests of supporting a proportionate EIA process, it is proposed that a standalone chapter in the ES addressing planning policy compliance is not required and is proposed to be scoped out of the EIA process for the Ossian Transmission Infrastructure.

10.3. Daylight, Sunlight and Microclimate

10.3.1.1 As described in **section 4** of this EIA Scoping Report, the Ossian Transmission Infrastructure comprises Offshore Export Cables, the Landfall, Onshore Export Cables and Onshore Converter Stations. The maximum building height of the Onshore Converter Stations is anticipated to be up to 26 m, with lightning protection up to 33 m. All other elements of the Ossian Transmission Infrastructure are likely to be at/below ground or sea level.

10.3.1.2 The siting process for Onshore Converter Stations is ongoing. However, the avoidance of residential properties is a design principle being used as part of the site selection process for the Onshore Converter Stations (see **section 3** of this EIA Scoping Report).

10.3.1.3 It is considered that none of the above ground elements (i.e. Onshore Converter Stations or temporary elements required for construction of the Ossian Transmission Infrastructure) would be of sufficient height or proximity to existing buildings to result in adverse significant effects with respect to daylight and sunlight during construction, operation and maintenance or decommissioning of the Ossian Transmission Infrastructure. The nature of the Ossian Transmission Infrastructure is not likely to result in microclimate changes. The effects of the Ossian Transmission Infrastructure on climate change are scoped in to the EIA (see **section 8.3** of this EIA Scoping Report).

10.3.1.4 Taking the above information into account, it is proposed that impacts in relation to daylight, sunlight and microclimate are scoped out of the EIA process for the Ossian Transmission Infrastructure.

10.4. Heat and Radiation

10.4.1 Heat

10.4.1.1 Given the nature of the development, it is considered that construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure is unlikely to generate high levels of heat. In addition, the design and technical specification of the Ossian Transmission Infrastructure would take into account and safeguard against overheating.

10.4.1.2 Taking the above information into account, it is considered that significant adverse effects from heat are unlikely to occur or result in any significant environmental effects during construction, operation and maintenance or decommissioning of the Ossian Transmission Infrastructure.

10.4.2 Radiation

10.4.2.1 The Ossian Transmission Infrastructure is anticipated to generate radiation in the form of EMF. As set out in **section 7.12** of this EIA Scoping Report, EMFs are a natural part of our environment and are produced whenever electricity is generated, transmitted, or used. Exposure to EMFs arises from various sources, including electrical appliances, power lines, and other electrical infrastructure. Additionally, static EMFs are present in the earth's natural magnetic field, the atmospheric electrical field, and from human-made sources.

10.4.2.2 Details of the approach to the assessment of effects in relation to EMF and human receptors are set out in **section 7.12** of this EIA Scoping Report. As set out in that section, whilst the perception of risks associated with EMFs is scoped in, the actual risks of EMFs in relation to the Onshore Transmission Infrastructure are proposed to be scoped out based on the following.

- Construction: Construction works would not include using, or making changes to, active major electrical infrastructure producing EMF. Relevant public and occupational safeguards, secured through management plans, would be followed for the temporary electrical equipment used. EMF strength reduce rapidly with distance, often requiring only a few meters separation between the source and receptor, to reach background levels. No ionising radiation sources are proposed. On this basis, it is proposed that radiation will be scoped out of the assessment for

health and wellbeing during construction of the Onshore Transmission Infrastructure.

- Operation and Maintenance: The Applicant is required to be compliant with the Electricity Safety, Quality and Continuity Regulations 2002, which imposes requirements regarding the installation and use of electrical networks and equipment owned or operated by generators, distributors, and meter operators, and the participation of suppliers in providing electricity to consumers. It is Government policy to also comply with the ICNIRP guidelines (ICNIRP, 1998, 2010) and this is specified in NPS EN-5 (Department for Energy Security & Net Zero, 2023c). During operation and maintenance, the 'actual EMF' risks from electrical infrastructure are proposed to be scoped out on the basis that the Onshore Transmission Infrastructure would adopt the relevant public exposure limits set out by the ICNIRP guidelines (ICNIRP, 1998, 2010) and Government voluntary Code of Practice on EMF public exposure (Department for Energy Security & Net Zero, 2012). These guidelines are long standing and have a high safety margin. The levels of exposure that they require would not pose a risk to public health. Compliance with such health protection standards would be delivered through the detailed engineering design of the Onshore Export Cables, Onshore Converter Stations and other electrical infrastructure. For example, buried cables do not produce an electric field at the surface. Magnetic fields vary with design but are engineered to be ICNIRP compliant. In scoping for likely significant effects, the Onshore Transmission Infrastructure has had regard to Department of Health and Social Care advice on EMF exposures. The UK Health Security Agency guidance on reducing exposure to EMF was updated in March 2024 and state that 'measures to reduce fields, such as avoiding the routing of power lines near to homes, or not building homes close to power lines, are not needed'. Notwithstanding this, the Applicant's site selection process will have specific regard to the proximity to residential properties and community buildings, such as schools. The Applicant would be responsible for monitoring compliance with the guideline limits set out in the ICNIRP guidelines (ICNIRP, 1998, 2010) and the UK Government voluntary code of practice (Department for Energy Security & Net Zero, 2012). Confirmation would be set out in post-consenting detailed engineering calculations, and if appropriate one-off confirmatory measurement of field strengths at the nearest relevant location, e.g. residential receptor, as set out in the Government voluntary Code of Practice.

10.4.2.3 As discussed in **section 7.12**, the actual risks of EMF associated with the operation of the Onshore Transmission Infrastructure would be avoided through the Applicant committing to adopt the relevant provisions of the ICNIRP (ICNIRP, 1998, 2010) guidelines and Government voluntary Code of Practice on EMF public exposure (Department for Energy Security & Net Zero, 2012). The Onshore Transmission Infrastructure electrical infrastructure, including Onshore Export Cables and Onshore Converter Stations, may however lead to community concerns, influencing the mental health for some residents in the local area. The human health assessment will consider the likely significant population health effects due to changes in understanding of risks associated with EMF. It is noted that reducing such risks can be achieved through providing information to the public that the Ossian Transmission Infrastructure would meet the UK health protection standards, as set out in the ICNIRP 1998 and 2010 guidance. In line with good practice, this EIA Scoping Report therefore forms part of that early communication and the health and well-being assessments in the PEIR and ES will provide further information that the relevant safety standards will be delivered through the detailed design and engineering of the Onshore Transmission Infrastructure.

10.4.2.4 With respect to the Offshore Transmission Infrastructure, any potential adverse impacts associated with EMF during operation of the Offshore Transmission Infrastructure will be considered as part of the benthic subtidal and intertidal ecology, fish and shellfish ecology chapters of the ES (see **section 6** of this EIA Scoping Report).

10.4.2.5 Taking the above information into account, and in the interests of supporting a proportionate EIA process, it is proposed that a standalone chapter in ES addressing radiation is not required. However, a statement setting out compliance with the applicable exposure guidelines will be provided as part of the application for development consent.

10.5. Aviation and Radar

10.5.1.1 As described in **section 4** of this EIA Scoping Report, the Ossian Transmission Infrastructure comprises Offshore Export Cables, the Landfall, Onshore Export Cables and Onshore Converter Stations. On the basis that the Offshore Export Cables, Landfall and Onshore Export Cables would be located either at or below sea/ground level, it is considered that these elements would have no potential to result in significant adverse effects on aviation and radar receptors the during construction, operation and maintenance or decommissioning phases.

10.5.1.2 As such, the potential for adverse effects on aviation and radar receptors (e.g. safeguarded aerodromes, technical sites, radar facilities) would be limited to construction, operation and maintenance and decommissioning of the Onshore Converter Stations. As set out in **section 4**, the maximum building height of the Onshore Converter Stations is anticipated to be up to 26 m, with lightning protection up to 33 m.

10.5.1.3 The nearest officially safeguarded civil aerodromes listed in Annex 3 of The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002 to the Ossian Transmission Infrastructure Scoping Boundary are as follows.

- Humberside aerodrome, which is located approximately 40 km to the north west of the Onshore Scoping Boundary.
- Doncaster Sheffield aerodrome, which is located approximately 74 km to the north west of the Onshore Scoping Boundary.
- East Midlands aerodrome, which is located approximately 78 km to the south west of the Onshore Scoping Boundary.

10.5.1.4 As indicated above, the Onshore Transmission Infrastructure, including Onshore Converter Stations, is located well beyond the areas where any significant effect on the safeguarding of civil aviation interests at these airports could arise. In addition, at 33 m, the highest part of the Onshore Converter Stations falls well

below the 91.4 m requiring notification to the Civil Aviation Authority (CAA) as a high structure for the purposes of identifying obstacles for aviation.

10.5.1.5 There are no civil en-route technical sites listed in Annex 4 of The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002 located within the local authority areas of East Lindsey District Council, Boston Borough Council or South Holland District Council for which any separate official safeguarding maps have been issued.

10.5.1.6 The Onshore Converter Stations are also unlikely to affect the general Primary Surveillance Radar coverage for the area, as there are other structures of similar height already in proximity. These include 14 onshore wind turbines at Bambers Farm, Mablethorpe, located adjacent to the Ossian Transmission Infrastructure Scoping Boundary, and the existing Bicker Fen to Walpole 400 kV overhead line situated at Weston Marsh. There are no safeguarding areas for specific NATS assets (i.e. Secondary Surveillance radars or Air-Ground-Air communication sites) within the Ossian Transmission Infrastructure Scoping Boundary.

10.5.1.7 Safeguarded military aviation assets in proximity to the Ossian Transmission Infrastructure Scoping Boundary include the RAF Air Weapons Ranges at Donna Nook, which is located approximately 10 km to the north, and Holbeach, which is located approximately 10 km to the east. RAF Coningsby also lies approximately 3 km to the west of the Ossian Transmission Infrastructure Scoping Boundary. It is considered that the nature of construction and operation of the Onshore Converter Stations is also unlikely to significantly affect operations at these safeguarded military aviation assets.

10.5.1.8 Taking the above information into account, and on the basis that significant adverse effects on any of the civil and military aviation and defence interests identified in NPS EN-1 are unlikely, it is proposed that aviation and radar is scoped out of the EIA process for the Ossian Transmission Infrastructure.

10.5.1.9 Notwithstanding this, if relevant, the design and layout of the Onshore Converter Stations will be informed through consultation that will take place with relevant stakeholders, including the CAA, NATS, aerodrome operators (where required) and the Defence Infrastructure Organisation. Feedback received as part of the consultation process will be used to ensure that the Ossian Transmission Infrastructure will comply with relevant regulations and guidance and does not interfere with the safe operation of any civil or military aviation and radar receptors.

10.6. Waste

10.6.1.1 Construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure will generate general waste, municipal and hazardous waste. Therefore, to reduce the environmental impact of waste and promote suitable waste management, the waste hierarchy approach will be adopted during each phase of the Ossian Transmission Infrastructure. A summary of the waste hierarchy approach is presented in **Figure 10.6.1** below, which has been taken from the Department for Environment, Food & Rural Affairs (Defra) Guidance on applying the Waste Hierarchy (Defra, 2011).

10.6.1.2 A Site Waste Management Plan will be prepared in accordance with the Outline Site Waste Management Plan, which will be submitted as part of the application for development consent for the Ossian Transmission Infrastructure. The Site Waste Management Plan will set out how waste generated during construction of the Onshore Transmission Infrastructure will be managed, including the safe, efficient and lawful disposal of site waste.

10.6.1.3 The Site Waste Management Plan will be prepared in accordance with the following legislation, policy and guidance, where applicable:

- Environmental Protection Act 1990;
- Environment Act 1995;
- Hazardous Waste (England and Wales) Regulations 2005;
- Waste Management (England and Wales) Regulations 2006;
- Waste (England and Wales) Regulations 2011; and
- The Environmental Permitting (England and Wales Regulations) 2016.

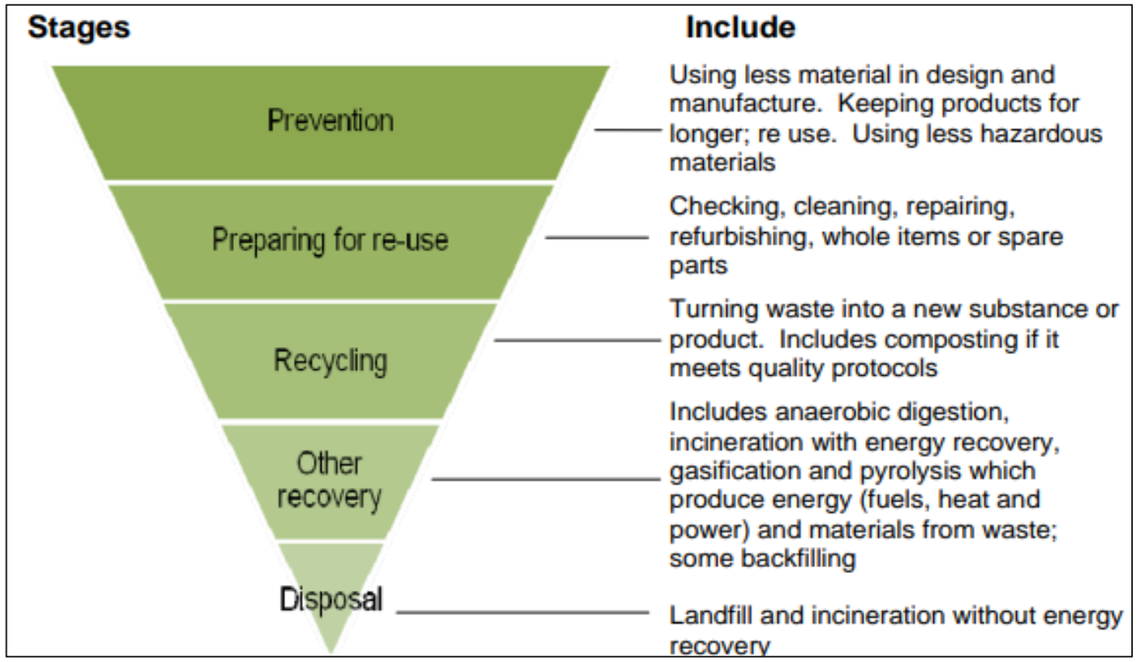

Figure 10.6.1: Waste Hierarchy (Defra, 2011)

10.6.1.4 The measures included in the Site Waste Management Plan will address the following aspects of waste management.

- Waste identification and segregation: the Site Waste Management Plan will identify the type and quantities of waste to be generated during construction of the Ossian Transmission Infrastructure and describe how these are to be separated to facilitate effective disposal and recycling.

- Waste reduction and management: the Site Waste Management Plan will include practices to minimise waste generation, such as using materials efficiently and avoiding over-ordering, and set out how each type of waste will be managed, including the re-use, recycling, recovery and disposal methods to be used.
- Compliance and training: the Site Waste Management Plan will ensure all waste management activities comply with relevant regulations and legal requirements and set out procedures for training workers on effective site waste management practices, including the importance of reducing waste.
- Environmental protection: the Site Waste Management Plan will set out measures required to avoid or reduce potential environmental impacts associated with construction waste, including the identification, storage and disposal of hazardous waste and maintaining a clean and organised site to prevent waste accumulation.
- Monitoring and reporting: the Site Waste Management Plan will establish the procedure for tracking waste management activities and reporting and non-compliance issues, including nomination of approved person(s) responsible for site waste management.
- Health and safety: the Site Waste Management Plan will address any health and safety concerns relating the handling and disposal of construction waste.

10.6.1.5 The measures to be included in the Site Waste Management Plan will ensure that waste generated during construction of the Ossian Transmission Infrastructure is kept to a minimum and does not result in unnecessary pressure on local waste management infrastructure, either alone or cumulatively with other nearby developments. The Site Waste Management Plan will also evaluate the current and future capacity of existing waste management facilities to determine if additional waste streams generated during construction of the Ossian Transmission Infrastructure can be accommodated.

10.6.1.6 As described in **section 4** of this EIA Scoping Report, the Ossian Transmission Infrastructure would be monitored remotely, with works required during the operation phase predominantly comprising repair and maintenance activities. Given the limited extent and short term nature of repair and maintenance activities, the quantity of waste generated during the operation and maintenance phase of the Onshore Transmission Infrastructure is anticipated to be low. Notwithstanding this, waste generated during operation and maintenance of the Ossian Transmission Infrastructure would be managed in a similar way to construction, including adherence to the waste hierarchy and measures set out in the Site Waste Management Plan. Operational waste would be segregated, recycled and disposed of in accordance with collection procedures as agreed by the relevant regulator.

10.6.1.7 With respect to decommissioning, waste would be managed in a similar way to construction waste, including adherence to the waste hierarchy and measures set out in the Site Waste Management Plan and Offshore Decommissioning Programme and Onshore Decommissioning Plan.

10.6.1.8 It is considered that, following the implementation of measures to be set out in the Site Waste Management Plan, Offshore Decommissioning Programme and Onshore Decommissioning Plan, waste generated during construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure is unlikely to result in significant adverse effects.

10.6.1.9 Taking the above information into account, and in the interests of supporting a proportionate EIA process, it is proposed that a standalone chapter in the ES addressing waste is not required.

10.7. Major Accidents and Disasters

10.7.1.1 The EIA Regulations require an assessment of the significant effects arising from the vulnerability of the Ossian Transmission Infrastructure to major accidents and disasters.

10.7.1.2 A description of how the risk of major accidents and disasters has been considered as part of the design of the Ossian Transmission Infrastructure will be provided in the project description chapter of the ES.

10.7.1.3 Where the Ossian Transmission Infrastructure coincides with either inner, middle and outer consultation zones for Major Accident Hazard Sites and Major Accident Hazard Pipelines, the Applicant will seek to consult the Health and Safety Executive and other relevant bodies, including pipeline operators.

10.7.1.4 In addition, the risk of major accidents and disasters to the physical, biological and human environment will also be considered within each topic chapter of the PEIR and ES, where relevant and will be clearly sign posted. A summary of the major accidents and disasters to be considered within the topic chapters of the PEIR and ES is provided in **Table 10.7.1** below.

Table 10.7.1: Major Accidents and Disasters Considered in Topic Chapters of PEIR and ES

Risk	Topic chapter of ES
Physical Environment	
Reduction in groundwater quality and quantity	Geology, hydrogeology and ground conditions (see **section 7.2** of this EIA Scoping Report)
Reduction in quality of surface water and watercourses	Hydrology and flood risk (see **section 7.3** of this EIA Scoping Report)
Increased flood risk	
Vulnerability to climate change	Climate change (see **section 8.3** of this EIA Scoping Report)
Biological Environment	
The risk of accidental pollution	Benthic subtidal and intertidal ecology (see **section 6.3** of this EIA Scoping Report)
	Fish and shellfish ecology (see **section 6.4** of this EIA Scoping Report)
	Marine mammals (see **section 6.5** of this EIA Scoping Report)

Risk	Topic chapter of ES
	Onshore ecology and nature conservation (see **section 7.4** of this EIA Scoping Report)
	Offshore ornithology (see **section 6.6** of this EIA Scoping Report)
	Onshore and intertidal ornithology (see **section 7.5** of this EIA Scoping Report)
Human environment	
Vessel to vessel collision risk (third party to third party or project vessel)	Shipping and navigation (see **section 6.8** of this EIA Scoping Report)
Reduction of under keel clearance	
Anchor interaction with subsea cables	
Increased snagging risk, with potential damage to gear	Commercial fisheries (see **section 6.7** of this EIA Scoping Report)
Construction traffic on accidents and safety of road users	Traffic and transport (see **section 6.8** of this EIA Scoping Report)
Abnormal Indivisible Loads on safety of road users	

10.7.1.5 Taking the above information into account, and in the interest of supporting a proportionate EIA process, it is proposed that a standalone chapter in the ES addressing major accidents and disasters is not required and is proposed to be scoped out of the EIA process for the Ossian Transmission Infrastructure.

10.8. Other Residues and Emissions

10.8.1.1 The potential impacts of residues and emissions, such as dust, pollutants, light, noise and vibration, generated during construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure will be considered within each topic chapter of the ES, where appropriate.

10.8.1.2 Injury and disturbance from noise generated by unexploded ordnance clearance has been discussed in **sections 6.3 and 6.4** of this EIA Scoping Report. It has been proposed that a quantitative assessment of this impact on receptors is consented under a separate Marine Licence (if required), with a qualitative assessment of this impact presented in the ES where appropriate to ensure a pragmatic holistic assessment of impacts is carried out.

10.8.1.3 A summary of the residues and emissions to be considered within the topic chapters of the PEIR and ES is provided in **Table 10.8.1**.

Table 10.8.1: Residues and Emissions Considered in Topic Chapters of PEIR and ES

Residue and emission	Topic chapter of PEIR and ES
Offshore Transmission Infrastructure	
Impacts of sediment releases	Physical processes (see **section** of this EIA Scoping Report)
Emissions to water, land or air and noise emissions on ecological receptors	Benthic subtidal and intertidal ecology (see **section 6.3** of this EIA Scoping Report)
	Fish and shellfish ecology (see **section 6.4** of this EIA Scoping Report)
	Marine mammals (see **section 6.5** of this EIA Scoping Report)
	Water quality (see **section 6.11** of this EIA Scoping Report)
	Offshore ornithology (see **section 6.6** of this EIA Scoping Report)
Onshore Transmission Infrastructure	
Emissions and residues to land on soil quality	Geology, hydrogeology and ground conditions (see **section 7.2** of this EIA Scoping Report)
Surface water runoff on water quality and flood risk	Hydrology and flood risk (see **section 7.3** of this EIA Scoping Report)
Emissions to water, land or air and noise emissions on ecological receptors	Onshore ecology and nature conservation (see **section 7.4** of this EIA Scoping Report)
	Onshore and intertidal ornithology (see **section 7.5** of this EIA Scoping Report)
Emissions of noise and vibration on human receptors	Noise and vibration (see **section 7.9** of this EIA Scoping Report)
Emissions to air, including dust and other pollutants	Air quality (see **section 7.10** of this EIA Scoping Report)
Light emissions	Landscape and visual resources (see **section 7.11** of this EIA Scoping Report)

10.8.1.4 Taking the above information into account, and in the interest of supporting proportionate EIA, it is proposed that a standalone chapter in the PEIR and subsequent ES addressing residues and emissions is not required and is proposed to be scoped out of the EIA process for the Ossian Transmission Infrastructure.

10.9. Material Assets

10.9.1.1 The EIA Regulations require consideration of 'material assets', including cultural heritage, architectural and archaeological aspects and landscape. The phrase 'material assets' has a broad scope, which may include an asset of human or natural origin, valued for heritage, landscape or socio-economic reasons.

10.9.1.2 As such, material assets will be considered across a range of topic areas within the PEIR and ES. For example, material assets will be considered in the following topic chapters of the PEIR and ES, where appropriate:

- Marine archaeology (see **section 6.9**);
- Commercial fisheries (see **section 6.7**);
- Shipping and navigation (see **section 6.8**);
- Infrastructure other sea users (see **section 6.10**);
- Historic environment (see **section 7.6**);
- Land use and recreation (see **section 7.7**);
- Landscape and visual resources (see **section 7.11)**; and
- Socio-economics (see **section 8.2**).

10.9.1.3 Taking the above information into account, and in the interest of supporting proportionate EIA, it is proposed that a standalone chapter in the PEIR and subsequent ES addressing material assets is not required and is proposed to be scoped out of the EIA process for the Ossian Transmission Infrastructure.

11. SUMMARY

11.1. Introduction

11.1.1.1 This EIA Scoping Report sets out the proposed scope of the EIA for the Ossian Transmission Infrastructure. For offshore and combined onshore/offshore topics, these impacts are proposed to be scoped in or out for both English and Scottish jurisdictions unless otherwise stated.

11.1.1.2 The topics proposed to be scoped into the EIA are identified in **section 6** for the offshore environment, **section 7** for the onshore environment and **section 8** for the offshore and onshore environment. This section provides a summary of the impacts proposed to be scoped in and out from these three sections of the EIA Scoping Report. This is followed by information about the next steps.

11.2. Impacts Proposed to be Scoped In and Scoped Out

11.2.1 Offshore Environment

11.2.1.1 **Table 11.1.1.1** summarises the impacts proposed to be scoped in for the offshore environment and **Table 11.1.1.2** summarises the impacts proposed to be scoped out of the offshore environment.

Table 11.2.1: Offshore Environment: Impacts Proposed to be Scoped In

Topic	Offshore: Impacts Proposed to be Scoped In
Physical Processes	**Construction** • Increased SSCs and associated deposition. • Impacts to seabed morphology. • Impacts to sediment transport and sediment transport pathways at Landfall.
	Operation and Maintenance • Increased SSCs and associated deposition. • Impacts to seabed morphology. • Impacts to sediment transport pathways due to the presence of the infrastructure. • Impacts to sediment transport and sediment transport pathways at Landfall.
	Decommissioning • Increased SSCs and associated deposition. • Impacts to seabed morphology.
	• Impacts to sediment transport and sediment transport pathways at Landfall.
Benthic and Intertidal Ecology	**Construction** • Temporary habitat loss/disturbance. • Increased SSCs and associated deposition. • Long term habitat loss. • Disturbance/remobilisation of sediment-bound contaminants. • Increased risk of introduction and spread of INNS.
	Operation and Maintenance • Long term habitat loss. • Disturbance/remobilisation of sediment-bound contaminants. • Colonisation of hard structures. • Increased risk of introduction and spread of INNS. • Changes in physical processes. • EMF from subsea electrical cabling.
	Decommissioning • Temporary habitat loss/disturbance. • Increased SSCs and associated deposition. • Long term habitat loss. • Disturbance/remobilisation of sediment-bound contaminants. • Increased risk of introduction and spread of INNS. • Removal of colonised hard structures.
Fish and Shellfish Ecology	**Construction** • Temporary habitat loss and disturbance of habitats (shellfish and marine species with a demersal life stage). • Underwater sound from pre-construction site investigation surveys and removal of infrastructure impacting fish and shellfish receptors. • Increased SSCs and associated sediment deposition. • Long-term habitat loss (shellfish and marine species with a demersal life stage). • Release of sediment-bound contaminants.
	Operation and Maintenance • Long-term habitat loss (shellfish and marine species with a demersal life stage). • Release of sediment-bound contaminants. • Colonisation of hard structures.

Topic	Offshore: Impacts Proposed to be Scoped In
	• EMF from subsea electrical cabling.
	Decommissioning • Temporary habitat loss and disturbance of habitats (shellfish and marine species with a demersal life stage). • Underwater sound from pre-construction site investigation surveys and removal of infrastructure impacting fish and shellfish receptors. • Increased SSCs and associated sediment deposition. • Long-term habitat loss (shellfish and marine species with a demersal life stage). • Release of sediment-bound contaminants.
Marine Mammals	**Construction** • Injury and disturbance from subsea noise generated during UXO clearance. • Disturbance due to geophysical surveys. • Disturbance due to vessel use and other activities. • Injury due to collision with vessels. • Effects on marine mammals due to altered prey availability.
	Operation and Maintenance • Disturbance due to geophysical surveys. • Disturbance due to vessel use and other activities. • Injury due to collision with vessels. • Effects on marine mammals due to altered prey availability.
	Decommissioning • Injury and disturbance from subsea noise generated during UXO clearance. • Disturbance due to geophysical surveys. • Disturbance due to vessel use and other activities. • Injury due to collision with vessels. • Effects on marine mammals due to altered prey availability.
Offshore Ornithology	**Construction** • Disturbance and displacement from airborne noise, underwater noise, and the presence of vessels. • Indirect impacts from underwater noise affecting prey species. • Indirect impacts from habitat loss or habitat disturbance which results in increased SSCs.
	Operation and Maintenance • Disturbance and displacement from airborne noise, underwater noise, and the presence of vessels. • Indirect impacts from habitat loss or habitat disturbance which results in increased SSCs.
	Decommissioning • Disturbance and displacement from airborne noise, underwater noise, and the presence of vessels. • Indirect impacts from underwater noise affecting prey species. • Indirect impacts from habitat loss or habitat disturbance which results in increased SSCs.
Commercial Fisheries	**Construction** • Temporary loss or restricted access to fishing grounds. • Displacement of fishing activity into other areas. • Interference with fishing activity. • Increased snagging risk, with potential damage to gear. • Increased steaming/vessel transit times. • Impacts to commercially exploited species populations.
	Operation and Maintenance • Temporary loss or restricted access to fishing grounds. • Displacement of fishing activity into other areas. • Interference with fishing activity. • Increased snagging risk, with potential damage to gear. • Increased steaming/vessel transit times. • Impacts to commercially exploited species populations.
	Decommissioning • Temporary loss or restricted access to fishing grounds. • Displacement of fishing activity into other areas. • Interference with fishing activity. • Increased snagging risk, with potential damage to gear. • Increased steaming/vessel transit times. • Impacts to commercially exploited species populations.
Shipping and Navigation	**Construction** • Increased vessel to vessel collision risk (third party to third party). • Increased vessel to vessel collision risk (third party to project vessel).

Topic	Offshore: Impacts Proposed to be Scoped In
	• Reduced access to local ports and harbours.
	Operation and Maintenance • Increased vessel to vessel collision risk (third party to third party). • Increased vessel to vessel collision risk (third party to project vessel). • Reduced access to local ports and harbours. • Reduction in under-keel clearance. • Anchor interaction with subsea cables. • Interference with navigation, communications, and position-fixing equipment.
	Decommissioning • Increased vessel to vessel collision risk (third party to third party). • Increased vessel to vessel collision risk (third party to project vessel). • Reduced access to local ports and harbours.
Marine Archaeology[1]	**Construction** • Increased SSC and deposition leading to indirect impacts on marine archaeology receptors in the marine archaeology study area. • Direct damage to marine archaeology receptors in the marine archaeology study area.
	Operation and Maintenance • Alteration of sediment transport regimes leading to indirect impacts on marine archaeology receptors in the marine archaeology study area.
	Decommissioning • Increased SSC and deposition leading to indirect impacts on marine archaeology receptors in the marine archaeology study area.
Other Sea Users	**Construction** • Displacement of recreational activities. • Increased SSCs and associated deposition affecting recreational diving sites and designated bathing water sites. • Impacts to existing cables or pipelines or restrictions on access to cables or pipelines. • Increased SSCs and associated deposition affecting aggregate extraction areas.

Topic	Offshore: Impacts Proposed to be Scoped In
	• Reduction or restriction of oil and gas exploration activities (including surveys, drilling and the placement of infrastructure).
	Operation and Maintenance • Displacement of recreational activities. • Increased SSCs and associated deposition affecting recreational diving sites and designated bathing water sites. • Impacts to existing cables or pipelines or restrictions on access to cables or pipelines. • Increased SSCs and associated deposition affecting aggregate extraction areas. • Reduction or restriction of oil and gas exploration activities (including surveys, drilling and the placement of infrastructure). • Alterations to sediment transport pathways affecting aggregate extraction areas.
	Decommissioning • Displacement of recreational activities. • Increased SSCs and associated deposition affecting recreational diving sites and designated bathing water sites. • Impacts to existing cables or pipelines or restrictions on access to cables or pipelines. • Increased SSCs and associated deposition affecting aggregate extraction areas. • Reduction or restriction of oil and gas exploration activities (including surveys, drilling and the placement of infrastructure).
Water Quality[1]	**Construction** • Increased SSC and associated deposition. • Release of contaminated sediments.
	Operation and Maintenance • Increased SSC and associated deposition. • Release of contaminated sediments. • Alteration of sediment transport and pathways due to infrastructure presence at the proposed Landfall.
	Decommissioning • Increased SSCs and associated deposition.

[1] Scoped in impacts for Marine Archaeology and Water Quality are in English waters only

Topic	Offshore: Impacts Proposed to be Scoped In
	• Release of contaminated sediments.

Table 11.2.2: Offshore Environment: Impacts Proposed to be Scoped Out

Topic	Offshore Impacts Proposed to be Scoped Out
Physical Processes	**Operation and Maintenance** • Temperature increase during the operation of the cable due to resistance in the cable.
Benthic and Intertidal Ecology	**Construction** • Thermal emissions from operational cables. • Accidental release of pollutants. • Colonisation of hard structures. • EMFs from subsea electrical cabling.
	Operation and Maintenance • Thermal emissions from operational cables. • Accidental release of pollutants. • Temporary habitat loss and disturbance of habitats. • Increased SSCs and associated sediment deposition.
	Decommissioning • Thermal emissions from operational cables. • Accidental release of pollutants. • EMFs from subsea electrical cabling.
Fish and Shellfish Ecology	**Construction** • Accidental release of pollutants. • Underwater sound from UXO clearance. • Underwater sound from vessels. • Thermal emissions from operational cables. • Long-term habitat loss (for species with fully pelagic lifecycles). • Increased SSCs and associated sediment deposition. • Colonisation of hard structures. • EMFs from subsea electrical cabling. • All impacts on basking shark.
	Operation and Maintenance • Accidental release of pollutants. • Underwater sound from UXO clearance.
	• Underwater sound from vessels. • Thermal emissions from operational cables. • Temporary habitat loss and disturbance of habitats (for species with fully pelagic lifecycles). • Long-term habitat loss (for species with fully pelagic lifecycles). • Underwater sound impacting fish and shellfish receptors. • Increased SSCs and associated sediment deposition. • All impacts on basking shark.
	Decommissioning • Accidental release of pollutants. • Underwater sound from UXO clearance. • Underwater sound from vessels. • Thermal emissions from operational cables. • Long-term habitat loss (for species with fully pelagic lifecycles during all phases). • EMFs from subsea electrical cabling. • All impacts on basking shark.
Marine Mammals	There are no impacts proposed to be scoped out of the assessment for marine mammals.
Offshore Ornithology	**Construction** • Impacts due to the accidental release of pollutants. • Injury due to collision with infrastructure or vessels. • Barriers to movement.
	Operation and Maintenance • Impacts due to the accidental release of pollutants. • Injury due to collision with infrastructure or vessels. • Barriers to movement.
	Decommissioning • Impacts due to the accidental release of pollutants. • Injury due to collision with infrastructure or vessels. • Barriers to movement.
Commercial Fisheries	**Construction** • Long term loss of fishing grounds.

Topic	Offshore Impacts Proposed to be Scoped Out
	Operation and Maintenance • Long term loss of fishing grounds.
	Decommissioning • Long term loss of fishing grounds.
Shipping and Navigation	There are no impacts proposed to be scoped out of the assessment for shipping and navigation.
Marine Archaeology	**Construction** • Alteration of sediment transport regimes leading to indirect impacts on marine archaeology receptors in the marine archaeology study area (English waters). • All impacts within the marine archaeology study area in Scottish waters.
	Operation and Maintenance • Increased SSCs and associated sediment deposition leading to indirect impacts on marine archaeology receptors in the marine archaeology study area (English waters). • Direct damage to maritime archaeology receptors in the marine archaeology study area (English waters). • All impacts within the marine archaeology study area in Scottish waters.
	Decommissioning • Direct damage to maritime archaeology receptors in the marine archaeology study area (English waters). • Alteration of sediment transport regimes leading to indirect impacts on marine archaeology receptors in the marine archaeology study area (English waters). • All impacts within the marine archaeology study area in Scottish waters.
Other Sea Users	**Construction** • Interference with offshore microwave fixed communication links. • Interference with PEXAs.
	Operation and Maintenance: • Interference with offshore microwave fixed communication links. • Interference with Military PEXAs.
	Decommissioning • Interference with offshore microwave fixed communication links. • Interference with Military PEXAs.
Water Quality	**Construction** • Impact on sediment transport and pathways due to infrastructure presence within the water column (English waters). • Risk of introduction and spread of INNS (English waters). • Risk of accidental pollution (English waters). • Impact on bathing water quality (English waters). • Impact on achievement of GES (English waters). • All impacts within the water quality study area in Scottish waters.
	Operation and Maintenance • Impacts on sediment transport and pathways due to infrastructure presence within the water column (English waters). • Risk of introduction and spread of INNS (English waters). • Risk of accidental pollution (English waters). • Impact on bathing water quality (English waters). • Impact on achievement of GES (English waters). • All impacts within the water quality study area in Scottish waters.
	Decommissioning • Impacts on sediment transport and pathways due to infrastructure presence within the water column (English waters). • Risk of introduction and spread of INNS (English waters). • Risk of accidental pollution (English waters). • Impact on bathing water quality (English waters). • Impact on achievement of GES (English waters). • All impacts within the water quality study area in Scottish waters.

11.2.2 Onshore Environment

11.2.2.1 **Table 11.1.1.3** summarises the impacts proposed to be scoped in for the onshore environment and **Table 11.1.1.4** summarises the impacts proposed to be scoped out of the onshore environment.

Table 11.2.3: Onshore Environment: Impacts Proposed to be Scoped In

Topic	Onshore Impacts Proposed to be Scoped In
Geology, Hydrogeology and Ground Conditions	**Construction** • Loss or partial loss/damage to designated geological sites. • Mobilisation of any existing areas of contamination causing a deterioration of groundwater quality in underlying aquifer units. • Mobilisation of any existing contamination on off-site human receptors. • Changes in groundwater levels, flow or quality on other sensitive groundwater dependent sites and groundwater abstractions. • Creation of preferential contaminant pathways to groundwater resources. • Sterilisation of safeguarded mineral reserves.
	Operation and Maintenance • Ingress and accumulation of ground gases within buildings which may cause asphyxiation/ explosive risks.
	Decommissioning • Mobilisation of any existing areas of contamination causing a deterioration of groundwater quality in underlying aquifer units or contamination to off-site human receptors.
Hydrology and Flood Risk	**Construction** • The impact of increased flood risk arising from surface water runoff. • The impact of increased flood risk arising from watercourse crossings. • The impact of increased flood risk arising from damage to existing flood defences (where present/relevant). • The impact of increased flood risk arising from a watercourse diversion (if such diversions are required) (Onshore Converter Stations).
	Operation and Maintenance • The impact of increased flood risk arising from surface water runoff during operation on the Onshore Converter Stations.
	Decommissioning • There are no impacts proposed to be scoped in to the assessment for hydrology and flood risk for decommissioning.
Onshore Ecology and Nature Conservation	**Construction** • Damage to designated sites. • Damage to UK priority habitats and ancient woodlands. • Permanent habitat loss. • Temporary habitat loss. • Killing, injury and disturbance to protected species. • Fragmentation of habitats supporting protected and notable species. • Noise and visual disturbance to sensitive ecological receptors. • Changes in air quality affecting important ecological features. • Changes in hydrology affecting important ecological features.
	Operation and Maintenance • Noise and visual disturbance to sensitive ecological receptors during operation and maintenance of the Onshore Converter Stations.
	Decommissioning • Damage to designated sites. • Damage to UK priority habitats and ancient woodlands. • Permanent habitat loss. • Temporary habitat loss. • Killing, injury and disturbance to protected species. • Fragmentation of habitats supporting protected and notable species. • Noise and visual disturbance to sensitive ecological receptors. • Changes in air quality affecting important ecological features. • Changes in hydrology affecting important ecological features.
Onshore and Intertidal Ornithology	**Construction** • The impact of temporary loss of supporting habitats and/or resource availability and associated displacement. • The impact of permanent loss of supporting habitats and/or resource availability. • Disturbance from construction activities.
	Operation and Maintenance • Disturbance and displacement from operation and maintenance activities at Landfall (if required).
	Decommissioning • The impact of temporary loss of supporting habitats and/or resource availability. • Disturbance and displacement from decommissioning activities.
Historic Environment	**Construction** • Direct physical impacts:

Topic	Onshore Impacts Proposed to be Scoped In
	– Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and/or palaeoenvironmental interest. – Loss of, or harm to, elements of the historic landscape. • Direct non-physical impacts: – Harm to the significance of designated and non-designated heritage assets as a result of change within their setting. – Harm to the character of the historic landscape.
	Operation and Maintenance • Direct non-physical impacts: – Harm to the significance of designated and non-designated heritage assets as a result of change within their setting resulting from the Onshore Converter Stations. – Harm to the character of the historic landscape resulting from the operation and maintenance of the Onshore Converter Stations.
	Decommissioning • Direct non-physical impacts: – Harm to the significance of designated and non-designated heritage assets as a result of change within their setting. – Harm to the character of the historic landscape.
Land Use and Recreation	**Construction** • Temporary loss of agricultural land, including BMV land. • Temporary impacts on peat resources (where present). • Permanent loss of agricultural land, including BMV land. • Permanent loss of peat resources (if present). • Temporary disruption to the operation of farm holdings. • Permanent disruption to the operation of farm holdings. • Temporary reduction in access to PRoW and other promoted routes. • Permanent reduction in access to PRoW and other promoted routes. • Temporary reduction in access to registered common land and public open space. • Permanent reduction in access to registered common land and public open space. • Temporary reduction in access to other recreational resources (e.g. golf courses, sport facilities etc). • Permanent reduction in access to other recreational resources (e.g. golf courses, sport facilities etc).

Topic	Onshore Impacts Proposed to be Scoped In
	Operation and Maintenance • There are no impacts proposed to be scoped in to the assessment for land use and recreation for operation and maintenance.
	Decommissioning • Temporary loss of agricultural land, including BMV land. • Temporary impacts on peat resources (where present). • Permanent loss of agricultural land, including BMV land. • Permanent loss of peat resources (if present). • Temporary disruption to the operation of farm holdings. • Permanent disruption to the operation of farm holdings. • Temporary reduction in access to PRoW and other promoted routes. • Permanent reduction in access to PRoW and other promoted routes. • Temporary reduction in access to registered common land and public open space. • Permanent reduction in access to registered common land and public open space. • Temporary reduction in access to other recreational resources (e.g. golf courses, sport facilities etc). • Permanent reduction in access to other recreational resources (e.g. golf courses, sport facilities etc).
Traffic and Transport	**Construction** • The impact upon driver (including public transport) and non-motorised user delay and fear and intimidation (non-motorised user amenity) for users of the highway network resulting from increases in traffic flows. • The impact upon severance for users of the highway network resulting from increases in traffic flows. • The impact upon road safety for users of the highway network and other transport receptors resulting from increases in traffic flows. • The impact upon the safety of users of the highway network and other transport receptors resulting from AILs.
	Operation and Maintenance • There are no impacts proposed to be scoped in to the assessment for traffic and transport for operation and maintenance.
	Decommissioning • There are no impacts proposed to be scoped in to the assessment for traffic and transport for decommissioning.

Topic	Onshore Impacts Proposed to be Scoped In
Noise and Vibration	**Construction** • The impact of noise and vibration on human receptors. • The impact of noise generated by additional vehicle movements on the local highway network on human receptors.
	Operation and Maintenance • The impact of noise generated during the operation and maintenance of the Onshore Converter Stations on human and ecological receptors.
	Decommissioning • The impact of noise and vibration on human receptors. • The impact of noise generated by additional vehicle movements on the local highway network on human receptors.
Air Quality	**Construction** • The impact of dust soiling (nuisance) on property arising from dust emissions. • The impact of increases in suspended particulate matter on human receptors arising from dust emissions. • The impact on human receptors arising from air emissions generated by vehicles. • The impact on ecological receptors arising from dust emissions. • The impact on ecological receptors arising from air emissions generated by vehicles.
	Operation and Maintenance • The impact on human health and ecological receptors from air emissions generated by the back-up diesel generators at the Onshore Converter Stations.
	Decommissioning • The impact of dust soiling (nuisance) on property arising from dust emissions. • The impact of increases in suspended particulate matter on human receptors arising from dust emissions. • The impact on human receptors arising from air emissions generated by vehicles. • The impact on ecological receptors arising from dust emissions. • The impact on ecological receptors arising from air emissions generated by vehicles.

Topic	Onshore Impacts Proposed to be Scoped In
Landscape and Visual Resources	**Construction** • The temporary impact on landscape elements and character. • The temporary impact on visual amenity.
	Operation and Maintenance • The permanent impact of the Onshore Converter Stations on landscape elements and character. • The permanent impact of the Onshore Converter Stations on visual amenity.
	Decommissioning • The temporary impact of the Onshore Converter Stations on landscape elements and character. • The temporary impact of the Onshore Converter Stations on visual amenity.
Health and Wellbeing	**Construction** • Social environment: – The impact on transport modes, access and connections. – The impact on open space, leisure and play. • Economic environment: – The impact on employment and income. • Bio physical environment: – The impact on air quality. – The impact of noise and vibration.
	Operation and Maintenance • Social environment: – The impact on community identity (associated with the Onshore Converter Stations). • Bio physical environment: – The impact of noise and vibration (associated with the Onshore Converter Stations). – The impact associated with the understanding of risks associated with EMF. • Institutional and built environment: – The impact on wider societal infrastructure.
	Decommissioning • There are no impacts proposed to be scoped in to the assessment for health and wellbeing for decommissioning.

Table 11.2.4: Onshore Environment: Impacts Proposed to be Scoped Out

Topic	Onshore Impacts Proposed to be Scoped Out
Geology, Hydrogeology and Ground Conditions	**Construction** • Land instability and geohazards as a result of earthworks on end users, buildings and infrastructure. • The impact of ground contamination on construction workers. • Potential introduction of contaminants through the use and refuelling of construction plant, and the handling of construction material and wastes on human health and the environment. • Storage of materials and wastes leading to the generation of potentially contaminated runoff on human health and the environment. • Discovery and disturbance of unforeseen contamination (e.g. earthwork operations, excavations and soil stripping) on human health and the environment.
	Operation and Maintenance • Accidental spills/pollution into the environment (e.g. uncontrolled leaks, spills from machinery at the Onshore Converter Stations). • Heat generated by the Onshore Export Cables on groundwater quality. • Existing ground contamination on end users and buildings.
	Decommissioning • Land instability and geohazards as a result of earthworks on end users, buildings and infrastructure. • The impact of ground contamination on construction workers. • Potential introduction of contaminants through the use and refuelling of construction plant, and the handling of construction material and wastes on human health and the environment. • Storage of materials and wastes leading to the generation of potentially contaminated runoff on human health and the environment. • Discovery and disturbance of unforeseen contamination (e.g. earthwork operations, excavations and soil stripping) on human health and the environment.
Hydrology and Flood Risk	**Construction** • The impact of damage to existing water supply, drainage infrastructure and agricultural field drainage. • The impact of contaminated runoff (including accidental spillages and leakages of oils, fuel and other polluting substances) on the quality of surface water receptors. • The impact on water resources.
	Operation and Maintenance • The impact of increased flood risk arising from additional surface water runoff associated with the Onshore Export Cables and Landfall. • The impact of increased flood risk arising from watercourse crossings, watercourse diversions or impacts on flood defences. • The impact of contaminated runoff on the quality of surface water. • The impact of damage to agricultural field drainage, existing water supply and drainage infrastructure. • The impact on water resources.
	Decommissioning • The impact of increased flood risk arising from additional surface water runoff. • The impact of increased flood risk arising from watercourse crossings, watercourse diversions or impacts on flood defences. • The impact of damage to agricultural field drainage, existing water supply and drainage infrastructure. • The impact of contaminated runoff on the quality of surface water and ground receptors. • The impact on water resources.
Onshore Ecology and Nature Conservation	**Construction** • Changes in water quality arising from accidental spills.
	Operation and Maintenance • Damage to designated sites. • Damage to UK Priority habitats and ancient woodlands. • Permanent habitat loss. • Temporary habitat loss. • Killing and injury to protected species. • Permanent and temporary loss of habitat and fragmentation of habitats supporting protected and notable species. • Changes in air quality affecting important ecological features. • Changes in water quality affecting important ecological features. • Changes in hydrology affecting important ecological features. • Noise and visual disturbance to sensitive ecological receptors arising from operation and maintenance of the Landfall and Onshore Export Cables.

Topic	Onshore Impacts Proposed to be Scoped Out
	Decommissioning • There are no impacts proposed to be scoped out of the assessment for onshore ecology and nature conservation for decommissioning.
Onshore and Intertidal Ornithology	**Construction** • The impact of pollution caused by accidental spills/contaminant release on protected habitats and species.
	Operation and Maintenance • The impact of permanent loss of supporting habitats. • The impact of pollution caused by accidental spills/contaminant release on protected habitats and species. • Disturbance and displacement.
	Decommissioning • The impact of permanent loss of supporting habitats. • The impact of pollution caused by accidental spills/contaminant release on protected habitats and species.
Historic Environment	**Construction** • Direct non-physical impacts. Harm to the significance of designated and non-designated heritage assets as a result of change within their setting for assets located further than 1 km from the edge of the Landfall and Onshore Export Cable Corridor (i.e. outside the study area). • Direct non-physical impacts. Harm to the significance of designated heritage assets as a result of change within their setting for assets located further than 5 km from any Onshore Converter Station (i.e. outside the study area).
	Operation and Maintenance • Direct physical impacts. Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and/ or palaeoenvironmental interest. • Direct non-physical impacts. Harm to the significance of designated heritage assets as a result of change within their setting for assets located further than 5 km from any Onshore Converter Station. • Direct non-physical impacts. Harm to the significance of designated and non-designated heritage assets as a result of change within their setting other than designated heritage assets located less than 5 km from any Onshore Converter Station.

Topic	Onshore Impacts Proposed to be Scoped Out
	Decommissioning • There are no impacts proposed to be scoped out of the assessment for historic environment for decommissioning.
Land use and Recreation	**Construction** • There are no impacts proposed to be scoped out of the assessment for land use and recreation for construction.
	Operation and Maintenance • Temporary and permanent loss of agricultural land, including BMV land. • Temporary and permanent disruption to the operation of farm holdings. • Temporary and permanent reduction in access to PRoW and other promoted routes. • Temporary and permanent reduction in access to registered common land and public open space. • Temporary and permanent reduction in access to other recreational resources (e.g. golf courses, sport facilities etc).
	Decommissioning • There are no impacts proposed to be scoped out of the assessment for land use and recreation for decommissioning.
Traffic and Transport	**Construction** • There are no impacts proposed to be scoped out of the assessment for traffic and transport for construction.
	Operation and Maintenance • The impact upon driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance and road safety for users of the highway network and other transport receptors resulting from increases in traffic flows.
	Decommissioning • The impact upon driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance and road safety for users of the highway network and other transport receptors resulting from increases in traffic flows.
Noise and Vibration	**Construction** • The impact on human receptors arising from vibration generated by additional vehicle movements on the local highway network.

Topic	Onshore Impacts Proposed to be Scoped Out
	• The impact on human receptors (onshore) of noise and vibration generated during the construction of the Offshore Transmission Infrastructure.
	Operation and Maintenance • The impact on human receptors arising from vibration. • The impact on human receptors of noise and vibration generated by the Landfall and Onshore Export Cables. • The impact on human receptors of noise from the Onshore Converter Stations switchgear and auxiliary plant.
	Decommissioning • The impact on human receptors arising from vibration generated by additional vehicle movements on the local highway network.
Air Quality	**Construction** • The impacts on AQMAs. • The impacts within the Intertidal Scoping Boundary. • The impact on human and ecological receptors arising from air emissions generated by NRMM.
	Operation and Maintenance • The impacts on AQMAs. • The impacts within the Intertidal Scoping Boundary. • The impact on human and ecological receptors (dust soiling and human health) arising from fugitive dust emissions. • The impact on human and ecological receptors arising from air emissions generated by vehicle traffic. • The impact on human and ecological receptors arising from air emissions generated by plants or stacks during operation and maintenance of the Landfall and Onshore Export Cables.
	Decommissioning • The impacts on AQMAs. • The impacts within the Intertidal Scoping Boundary.
Landscape and Visual Resources	**Construction** • The impact of the Offshore Transmission Infrastructure on landscape and seascape character and visual resources. • The impact on landscape and seascape character and visual resources located beyond the landscape and visual study area.
	Operation and Maintenance • The impact of the Offshore Transmission Infrastructure on landscape and seascape character and visual resources. • The impact on landscape and seascape character and visual resources located beyond the landscape and visual study area. • The impact of the Landfall and Onshore Export Cables on landscape and visual resources.
	Decommissioning • The impact of the Offshore Transmission Infrastructure on landscape and seascape character and visual resources. • The impact on landscape and seascape character and visual resources located beyond the landscape and visual study area. • The impact of the Landfall and Onshore Export Cables on landscape character and visual resources.
Health and Wellbeing	**Construction** • Health related behaviours: – The impact on physical activity. – The impact on risk-taking behaviour. – The impact on diet and nutrition. • Social environment: – The impact on housing – The impact on community identity, culture, resilience and influence. – The impact of relocation. – The impact on community safety. – The impact on social participation, interaction and support. • Economic environment: – The impact on education and training. – The impact on employment and income. • Bio physical environment: – The impact associated with climate change and adaptation. – The impact on air quality. – The impact on water quality or availability. – The impact on land quality. – The impact of radiation. • Institutional and built environment: – The impact on health and social care services. – The impact on the built environment • Offshore Transmission Infrastructure:

Topic	Onshore Impacts Proposed to be Scoped Out
	– All health determinants.
	Operation and Maintenance • Health related behaviours: – The impact on physical activity. – The impact on risk-taking behaviour. – The impact on diet and nutrition. • Social environment: – The impact on housing. – The impact on community identity, culture, resilience and influence. – The impact of relocation. – The impact on open space, leisure and play. – The impact on transport modes, access and connections. – The impact on community safety. – The impact on social participation, interaction and support. • Economic environment: – The impact on education and training. – The impact on employment and income. • Bio physical environment: – The impact associated with climate change and adaptation. – The impact on air quality. – The impact on water quality or availability. – The impact on land quality. – The impact of radiation. • Institutional and built environment – The impact on health and social care services. – The impact on the built environment. • Offshore Transmission Infrastructure: – All health determinants.
	Decommissioning • All health determinants including Offshore Transmission Infrastructure.

11.2.3 Offshore and Onshore Environment

11.2.3.1 **Table 11.1.1.5** summarises the impacts proposed to be scoped in for the offshore and onshore environment and **Table 11.1.1.6** summarises the impacts proposed to be scoped out of the offshore and onshore environment.

Table 11.2.5 Offshore and Onshore Impacts Proposed to be Scoped In

Topic	Offshore and Onshore: Impacts Proposed to be Scoped In
Socio-economics	**Construction** • Increase in employment and GVA. • Changes to visitor behaviour. • Changes to commercial fisheries. • Changes to shipping and marine recreation.
	Operation and Maintenance • Increase in employment and GVA. • Changes to visitor behaviour.
	Decommissioning • Increase in employment and GVA. • Changes to visitor behaviour. • Changes to commercial fisheries. • Changes to shipping and marine recreation.
Climate Change	**Construction** • The impact of GHG emissions arising from the manufacturing and installation of the Ossian Transmission Infrastructure. • The impact of GHG emissions arising from land and seabed use change.
	Operation and Maintenance • The impact of climate change on the Ossian Transmission Infrastructure.
	Net Whole Life Effects • Net whole life GHG emissions and context across all stages. • Cumulative net whole life GHG emissions for Ossian.

Table 11.2.6: Offshore and Onshore Impacts Proposed to be Scoped Out

Topic	Offshore and Onshore Impacts Proposed to be Scoped Out
Socio-economics	**Construction** • Demographic changes. • Changes to housing demand. • Changes to other local public and private services. • Socio-cultural impacts.

Topic	Offshore and Onshore Impacts Proposed to be Scoped Out
	Operation and Maintenance • Demographic changes. • Changes to housing demand. • Changes to other local public and private services. • Changes to commercial fisheries. • Changes to shipping and marine recreation. • Socio-cultural impacts.
	Decommissioning • Demographic changes. • Changes to housing demand. • Changes to other local public and private services. • Socio-cultural impacts.
Climate Change	**Construction** • The impact of climate change on the Ossian Transmission Infrastructure. • The impact of disposal of waste.
	Operation and Maintenance • The impact of GHG emissions arising from land and seabed use change. • The impact of GHG emissions arising from the consumption of materials and activities required to facilitate the operation and maintenance phase.
	Decommissioning • The impact of climate change on the Ossian Transmission Infrastructure. • The impact of GHG emissions arising from land and seabed use change. • The impact of GHG emissions.
	• In-combination climate change effects.

11.3. Next steps

11.3.1.1 Consultees are invited to consider the information presented in this EIA Scoping Report and advise on whether or not they agree with the proposed scope.

11.3.1.2 Following receipt of the Scoping Opinion, a PEIR will be prepared and consulted on. The PEIR will provide the preliminary findings of the EIA work undertaken to date for the Ossian Transmission Infrastructure. The PEIR is intended to allow statutory consultees, local communities and interested parties to understand the nature, scale, location and likely significant effects of the Ossian Transmission Infrastructure to enable an informed contribution to the process of pre-application consultation under the Planning Act 2008 and to the EIA process itself.

11.3.1.3 Further refinements may be made to the Ossian Transmission Infrastructure based on the consultation responses received from the pre-application consultation as well as in response to emerging findings from the ongoing EIA process. The final results of the EIA will be presented in an ES that will accompany the application for development consent and a Marine Licence for the Ossian Transmission Infrastructure.

12. REFERENCES

12.1. Part 1

BEIS and Prime Minister's Office (2022) British Energy Security Strategy. Available at: British energy security strategy - GOV.UK (www.gov.uk). Accessed: October 2024.

Centre for Environment, Fisheries and Aquaculture Science (Cefas) (2012) Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects. Report reference: ME5403 – Module 15.

CES (2021) ScotWind Leasing: Seabed leasing for new offshore wind farms - Guidance Notes April 2021. Available at: https://www.crownestatescotland.com/sites/default/files/2023-07/scotwind-leasing-guidance-notes-april-2021.pdf. Accessed on: 12 March 2024.

CIEEM (2019). Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. September 2018 Version 1.1 - updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.

Climate Change Committee (2011) The Renewable Energy Review. Available at: https://www.theccc.org.uk/wp-content/uploads/2011/05/The-renewable-energy-review_Printout.pdf. Accessed: October 2024.

Climate Change Committee (2020) The Sixth Carbon Budget – The UK's Path to Net Zero, December 2020. Available at: The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf (theccc.org.uk). Accessed: October 2024.

Defra (2011) Marine Policy Statement. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf. Accessed: October 2024.

Defra (2012) Habitats Regulations: Evidence Plans for Nationally Significant Infrastructure Projects.

Department for Energy Security and Net Zero (2023a) Overarching National Policy Statement for Energy (NPS EN-1). Available at: Overarching National Policy Statement for energy (EN-1) - GOV.UK Accessed November 2024.

Department for Energy Security and Net Zero (2023b) National Policy Statement for renewable energy infrastructure (NPS EN-3). Available at: National Policy Statement for renewable energy infrastructure (EN-3) - GOV.UK. Accessed November 2024.

Department for Energy Security and Net Zero (2023c) National Policy Statements for Electricity Networks Infrastructure (NPS EN-5). Available at: National Policy Statement for electricity networks infrastructure (EN-5) - GOV.UK. Accessed November 2024.

Department for Energy Security and Net Zero (2024) Great British Energy Founding Statement. Available at: https://www.gov.uk/government/publications/introducing-great-british-energy Accessed October 2024.

Department for Energy Security and Net Zero and Ofgem (2023) Connections Action Plan – Speeding up connections to the electricity network across Great Britain. Available at: Electricity networks: connections action plan - GOV.UK Accessed October 2023.

Department for Levelling Up, Housing and Communities (2023) Operational reforms to the Nationally Significant Infrastructure Project consenting process. Available at: Operational reforms to the Nationally Significant Infrastructure Project (NSIP) consenting process - GOV.UK (www.gov.uk) Accessed October 2024.

Department for Levelling Up, Housing and Communities (2024) Operational reforms to the Nationally Significant Infrastructure Project consenting process: government response. Available at: Operational reforms to the Nationally Significant Infrastructure Projects consenting process: government response - GOV.UK Accessed November 2024.

East Lindsay District Council (2018) East Lindsay Local Plan Core Strategy, Adopted July 2018. Available at: Adopted Local Plan 2018 - East Lindsey District Council Accessed November 2024.

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020) Design Manual for Roads and Bridges (DMRB) LA 104, Environmental assessment and monitoring, Revision 1. Available: LA 104 - Environmental assessment and monitoring (standardsforhighways.co.uk) Accessed October 2024.

HM Government (2017) The Clean Growth Strategy – Leading the way to a low carbon future. Available at: Clean Growth Strategy (publishing.service.gov.uk). Accessed: February 2023.

HM Government (2020a) Offshore Wind Sector Deal. Available at: https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal. Accessed: October 2024.

HM Government (2020b) Offshore Wind Sector Deal – one year on. Available at: https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal-one-year-on. Accessed: October 2024.

HM Government (2020c) The Ten Point Plan for a Green Industrial Revolution. Building back better, supporting green jobs, and accelerating our path to net zero. Available at: The Ten Point Plan for a Green Industrial Revolution (publishing.service.gov.uk). Accessed: October 2024.

HM Government (2020d) Energy White Paper: Powering out net zero future. Available at: Energy White Paper (publishing.service.gov.uk). Accessed: October 2024.

HM Government (2021a) Net Zero Strategy: Build Back Greener. Available at: net-zero-strategy-beis.pdf (publishing.service.gov.uk). Accessed: October 2024.

HM Government (2021b) North West Inshore and North West Offshore Marine Plan. Available at: North West Inshore and North West Offshore Marine Plan (publishing.service.gov.uk). Accessed: October 2024.

HM Government (2022) United Kingdom of Great Britain and Northern Ireland's Nationally Determined Contribution. Presented to Parliament by the Secretary of State

for Business, Energy, and Industrial Strategy by Command of His Majesty, September 2022. Available at:https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1109429/uk-nationally-determined-contribution.pdf Accessed October 2024.

HM Government (2023) Powering Up Britain: Net Zero Growth Plan. Available at: Powering Up Britain: Net Zero Growth Plan - GOV.UK (www.gov.uk). Accessed October 2024.

HM Treasury (2020) National Infrastructure Strategy: Fairer, faster, greener. Available at: CP 329 – National Infrastructure Strategy – Fairer, faster, greener – November 2020 (publishing.service.gov.uk). Accessed: October 2024.

IEMA (2004) Guidelines for Environmental Impact Assessment. IEMA, Lincoln.

IEMA (2015) Environmental Impact Assessment Guide to: Shaping Quality Development.

IEMA (2016) Environmental Impact Assessment Guide to: Delivering Quality Development. IEMA, Lincoln.

IEMA (2017) Delivering Proportionate EIA - A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice. IEMA, Lincoln.

IEMA (2023) Effective Non-technical Summaries for Environmental Impact Assessment. IEMA, Lincoln.

Intergovernmental Panel on Climate Change (IPCC) (2007): Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge.

Lincolnshire County Council (2016) Lincolnshire Minerals and Waste Local Plan: Core Strategy and Development Management Policies, Available at: Minerals and waste – Lincolnshire County Council Accessed November 2024.

Lincolnshire County Council (2023) Energy Infrastructure Position. Available at: https://lincolnshire.moderngov.co.uk/documents/s60096/Energy%20Infrastructure%20Position.pdf Accessed November 2023.

Marine Scotland (2015a) Scotland's National Marine Plan: A Single Framework for Managing Our Seas. Available: Supporting documents - Scotland's National Marine Plan - gov.scot Accessed November 2024.

Marine Scotland (2015b) Guidance for Marine Licence Applicants, version 2 June 2015. Available at: Marine licensing: applications and guidance - gov.scot Accessed November 2024.

Marine Scotland (2018) Marine Scotland Consenting and Licensing Guidance For Offshore Wind Wave and Tidal Energy Applications. Available at: Offshore wind, wave and tidal energy applications: consenting and licensing manual - gov.scot Accessed November 2024.

MarLIN (Marine Life Information Network) (2020). Marine Life Information Network. Plymouth: Marine Biological Association of the United Kingdom. Available from: www.marlin.ac.uk. Accessed on: 26 November 2024.

Met Office Hadley Centre (2018). UK Climate Projections UKCP18 [Online]. Available at: https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index (Accessed: November 2024).

Ministry of Housing, Communities and Local Government (2024) Proposed reforms to the National Planning Policy Framework and other changes to the planning system. Available at: Proposed reforms to the National Planning Policy Framework and other changes to the planning system - GOV.UK (www.gov.uk) Accessed October 2024.

Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities (2024) National Planning Policy Framework. Available at: National Planning Policy Framework - GOV.UK Accessed: October 2024.

Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities (2024) Planning Practice Guidance. Available at: Planning practice guidance - GOV.UK (www.gov.uk) Accessed October 2024.

NGESO (2024) Beyond 2030: A national blueprint for a decarbonised electricity system in Great Britain. Available at: Beyond 2030 | National Energy System Operator Accessed November 2024.

NGET (2024) Grimsby to Walpole New Walpole Substation Location Options Report. January 2024. Available at: Grimsby to Walpole | National Grid ET Accessed December 2024.

NIC (2018) National Infrastructure Assessment, July 2018. Available at: National Infrastructure Assessment (nic.org.uk). Accessed: October 2024.

NIC (2020) Net Zero: Opportunities for the power sector. Available at: Net-Zero-6-March-2020.pdf (nic.org.uk). Accessed: October 2024.

NIC (2021) The Second National Infrastructure Assessment: Baseline Report, November 2021. Available at: Revised-Second-National-Infrastructure-Assessment-Baseline-Report.pdf (nic.org.uk). Accessed: February 2023. Second National Infrastructure Assessment - NIC. Accessed October 2024.

Ossian OWFL (2024). Ossian Array EIA Report. Available at: https://ossian-eia.com/. Accessed: November 2024.

Planning Inspectorate (2012. Nationally Significant Infrastructure Projects - Advice on working with public bodies in the infrastructure planning process Annexes. [online] GOV.UK. Available at: https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-eleven-working-with-public-bodies-in-the-infrastructure-planning-process Accessed 29 Oct. 2024.

Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope (Planning Inspectorate, 2018). Available at: Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2020) Nationally Significant Infrastructure Projects: Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. Available at: Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024a) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024b) Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Processes. Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024c) Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments. Available at: Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024d) Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive. Available at: Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024e) Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation. Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024f) Nationally Significant Infrastructure Projects: Commitments Register. Available at: Nationally Significant Infrastructure Projects: Commitments Register - GOV.UK (www.gov.uk) Accessed October 2024.

Planning Inspectorate (2024g) Nationally Significant Infrastructure Projects: Advice on Good Design. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-good-design#environmental-impact-assessment-eia-and-good-design Accessed November 2024.

Planning Inspectorate (2024h) Nationally Significant Infrastructure Projects: Advice on the Consultation Report. Available at: Nationally Significant Infrastructure Projects: Advice on the Consultation Report - GOV.UK Accessed October 2024.

Planning Inspectorate (2024i) Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects. Available at: Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects - GOV.UK Accessed November 2024.

Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents. Available at: Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents - GOV.UK (www.gov.uk) Accessed October 2024.

RenewableUK (2013) Cumulative Impact Assessment Guidelines: Guiding Principles for Cumulative Impact Assessment in Offshore Wind Farms.

Scottish Government (2017) Scottish Energy Scotland: The future of energy in Scotland. Available at: https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/. Accessed October 2024.

Scottish Government (2020) Sectoral Marine Plan for Offshore Wind Energy. Available at: Supporting documents - Sectoral marine plan for offshore wind energy - gov.scot Accessed December 2024.

Scottish Government (2023a) Draft Energy Strategy and Just Transition Plan. Available at: Draft Energy Strategy and Just Transition Plan - gov.scot (www.gov.scot) Accessed October 2024.

Scottish Government (2023b) National Planning Framework 4. Available at: National Planning Framework 4 - gov.scot (www.gov.scot). Accessed October 2024.

South East Lincolnshire Joint Strategic Planning Committee (2019) South East Lincolnshire Local Plan 2011-2016, Adopted March 2019. Available at: Adopted Plan - South East Lincolnshire Local Plan Accessed November 2024.

United Nations (1992) United Nations Framework Convention on Climate Change. Available at: Convention text with Annexes - English (unfccc.int). Accessed: February 2023.

United Nations (2015) Paris Agreement. Available at: https://unfccc.int/sites/default/files/english_paris_agreement.pdf. Accessed: October 2024.

United Nations Framework Convention on Climate Change (2021) Glasgow Climate Pact. Available at https://unfccc.int/sites/default/files/resource/cop26_auv_2f_cover_decision.pdf. Accessed: October 2024.

12.2. Part 2

Physical Processes

ABPmer (2018). *Data Explorer*. Available: https://www.seastates.net/explore-data/ Accessed on: 28 October 2024.

ABPmer (2024). *UK Atlas of Marine Renewable Energy.* Available at: https://www.renewables-atlas.info/. Accessed on: 28 October 2024.

BEIS (2022). *UK Offshore Strategic Environmental Assessment: Future Leasing/Licensing for Offshore Renewable Energy, Offshore Oil and Gas and Gas Storage and Associated Infrastructure – OESEA4 Environmental Report.* Available at: https://assets.publishing.service.gov.uk/media/623356e4e90e0709e1e4530d/OESEA4_Environmental_Report.pdf. Accessed on: 28 October 2024.

BEIS (2022). *Offshore Energy SEA 4: Appendix 1b: Geology, Substrates & Coastal Processes.* Available at:

https://assets.publishing.service.gov.uk/media/623253dee90e070ed5aaee43/Appendix_1b_-_Geology___substrates.pdf. Accessed on: 31 October 2024.

BERR (2008). *Review of cabling techniques and environmental effects applicable to the offshore wind farm industry – Technical Report.* Available at: https://tethys.pnnl.gov/sites/default/files/publications/Cabling_Techniques_and_Environmental_Effects.pdf. Accessed on: 28 October 2024.

BGS (2021). *Geoindex Offshore.* Available at: https://mapapps2.bgs.ac.uk/geoindex_offshore/home.html?_ga=2.188981422.440353463.1729669222-1916385470.1729669222#. Accessed on: 28 October 2024.

Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) (2023). *Sea floor geomorphology*. Available at: https://emodnet.ec.europa.eu/geoviewer/. Accessed on: 31 October 2024.

Cefas (2016). *Suspended Sediment Climatologies around the UK. Report for the UK Department for Business, Energy & Industrial Strategy offshore energy Strategic Environmental Assessment programme.*

Committee on Climate Change (2018). *Managing the coast in a changing climate*. Available at: https://www.theccc.org.uk/wp-content/uploads/2018/10/Managing-the-coast-in-a-changing-climate-October-2018-1.pdf.

Cooper, W., Saulter, A., and Hodgetts, P. (2008). *Guidelines for the Use of Metocean Data Through the Life Cycle of a Marine Renewable Energy Development*. CIRIA, 666, 1-135.

DOME (2023). *DOME (Marine Environment) Data Portal*. Available at: https://www.ices.dk//data/data-portals/Pages/DOME.aspx. Accessed on: 31 October 2024.

EMODnet (2022). *EMODnet Map Viewer.* Available at: https://emodnet.ec.europa.eu/geoviewer/. Accessed on: 28 October 2024.

Environment Agency (2024). *Bathing water quality*. [online] environment.data.gov.uk. Available at: https://environment.data.gov.uk/bwq/profiles/.

HR Wallingford (2009). *Firth of Forth and Tay Developers Group, Collaborative Oceanographic Survey, Specification and Design. Work Package 1. Review of existing information*.

JNCC (2022). *Marine Protected Area Mapper.* Available at: https://jncc.gov.uk/our-work/marine-protected-area-mapper/. Accessed on: 28 October 2024.

JNCC and Natural England (2011). *General advice on assessing potential impacts of and mitigation for human activities on MCZ features, using existing regulation and legislation.* Available at: https://data.jncc.gov.uk/data/6aff8099-10e1-4323-a4d5-b8539b8013b0/MCZs-and-human-activities-2011.pdf. Accessed on: 28 October 2024.

Kenyon Dsc, N., Marinegeo, C., Park, B. and Cooper, B. (2005). *Sand banks, sand transport and offshore wind farms*. [online] Available at: https://assets.publishing.service.gov.uk/media/5a7a24fe40f0b66eab99a0f2/SEA6_Sandbanks_Kenyon_Cooper.pdf. Accessed on: 03 December 2024.

Lee, J-Y. and Marotzke, J. (2021). *Future Global Climate: Scenario-based projections and near-term information.* IPCC Sixth Assessment Report.

Marine Scotland (2024). *Marine Scotland - National Marine Plan Interactive*. [online] Available at: https://marinescotland.atkinsgeospatial.com/nmpi/.

Met Office (2018). *UK Climate Projections 2018 (UKCP18).* https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/summaries/index. Accessed on: 29 November 2024.

National Grid (2024). *Eastern Green Link 3 and Eastern Green Link 4 Environmental Impact Assessment – Scoping Report.* Available at: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN0210003-000012-EGLK%20-%20Scoping%20Report%20-%20Volume%201%20Part%203.pdf. Accessed on: 28 October 2024.

Naturalengland.org.uk. (2018). *SSSI detail.* Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1002613&SiteName=&countyCode=27&responsiblePerson=&SeaArea=&IFCAArea=. Accessed on: 31 October. 2024.

NASA (2024). *NASA Sea Level Change Portal*. NASA Sea Level Change Portal. Available at: https://sealevel.nasa.gov/ipcc-ar6-sea-level-projection-tool.

Ocean Infinity (2022). *Interpretative Report SSE Scotwind Geophysical & Environmental Survey E1E.*

Ørsted (2018). *Environmental Impact Assessment: Scoping Report. [online]*. Available at: https://hornseaprojects.co.uk/-/media/www/docs/corp/uk/hornsea-project-four/scoping-report/hornsea-four-scoping-report-low-res. Accessed on: 03 December 2024.

OSPAR Commission (2009). *Assessment of the environmental impacts of cables.* Available at: https://qsr2010.ospar.org/media/assessments/p00437_Cables.pdf. Accessed on: 28 October 2024.

Partrac (2023). *SSE Ossian Metocean and LiDAR Campaign Final Metocean Data Report*

Planning Inspectorate (2020). *Nationally Significant Infrastructure Projects: Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements.* Available at: https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an. Accessed on: 28 October 2024.

Ramsar Sites Information Service (2022). *Map.* Available at: https://rsis.ramsar.org/. Accessed on: 28 October 2024.

Saha, S., Moorthi, S., Pan, H.-L., Wu, X., Wang, J., Nadiga, S., Tripp, P., Kistler, R., Woollen, J., Behringer, D., Liu, H., Stokes, D., Grumbine, R., Gayno, G., Wang, J., Hou, Y.-T., Chuang, H., Juang, H.-M.H., Sela, J. and Iredell, M. (2010). *The NCEP*

Climate Forecast System Reanalysis. Bulletin of the American Meteorological Society, 91(8), pp.1015–1058. doi: https://doi.org/10.1175/2010bams3001.1.

Humber Estuary Coastal Authorities Group (2010). *Flamborough Head to Gibraltar Point Shoreline Management Plan.* Available at: https://environment.data.gov.uk/shoreline-planning/documents/SMP3%2F10-12-20%20HECAG_SMP_main_document_FINAL.pdf. Accessed on: 04 December 2024.

Scottish Environment Protection Agency (SEPA) (2024). *Bathing Waters (2024). Bathing Waters* [online]. Available at: https://bathingwaters.sepa.scot/. Accessed on: 03 December 2024

Silva, T. (2016). *Monthly average non-algal suspended particulate matter concentrations. Cefas. UK. V1*. Available at: Doi: https://doi.org/10.14466/CefasDataHub.31. Accessed: 31 October 2024.

SSE Renewables (2022). *Berwick Bank Wind Farm EIA Report. Volume 2, Chapter 7: Physical Processes*.

Vindes, H., Orvik, K.A., Søiland, H. and Wehde, H. (2018). *Analysis of tidal currents in the North Sea from shipboard acoustic Doppler current profiler data.* Continental Shelf Research. 162.

Benthic Ecology

BGS (2021). *GeoIndex Offshore portal for marine habitats data*. Available at: https://www.bgs.ac.uk/map-viewers/geoindex-offshore/. Accessed on: 04 December 2024.

Brierley, A.S. and Kingsford, M.J. (2009). *Impacts of climate change on marine organisms and ecosystems*. Current biology, 19(14), pp.R602-R614.

Cefas (2024a). *Action Levels Tool – Sediment Contamination*. Available at: https://rconnect.cefas.co.uk/action_levels_tool/. Accessed on: 31 October 2024.

Cefas (2024b) *OneBenthic Portal – Open Science database*. Available at: https://openscience.cefas.co.uk/. Accessed on: 26 November 2024.

CCME (1995). *Protocol for the derivation of Canadian sediment quality guidelines for the protection of aquatic life*. CCME EPC-98E.

CCME (2001). *Canadian sediment quality protection guidelines for the protection for aquatic life*. Available at: https://www.pla.co.uk/Environment/Canadian-Sediment-Quality-Guidelines-for-the-Protection-of-Aquatic-Life. Accessed on: 31 October 2024.

CIEEM (2019). *Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. September 2018 Version 1.1 - updated September 2019*. Chartered Institute of Ecology and Environmental Management, Winchester.

Cooper, K.M. and Barry, J. (2017). *A big data approach to macrofaunal baseline assessment, monitoring and sustainable exploitation of the seabed*. Scientific Reports, 7, 12431.

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C. and Vincent, M. (2001). *Marine Monitoring Handbook, UK Marine SACs Project, Joint Nature Conservation Committee, 398pp*.

Defra (2024a). *Intertidal substrate foreshore: England and Scotland.* Available at: https://www.data.gov.uk/dataset/6efcebae-874e-4691-bf46-53057bdebda1/intertidal-substrate-foreshore-england-and-scotland. Accessed on: 04 December 2024.

Defra (2024b). *Defra Magic Map*. Available at: https://magic.defra.gov.uk/magicmap.aspx. Accessed on: 04 December 2024.

DOME (2023). *DOME (Marine Environment) Data Portal*. Available at: https://www.ices.dk//data/data-portals/Pages/DOME.aspx. Accessed on: 31 October 2024.

EMODnet. (2021) *EU SeaMap 2021 habitat types (EUNIS 2019)*. Available at: https://emodnet.ec.europa.eu/geoviewer/. Accessed on: 04 December 2024.

E.ON (2005). *Humber Gateway, Environmental Statement: Section 8 – Description of the Biological Baseline Environment*. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Section-8-Description-of-the-Biological-Baseline-Environment.pdf. Accessed on: 31 October 2024.

European Marine Energy Centre and Xodus, (2010). *Consenting, EIA and HRA Guidance for Marine Renewable Energy Developments in Scotland*. Scottish Government. April 2010.

Golding, N., Albrecht, J. and McBreen, F. (2020). *Refining the criteria for defining areas with a 'low resemblance' to Annex I stony reef, JNCC Report No. 656, September 2020.*

Gubbay, S. (2007). *Defining and managing Sabellaria spinulosa reefs: Report of an inter-agency workshop 1-2 May 2007*. JNCC Report No. 405, JNCC, Peterborough.

Hin, J. A., Osté, L. A., and Schmidt, C. A. (2010). *Guidance document for sediment assessment: methods to determine to what extent the realization of water quality objectives of a water system is impeded by contaminated sediments*. Dutch Ministry of Infrastructure and the Environment–DG Water.

Hornsea Project Four Limited (2024). *Hornsea Project Four Offshore Wind Farm – Documents library*. Available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010098/documents. Accessed on: 26 November 2024.

Irving, R. (2009). *Identification of the Main Characteristics of Stony Reef Habitats under the Habitats Directive. Summary of an Inter Agency Workshop 26-27 March 2008*. Joint Nature Conservation Committee, JNCC Report No. 432, 28pp.

JNCC (2020). *Marine Protected Area Mapper*. Available at: https://jncc.gov.uk/mpa-mapper/ Accessed on: 31 October 2024.

Judd, A. (2012). *Guidelines for Data Acquisition to Support Marine Environmental Assessments of Offshore Renewable Energy Projects*. Cefas contract report: ME5403 – Module 15 submitted to Defra and the MMO.

Limpenny, D.S., Foster-Smith, R.L., Edwards, T.M., Hendrick, V.J., Diesing, M., Eggleton, J.D., Meadows, W.J., Crutchfield, Z., Pfeifer, S. and Reach, I.S. (2010). *Best Methods for Identifying and Evaluating Sabellaria spinulosa and Cobble Reef*. *Natural England Supported Through Defra's Aggregates Levy Sustainability Fund*, ALSF Ref No. MAL0008, 149pp

Marine Scotland (2023). *Intertidal and continental shelf habitats and species*. Available at: https://marine.gov.scot/sma/assessment/intertidal-and-continental-shelf-habitats-and-species. Accessed on: 31 October 2024.

Marine Scotland (2024). *The Marine Scotland National Marine Plan Interactive (NMPi) maps*. Available at: https://marinescotland.atkinsgeospatial.com/nmpi/. Accessed on: 31 October 2024.

Meißner, K., Bockhold, J. and Sordyl, H. (2007). *Problem Kabelwärme? – Vorstellung der Ergebnisse von Feldmessungen der Meeresbodentemperatur im Bereich der elektrischen Kabel im dänischen Offshore-Windpark Nysted Havmøllepark (Dänemark).* Meeresumwelt-Symposium 2006. Hrsg. Bundesamt für Seeschiffahrt und Hydrographie. Hamburg, Germany pp.153-161.

MMO (2015). *High level review of current UK action level guidance*. A report produced for the Marine Management Organisation. MMO Project No. 1053.

National Biodiversity Network (2024). *NBN Atlas*. Available at: https://nbnatlas.org/. Accessed on: 26 November 2024.

National Grid (2024). *Eastern Green Link 3 and Eastern Green Link 4: Environmental Impact Assessment Scoping Report: Volume 1, Part 3, English Offshore Scheme*. Available at: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN0210003-000012-EGLK%20-%20Scoping%20Report%20-%20Volume%201%20Part%203.pdf. Accessed on: 31 October 2024.

NEA (2016, revised 2020). *Grenseverdier for klassifisering av vann, sediment of biota, report M-608*. Norwegian Environmental Authority (Miljødirektoratet).

OSPAR (2008). *OSPAR Guidance on Environmental Considerations for Offshore Wind Farm Development. (Reference number: 2008-3).* Available at: http://www.vliz.be/imisdocs/publications/ocrd/224682.pdf. Accessed on: 31 October 2024.

Ossian OWFL (2022). *Ossian Array: EIA Scoping Report.* Available at: https://marine.gov.scot/sites/default/files/ossian_wind_-_array_eia_scoping_report_-_eor0811a.pdf. Accessed on: 31 October 2024.

Ossian OWFL (2024). *Ossian Array EIA Report: Appendix 8.1 Benthic Subtidal Ecology Technical Report*. Available at: https://marine.gov.scot/node/25358. Accessed on: 31 October 2024.

Outer Dowsing Offshore Wind (2024). *Documents library – Outer Dowsing Offshore Wind Farm: Chapter 9 Benthic Ecology.* Available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010130/documents. Accessed on: 26 November 2024.

Pearce, B., Grubb, L., Earnshaw, S., Pitts, J. and Goodchild, R. (2014). *Biotope assignment of grab samples from four surveys undertaken in 2011 across Scotland's seas (2012).* JNCC Report, No 509.

RWE Renewables (2024). *Documents library - Dogger Bank South Offshore Wind Farms: Chapter 9 Benthic and Intertidal Ecology*. Available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010125/documents. Accessed on: 26 November 2024.

Saunders, G., Bedford, G., S., Trendall, J., R. and Sotheran, I. (2011). *Guidance on survey and monitoring in relation to marine renewables deployments in Scotland. Volume 5. Benthic Habitats.* Unpublished draft report to Scottish Natural Heritage and Marine Scotland.

Sotheran, I. and Crawford-Avis, O. (2014). *Mapping habitats and biotopes from acoustic datasets to strengthen the information base of Marine Protected Areas in Scottish Waters*. JNCC, Peterborough (UK). Report No. 503

Tappin, D R, Pearce, B, Fitch, S, Dove, D, Gearey, B, Hill, J M, Chambers, C, Bates, R, Pinnion, J, Diaz Doce, D, Green, M, Gallyot, J, Georgiou, L, Brutto, D, Marzialetti, S, Hopla, E, Ramsay, E, and Fielding, H. (2011). *The Humber Regional Environmental Characterisation*. British Geological Survey Open Report OR/10/54. 357pp. Available at: https://nora.nerc.ac.uk/15037/. Accessed on: 04 December 2024.

Triton Knoll Offshore Wind Farm Limited (2016) *Document library – Triton Knoll Offshore Wind Farm*. Available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010005. Accessed on: 26 November 2024.

Ware, S.J. and Kenny, A.J. (2011). *Guidelines for the conduct of benthic studies at marine aggregate extraction sites*. Cefas, Lowestoft (UK). Project Code: MEPF, 8, pp.75.

Fish and Shellfish Ecology

Aires, C., González-Irusta, J. and Watret, R. (2014). *Updating Fisheries Sensitivity Maps in British Waters*. Marine Scotland. Vol 5 No 10. pp.88.

AMEC (2011). *Blyth NaREC Offshore Demonstration Site, Benthic Surveys*. Available at: https://www.marinedataexchange.co.uk/details/TCE-117/2011-2012-amec-blyth-narecoffshore-demonstration-site-benthic-surveys/packages/417?type=Report&directory=%2F. Accessed on: 27 November 2024.

Barreto, E, and Bailey, N. (2013). *Fish and shellfish stocks 2013 edition*. Marine Scotland Science, The Scottish Government, Edinburgh (UK).

Barreto, E, and Bailey, N. (2016). *Fish and shellfish stocks 2016 Edition; Scottish Fish Stocks sectio*n. Marine Scotland Science, The Scottish Government, Edinburgh (UK).

Baxter, J.M., Boyd, I.L., Cox, M., Donald, A.E., Malcolm, S.J., Miles, H., Miller, B. and Moffat, C.F. (eds.) (2011). *Scotland's Marine Atlas: Information for the National Marine Plan*. Marine Scotland, Edinburgh. pp. 191.

Chartered Institute of Ecology and Environmental Management. (2019). *Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. September 2018 Version 1.1 - updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.

Coull, K., A., Johnstone, R. and Rogers, S., I. (1998). *Fisheries sensitivity maps in British waters. UKOOA Ltd*.

Daan, N., Heessen, H. J. L. and ter Hofstede, R. (2005). *North Sea Elasmobranchs: distribution, abundance and biodiversity*. ICES.

Department for Environment, Food and Rural Affairs and Natural England (2022). *Guidance: Habitats and species of principal importance in England.* Available at: https://www.gov.uk/government/publications/habitats-and-species-of-principal-importance-in-england. Accessed on: 31 October 2024.

Eaton, D.R., Brown, J., Addison, J.T., Milligan, S.P. and Ferand., L.J. (2003). *Edible crab (Cancer pagurus) larvae surveys off the east coast of England: implications for stock structure*. Available at: https://www.sciencedirect.com/science/article/pii/S0165783603002431. Accessed on: 31 October 2024.

Ellis, J., R., Milligan, S., P., Readdy, L., Taylor, N. and Brown, M., J. (2012). *Spawning and nursery grounds of selected fish species in UK waters*. Science Series Technical Report, 147. Cefas, Lowestoft.

EnBW (2022). *Morgan and Morecambe Offshore Wind Farms: Transmission Assets: Environmental Impact Assessment Scoping Report*. Available at: https://www.enbw-bp.com/static/804c8235bcdd3d3f893e638744efa3eb/Morgan_and_Morecambe_Environmental_Impact_Assessment__EIA__scoping_request_for_transmission_assets.pdf. Accessed on: 27 November 2024.

EnBW (2024). *Morven Hawthorn Pit Grid Connection Project: Environmental Impact Assessment Scoping Report*. Available at: https://marine.gov.scot/node/25880.

E.ON (2005). *Humber Gateway, Environmental Statement: Section 8 – Description of the Biological Baseline Environment*. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Section-8-Description-of-the-Biological-Baseline-Environment.pdf. Accessed on: 31 October 2024.

European Marine Energy Centre and Xodus, (2010). *Consenting, EIA and HRA Guidance for Marine Renewable Energy Developments in Scotland. Scottish Government*. April 2010.

FishSource (2023). *Norway Lobster Farn Deep (FU 6).* Available at: https://www.fishsource.org/stock_page/1166. Accessed on: 31 October 2024.

Franco, A., Smyth, K. and Thomson, S. (2023). *Developing Essential Fish Habitat maps for fish and shellfish species in Scotland*. Report to the Scottish Government pp.305.

González-Irusta, J. M. and Wright, P. J. (2016a). *Spawning grounds of haddock (Melanogrammus aeglefinus) in the North Sea and West of Scotland*. Fisheries Research, 183, pp.180-191. DOI:10.1016/j.fishres.2016.05.028

González-Irusta, J. M. and Wright, P. J. (2016b). *Spawning grounds of Atlantic cod (Gadus morhua) in the North Sea*. ICES Journal of Marine Science: Journal du Conseil, 73 (2), pp.304-315. DOI:10.1093/icesjms/fsv180.

González-Irusta, J. M. and Wright, P. J. (2017). *Spawning grounds of whiting (Merlangius merlangus).* Fisheries Research, 195, pp.141-151. DOI:10.1016/j.fishres.2017.07.005. DOI:10.1093/icesjms/fsv180.

Heath, M.R., Neat, F.C., Pinnegar, J.K., Reid, D.G., Sims, D.W. and Wright, P.J. (2012). *Review of climate change impacts on marine fish and shellfish around the UK and Ireland.* Aquatic Conservation: Marine and Freshwater Ecosystems, 22(3), pp.337-367.

Hume, J. B. (2017). *A review of the geographic distribution, status and conservation of Scotland's lampreys.* The Glasgow Naturalist, 26, 1-10.

ICES (2022a). *International Bottom Trawl Survey*. Available at: https://datras.ices.dk/home/descriptions.aspx Accessed on: 31 October 2024.

ICES (2022b). *Eggs and Larvae*. Available at: https://www.ices.dk/data/data-portals/Pages/Eggs-and-larvae.aspx. Accessed on: 31 October 2024.

JNCC (2020). *MPA Mapper*. Available at: https://jncc.gov.uk/our-work/marine-protected-area-mapper/. Accessed on: 31 October 2024.

Lucke, K., MacGillivray, A.O., Halvorsen, M.B., Ainslie, M.A., Zeddies, D.G. and Sisneros, J.A., (2024). *Recommendations on bioacoustical metrics relevant for regulating exposure to anthropogenic underwater sound*. The Journal of the Acoustical Society of America, 156(4), pp.2508-2526.

Malcolm, I., A., Godfrey, J., and Youngson, A., F. (2010). *Review of migratory routes and behaviour of Atlantic salmon, Sea trout, and European eel in Scotland's coastal environment: implications for the development of marine renewables*. Scottish Marine and Freshwater Science, 1(14).

Malcolm, I.A, Millar C.P and Millidine K.J (2015). *Spatio-Temporal Variability in Scottish Smolt Emigration Times and Sizes. Scottish Marine and Freshwater Science*. Volume 6 Number 2. Available at: http://www.gov.scot/Resource/0047/00472202.pdf. Accessed on: 31 October, 2024.

Marine Scotland (2021). *2020 Scottish Sea Fisheries Statistics – Fishing Effort and Quality and Value of Landings by ICES Rectangle.* Available at: https://data.marine.gov.scot/dataset/2020-scottish-sea-fisheries-statistics-fishing-effortand-quantity-and-value-landings-ices. Accessed on: 31 October 2024.

Marine Scotland (2023) *2022 Scottish Sea Fisheries Statistics - Fishing Effort and Quantity and Value of Landings by ICES Rectangles*. Available at: https://data.marine.gov.scot/dataset/2022-scottish-sea-fisheries-statistics-fishing-effort-and-quantity-and-value-landings-ices. Accessed on: 18 December 2024.

Marine Scotland (2024). *National Marine Plan Interactive*. Available at: https://marinescotland.atkinsgeospatial.com/nmpi/. Accessed on: 31 October 2024.

MarLIN (2024). *Species listed as Priority Marine Features (Scotland).* Available at: https://www.marlin.ac.uk/species/pmf. Accessed on: 31 October 2024.

Mclay, A, Mesquita, C, Dobby, H. and Blackadder, L (2016). *Fish and shellfish stocks 2016 Edition; Scottish Shellfish Stocks section*. Marine Scotland Science, The Scottish Government, Edinburgh (UK).

Mesquita, C, Dobby, H. and Mclay, A. (2016). *Crab and lobster fisheries in Scotland: Results of Stock Assessments 2009-2012*. Scottish Marine and Freshwater Science, 7(9).

Mesquita, C, Ellis, A, Miethe, T. and Dobby, H. (2023). *Crab and lobster fisheries in Scotland: Results of Stock Assessments 2016-2019*. Scottish Marine and Freshwater Science, 14(5).

MMO (2023). *UK Seas Fisheries Statistics 2022*. Available at: https://assets.publishing.service.gov.uk/media/662761cdd29479e036a7e504/UK_Sea_Fisheries_Statistics_2022_101123___.pdf. Accessed on: 31 October 2024.

MMO (2024) *UK Sea Fisheries Annual Statistics Report 2023*. Available at: https://www.gov.uk/government/statistics/uk-sea-fisheries-annual-statistics-report-2023. Accessed on: 19 December 2024.

National Grid (2024). *Eastern Green Link 3 and Eastern Green Link 4: Environmental Impact Assessment Scoping Report: Volume 1, Part 3, English Offshore Scheme*. Available at: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN0210003-000012-EGLK%20-%20Scoping%20Report%20-%20Volume%201%20Part%203.pdf. Accessed on: 31 October 2024.

Natural England (2011) *Humber Estuary designations and conservation objectives*. Available at: http://tide-project.eu/downloads/Will_Maclennan_NE.pdf. Accessed on: 16 January 2025.

NBN (2024). *National Biodiversity Network: National Database*. Available at: https://nbnatlas.org/. Accessed on: 31 October 2024.

Orsted (2018). *Hornsea Project Three Offshore Wind Farm: Environmental Statement Volume 5, Annex 5.1 – Baseline Characterisation Report*. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-000577-HOW03_6.5.5.1_Volume%205%20-%205.1%20-%20Baseline%20Characterisation%20Report.pdf. Accessed on: 27 November 2024.

Ørsted (2021). *Hornsea Project Four: Environmental Statement (ES).* Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-000837-Hornsea%20Project%20Four%20Offshore%20Wind%20Farm%20Examination%20Library.pdf. Accessed on: 09 January 2025.

OSPAR Convention (2008). *OSPAR Guidance on Environmental Considerations for Offshore Wind Farm Development.* (Reference number: 2008-3). Available at: http://www.vliz.be/imisdocs/publications/ocrd/224682.pdf. Accessed on: 31 October 2024.

Ossian OWFL (2022). *Ossian Array: EIA Scoping Report*. Available at: https://marine.gov.scot/sites/default/files/ossian_wind_-_array_eia_scoping_report_-_eor0811a.pdf. Accessed on: 31 October 2024.

Ossian OWFL (2024) *Ossian Array EIA Report – Chapter 9: Fish and Shellfish Ecology*. Available at: https://ossian-eia.com/offshore-eia/vol2/ch9-fish-and-shellfish-ecology/part-3.html#9.7.-Baseline-Environment . Accessed on: 27 November 2024.

Ossian OWFL (2025). *Ossian Offshore Wind Farm: Transmission Infrastructure. Habitats Regulations Assessment (HRA): Stage 1 LSE Screening Report.*

Popper, A.N., Hawkins, A.D., Fay, R.R., Mann, D.A., Bartol, S., Carlson, T.J., Coombs, S., Ellison, W.T., Gentry, R.L., Halvorsen, M.B., Løkkeborg, S., Rogers, P.H., Southall, B.L., Zeddies, D.G. and Tavolga, W.N. (2014). *ASA S3/SC1.4 TR-2014 Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report prepared by ANSI-Accredited Standards committee S3/SC1 and registered with ANSI*. American National Standards Institute. Springer, Cham. pp.33- 51.

Taeubert, J. E. and Geist, J. (2017). *The relationship between the freshwater pearl mussel (Margaritifera margaritifera) and its hosts*. Biology Bulletin, 44(1), 67-73.

Marine Mammals

Arso Civil, M., Quick, N., Mews, S., Hague, E., Cheney, B. J., Thompson, P. M., & Hammond, P. S. (2021). *Improving understanding of bottlenose dolphin movements along the east coast of Scotland.* Final report. Available at: https://group.vattenfall.com/uk/contentassets/c65a13553f864f599431d69c8c6a57b4/bottlenose-dolphin-monitoring---final-report-2021.pdf. Accessed on: 16 January 2025.

Avant, P. (2008). *Tursiops truncatus Bottle-nosed dolphin*. In Tyler-Walters H. and Hiscock K. (eds) Marine Life Information Network: Biology and Sensitivity Key Information Reviews. Plymouth: Marine Biological Association of the United Kingdom. Available at: https://www.marlin.ac.uk/species/detail/1674. Accessed on: 07 November 2024.

Benhemma-Le Gall A., Graham I.M., Merchant N.D., and Thompson P.M. (2021) *Broad-Scale Responses of Harbor Porpoises to Pile-Driving and Vessel Activities During Offshore Windfarm Construction*. Front. Mar. Sci. 8:664724. doi: 10.3389/fmars.2021.664724

Carter, M. I. D., Boehme, L., Cronin, M. A., Duck, C. D., Grecian, W. J., Hastie, G. D., Jessopp, M., Matthiopoulos, J., McConnell, B. J., Miller, D. L., Morris, C. D., Moss, S. E. W., Thompson, D., Thompson, P. M., and Russell, D. J. F. (2022). *Sympatric Seals, Satellite Tracking and Protected Areas: Habitat-Based Distribution Estimates for Conservation and Management*. Frontiers in Marine Science, 9, 18. Available at: https://doi.org/10.3389/fmars.2022.875869. Accessed on: 16 January 2025.

Cheney, B., Thompson, P. M., Ingram, S. N., Hammond, P. S., Stevick, P. T., Durban, J. W., Culloch, R. M., Elwen, S. H., Mandleberg, L., Janik, V. M., and Quick, N. J. (2013). *Integrating multiple data sources to assess the distribution and abundance of bottlenose dolphins Tursiops truncatus in Scottish waters*. Mammal Review, 43(1), 71-88. Available at: https://assets.ctfassets.net/xe1w9sqtia79/6lSuJz0VNr53gOmam0fS5D/ccad407949549e93e132a29b3b5e6bb8/cheney_etal_MR_2012.pdf. Accessed on: 16 January 2025.

Cheney, B., Graham, I.M., Barton, T.R., Hammond, P.S. and Thompson, P.M. (2018). *Site Condition Monitoring of bottlenose dolphins within the Moray Firth Special Area of Conservation: 2014-2016. Scottish Natural Heritage Research Report No. 1021*. Available at: https://www.nature.scot/sites/default/files/2018-04/Publication%202018%20-%20SNH%20Research%20Report%201021%20-%20Site%20Condition%20Monitoring%20of%20bottlenose%20dolphins%20within%20the%20Moray%20Firth%20Special%20Area%20of%20Conservation%202014-2016.pdf. Accessed on: 16 January 2025.

Chevallard, P., Culloch, R., Edwards, E., Davies, I. and Brookes, K. (2019). *East Coast Marine Mammal Acoustic*. Available at: https://marine.gov.scot/information/east-coast-marine-mammal-acoustic-study-ecommas. Accessed on: 16 January 2025.

Evans, P. and Waggitt, J. (2020). *Impacts of climate change on Marine Mammals, relevant to the coastal and marine environment around the UK*. Marine Climate Change Impacts Partnership. Available at: https://research.bangor.ac.uk/portal/files/37579599/EvansWaggitt_MCCIP1_Publication.pdf. Accessed on: 16 January 2025.

Forewind. (2014). *Chapter 14 Marine Mammals (Environmental Statement)*. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Dogger-Bank-ES-Chapter-14.pdf. Accessed on: 16 January 2025.

Gilles, A., Authier, M., Ramirez-Martinez, N. C., Araújo, H., Blanchard, A., Carlström, J., Eira, C., Dorémus, G., Fernández-Maldonado, C., Geelhoed, S. C. V., Kyhn, L., Laran, S., Nachtsheim, D., Panigada, S., Pigeault, R., Sequeira, M., Sveegaard, S., Taylor, N. L., Owen, K., and Hammond, P. S. (2023). *Estimates of cetacean abundance in European Atlantic waters in summer 2022 from the SCANS-IV aerial and shipboard surveys.* Available at: https://tinyurl.com/3ynt6swa. Accessed on: 16 January 2025.

Grellier, K., and Lacey, C. (2012*). Analysis of The Crown Estate aerial survey data for marine mammals for the Forth and Tay Offshore Wind Developers Group region*. Unpublished report to The FTOWDG. SMRUL-SGW-2012-015. Available at: https://marine.gov.scot/datafiles/lot/nng/Environmental_statement/Appendices/Appendix%2013.6%20-%20SMRU%20Aerial%20Survey.pdf. Accessed on: 16 January 2025.

Hague, E. L., Sinclair, R. R., and Sparling, C. E. (2020). *Regional baselines for marine mammal knowledge across the North Sea and Atlantic areas of Scottish waters*. Scottish Marine and Freshwater Science Vol 11 No 12. Available at : https://data.marine.gov.scot/sites/default/files//Scottish%20Marine%20and%20Freshwater%20Science%20%28SMFS%29%20Vol%2011%20No%2012%20Regional%20baselines%20for%20marine%20mammal%20knowledge%20across%20the%20North%20Sea%20and%20Atlantic%20areas%20of%20Scottish%20waters.pdf. Accessed on: 16 January 2025.

Hammond, P.S., Northridge, S.P., Thompson, D., Gordon, J.C.D., Hall, A.J., Aarts, G., and Matthiopoulos, J. (2005). *Background information on marine mammals for Strategic Environmental Assessment 6.* Available at: https://doi.org/10.1046/j.1365-2664.2002.00713.x. Accessed on: 16 January 2025.

Hammond, P., Lacey, C, Gilles, A., Viquerat, S., Börjesson, P., Herr, H., Macleod, K., Ridoux, V., Santos, M., Scheidat, M., Teilmann, J., Vingada, J., and Øie, N. (2017). *Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys.* Wageningen Marine Research. 40pp. Available at: https://edepot.wur.nl/414756. Accessed on: 16 January 2025.

Heinänen, S. and Skov, H. (2015). *The identification of discrete and persistent areas of relatively high harbour porpoise density in the wider UK marine area, JNCC Report No.544*. JNCC, Peterborough, ISSN 0963 8901. Available at: https://data.jncc.gov.uk/data/f7450390-9a89-4986-8389-9bff5ea1978a/JNCC-Report-544-FINAL-WEB.pdf. Accessed on: 16 January 2025.

Howson, C.M., Steel, L., Carruthers, M. and Gillham, K. (2012). *Identification of Priority Marine Features in Scottish territorial waters*. NatureScot Commissioned Report No. 388. Available at: https://www.nature.scot/doc/naturescot-commissioned-report-388-identification-priority-marine-features-scottish-territorial. Accessed on: 23 October 2024.

IAMMWG (2015). *Management Units for cetaceans in UK waters* (January 2015). JNCC Report 547, JNCC, Peterborough, ISSN 0963-8091. Available at: https://hub.jncc.gov.uk/assets/f07fe770-e9a3-418d-af2c-44002a3f2872. Accessed on: 17 January 2025.

IAMMWG (2022). *Updated abundance estimates for cetacean Management Units in UK waters (JNCC Report No. 680 (Revised March 2022))*. JNCC Peterborough, ISSN 0963-8091. Available at: https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3. Accessed on: 17 January 2025.

IAMWGG (2023). *Review of Management Unit boundaries for cetaceans in UK waters (2023) (JNCC Report No. 734)*. JNCC, Peterborough, ISSN 0963-8091. Available at: https://hub.jncc.gov.uk/assets/b48b8332-349f-4358-b080-b4506384f4f7. Accessed on: 17 January 2025.

IJsseldijk, L.L., Brownlow, A., Davison, N., Deaville, R., Haelters, J., Keijl, G., Siebert, U. and ten Doeschate, M.T. (2018). *Spatiotemporal analysis in white-beaked dolphin strandings along the North Sea coast from 1991-2017*. Lutra, 61(1), 153-163pp.

JCDP (2023). *Joint Cetacean Data Programme*. Available at: https://jncc.gov.uk/our-work/joint-cetacean-data-programme/. Accessed on: 23 October 2024.

JNCC (2010). *JNCC guidelines for minimising the risk of injury to marine mammals from using explosives*. Available at: https://data.jncc.gov.uk/data/24cc180d-4030-49dd-8977-a04ebe0d7aca/JNCC-Guidelines-Explosives-Guidelines-201008-Web.pdf. Accessed on: 16 January 2025.

JNCC, NE and Countryside Council for Wales. (2010). *The Protection of Marine European Protected Species (EPS) From Injury and Disturbance: Draft Guidance for the Marine Area in England and Wales and the UK Offshore Marine Area*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/850708/Draft_Guidance_on_the_Protection_of_Marine_European_Protected_Species_from_Injurt_and_Disturbance.pdf. Accessed on: 23 October 2024.

JNCC. (2017). *Guidelines for minimising the risk of injury to marine mammals from geophysical surveys*. Available at: https://hub.jncc.gov.uk/assets/e2a46de5-43d4-43f0-b296-c62134397ce4. Accessed on: 23 October 2024.

JNCC and NE. (2019a). *Advice on key sensitivities of habitats and Marine Protected Areas in English Waters to offshore wind farm cabling within Proposed Round 4 leasing areas*. Available at: https://hub.jncc.gov.uk/assets/3c9f030c-5fa0-4ee4-9868-1debedb4b47f. Accessed on: 23 October 2024.

JNCC and NE. (2019b). *Harbour Porpoise (Phocoena phocoena) Special Area of Conservation: Southern North Sea Conservation Objectives and Advice on Operations*. Available at: https://data.jncc.gov.uk/data/206f2222-5c2b-4312-99ba-d59dfd1dec1d/SouthernNorthSea-conservation-advice.pdf. Accessed on: 23 October 2024.

JNCC. (2019b). *European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC): Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018 Conservation Status assessment for S2618 minke whale (Balaenoptera acutorostrata)*. Available at: https://data.jncc.gov.uk/data/24cc180d-4030-49dd-8977-a04ebe0d7aca/JNCC-Guidelines-Explosives-Guidelines-201008-Web.pdf. Accessed on: 16 January 2025.

JNCC (2019f). *European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC): Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018 Conservation Status assessment for S1365 harbour seal (Phoca vitulina)*. Available at: https://data.jncc.gov.uk/data/24cc180d-4030-49dd-8977-a04ebe0d7aca/JNCC-Guidelines-Explosives-Guidelines-201008-Web.pdf. Accessed on: 16 January 2025.

JNCC (2020). *Special Areas of Conservation (SACs) with marine components (all UK waters) 2020*. Available at: https://hub.jncc.gov.uk/assets/598a60db-9323-4781-b5a8-dcf0ca3b29f9.

JNCC, Department of Agriculture, Environment and Rural Affairs (DAERA) and NE. (2020). *Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise SACs*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/889842/SACNoiseGuidanceJune2020.pdf. Accessed on: 23 October 2024.

JNCC (2022). *Updated abundance estimates for cetacean Management Units in UK waters (Revised 2022)*. Available at: https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3. Accessed on: 23 October 2024.

JNCC (2022a). *Moray Firth Designated SAC*. Available at: https://sac.jncc.gov.uk/site/UK0019808. Accessed on: 07 November 2024.

JNCC (2022b). *Special Areas of Conservation*. Available at: https://jncc.gov.uk/our-work/special-areas-of-conservation/. Accessed on: 25 October 2024.

JNCC (2023). *Draft guidelines for minimising the risk of injury to marine mammals from unexploded ordnance clearance in the marine environment*. Available at: https://jncc.gov.uk/media/8419/draft-marine-mammal-guidelines-unexploded-ordnance.pdf. Accessed on: 25 October 2024.

JNCC (2025). *JNCC guidelines for minimising the risk of injury to marine mammals from unexploded ordnance (UXO) clearance in the marine environment*. JNCC, Aberdeen.

Jones, E. L., McConnell, B. J., Smout, S., Hammond, P. S., Duck, C. D., Morris, C. D., Thompson, D., Russell, D. J. F., Vincent, C., Cronin, M., Sharples, R. J., and Matthiopoulos, J. (2015). *Patterns of space use in sympatric marine colonial predators reveal scales of spatial partitioning*. Marine Ecology Progress Series, 534, 235-249. Available at: https://doi.org/10.3354/meps11370. Accessed on: 17 January 2025.

Lacey, C., Gilles, A., Börjesson, P., Herr, H., Macleod, K., Ridoux, V., Santos, M.B., Scheidat, M., Teilmann, J., Sveegaard, S., Vingada, J., Viquerat, S., Øien, N., and Hammond, P.S. (2022). *Modelled density surfaces of cetaceans in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys (SCANS-III project report 2)*. Available at: https://scans3.wp.st-andrews.ac.uk/files/2022/08/SCANS-III_density_surface_modelling_report_final_20220815.pdf. Accessed on: 16 January 2025.

Mackenzie, M. L., Kidney, D., and Donovan, C. R. (2012). *Forth and Tay Offshore Wind Developers Group: Cetacean Survey Data Analysis Report.* Available at: https://marine.gov.scot/sites/default/files/appendix_h7.pdf. Accessed on: 16 January 2025.

MacLeod, C., Bannon, S., Pierce, G., Schweder, C., Learmonth, J., Herman, J., and Reid, R. (2005). *Climate change and the cetacean community of north-west Scotland*. Biological conservation, 124, 477-483. Available at: https://doi.org/10.1016/j.biocon.2005.02.004. Accessed on: 16 January 2025.

Marine Scotland. (2014). *Guidance on the Offence of Harassment at Seal Haul-out Sites*. Available at: https://www.gov.scot/publications/guidance-harassment-at-seal-haul-out-sites/. Accessed on: 23 October 2024.

Marine Scotland. (2023). *Marine Directorate - Licensing Operations Team Scoping Opinion*. Available at: https://marine.gov.scot/sites/default/files/ossian_array_-_scoping_opinion.pdf. Accessed on: 16 January 2025.

McConnell, B., Lonergan, M., and Dietz, R. (2012). *Marine Estate Research Report Interactions between seals and offshore wind farms*. Available at: http://www.smru.st-andrews.ac.uk/files/2021/04/Interactions-between-seals-and-offshore-wind-farms-McConnell-et-al-2012.pdf. Accessed on: 16 January 2025.

MMO (2021). *Guidance Seals*. Available at: https://www.gov.uk/government/publications/protected-marine-species/seals. Accessed on: 23 October 2024.

Morris, C. D., Duck, C. D., and Thompson, D. (2021). *Aerial surveys of seals in Scotland during the harbour seal moult, 2016-2019*. Available at: https://www.nature.scot/doc/naturescot-research-report-1256-aerial-surveys-seals-scotland-during-harbour-seal-moult-2016-2019. Accessed on: 16 January 2025.

NatureScot (2014). *Priority marine features in Scotland's seas*. Available at: https://www.nature.scot/professional-advice/protected-areas-and-species/priority-marine-features-scotlands-seas. Accessed on: 07 November 2024.

NE and JNCC (2022). *Nature Conservation Considerations and Environmental Best Practice for subsea cable for English Inshore and UK Offshore Waters*. Available at: https://naturalengland.blog.gov.uk/2022/10/11/hot-off-the-press-natural-englands-research-to-support-offshore-wind/. Accessed on: 23 October 2024.

Orsted (2021). *Hornsea project Four: Environmental Statement – Volume A.2 – Chapter 4: Marine Mammals.* Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-000714-A2.12%20ES%20Volume%202%20Chapter%2012%20Cumulative%20and%20Transboundary%20Effects%20Offshore%20Summary.pdf. Accessed on: 16 January 2025.

Ossian OWFL (2024). *Appendix 10.2, Annex A: Marine Mammal Digital Aerial Survey Data Report 2024 Array EIA Report*. Available at: https://marine.gov.scot/sites/default/files/volume_3_-technical_reports-appendix_10.2-_annex_a.pdf. Accessed on: 16 January 2025.

Ossian OWFL (2025).

Outer Dowsing Offshore Wind (2024). *Outer Dowsing Offshore Wind Environmental Statement Chapter 11 Marine Mammals*.Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-000353-6.1.11%20Chapter%2011%20Marine%20Mammals.pdf. Accessed on: 16 January 2025.

Paxton, C. G. M., Scott-Hayward, L. A. S., MacKenzie, M. L., Rexstad, E., and Thomas, L. J. (2016). *Revised Phase III Data Analysis of Joint Cetacean Protocol Data Resources with Advisory Note (Vol. 517) [Commissioned report]*. JNCC. Available at: https://hub.jncc.gov.uk/assets/01adfabd-e75f-48ba-9643-2d594983201e. Accessed on: 16 January 2025.

Quick, N., and Cheney, B. (2011). *Cetacean Baseline Characterisation for the Firth of Tay based on existing data: Bottlenose dolphins*. Available at: https://marine.gov.scot/datafiles/lot/nng/Environmental_statement/Appendices/Appendix%2013.3%20-%20SMRU%20BND%20Characterisation.pdf. Accessed on: 16 January 2025.

Reid, J., Evans, P. G. H., and Northridge, S. P. (2003). *Cetacean Distribution Atlas*. Available at: https://hub.jncc.gov.uk/assets/a5a51895-50a1-4cd8-8f9d-8e2512345adf. Accessed on: 16 January 2025.

Robinson, K.P., Sim, T.M., Culloch, R.M., Bean, T.S., Cordoba Aguilar, I., Eisfeld, S.M., Filan, M., Haskins, G.N., Williams, G. and Pierce, G.J. (2017). *Female reproductive success and calf survival in a North Sea coastal bottlenose dolphin (Tursiops truncatus) population*. PLoS One, 12(9), p.e0185000. Available at: https://doi.org/10.1371/journal.pone.0185000. Accessed on: 16 January 2025.

Robinson, K.P., Bamford, C.C.G., Brown, W.J., Culloch, R.M., Dolan, C.J., Hall, R., Russell, G., Sidiropoulos, T., Spinou, E., Sim, T.M.C., Stroud, E., Williams, G., and Haskins, G.N. (2021) *Ecological habitat partitioning and feeding specialisations of coastal minke whales (Balaenoptera acutorostrata) using a designated MPA in northeast Scotland,* bioRxiv. Available at: https://doi.org/10.1101/2021.01.25.428066. Accessed on: 16 January 2025.

Rogan, E., Breen, P., Mackey, M., Cañadas, A., Scheidat, M., Geelhoed, S. and Jessopp, M. (2018). *Aerial surveys of cetaceans and seabirds in Irish waters: Occurrence, distribution and abundance in 2015-2017*. Department of Communications, Climate Action & Environment and National Parks and Wildlife Service (NPWS), Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland, 297pp. Available at: https://secure.dccae.gov.ie/downloads/SDCU_DOWNLOAD/ObSERVE_Aerial_Report.pdf. Accessed on: 16 January 2025.

Schick, L., IJsseldijk, L.L., Grilo, M.L., Lakemeyer, J., Lehnert, K., Wohlsein, P., Ewers, C., Prenger-Berninghoff, E., Baumgärtner, W., Gröne, A. and Kik, M.J. (2020). *Pathological findings in white-beaked dolphins (Lagenorhynchus albirostris) and Atlantic white-sided dolphins (Lagenorhynchus acutus) from the South-Eastern North Sea*. Frontiers in Veterinary Science, 7, 262pp. Available at: https://doi.org/10.3389/fvets.2020.00262. Accessed on: 16 January 2025.

SCOS (2022). *Scientific Advice on Matters Related to the Management of Seal Populations: 2022*. Available at: https://www.smru.st-andrews.ac.uk/files/2023/09/SCOS-2022.pdf. Accessed on: 16 January 2025.

SCOS (2023). *Scientific Advice on Matters Related to the Management of Seal Populations: 2022*. Available at: http://www.smru.st-andrews.ac.uk/files/2024/02/scos-2023-interim-advice-final.pdf. Accessed on: 16 January 2025.

Scottish Government and NatureScot. (2020). *The Protection of Marine EPS from Injury and Disturbance for the marine Area in Scottish Inshore Waters*. Available at: https://www.gov.scot/publications/marine-european-protected-species-protection-from-injury-and-disturbance/. Accessed on: 23 October 2024.

SMRU (2023). *August Seal Counts – England*. Available at: http://www.smru.st-andrews.ac.uk/scos/scos-data/august-seal-counts/august-seal-counts-england/. Accessed on: 23 October 2024.

SNCBs (2017). *Joint SNCB Interim Displacement Advice Note*. Available at: https://data.jncc.gov.uk/data/9aecb87c-80c5-4cfb-9102-39f0228dcc9a/joint-sncb-interim-displacement-advice-note-2022.pdf. Accessed on: 23 October 2024.

Sparling, C. E. (2012). *Seagreen Firth of Forth Round 3 Zone Marine Mammal Surveys*. Available at: https://marine.gov.scot/sites/default/files/appendix_h1.pdf. Accessed on: 16 January 2025.

SSER (2022). *Berwick Bank Offshore EIA - Appendix 10.2 - Marine Mammals Technical Report*. Available at: https://marine.gov.scot/node/23315. Accessed on: 16 January 2025.

van Weelden, C., Towers, J. R., & Bosker, T. (2021). *Impacts of climate change on cetacean distribution, habitat and migration*. Climate Change Ecology, 1, 100009. Available at: https://doi.org/10.1016/j.biocon.2005.02.004. Accessed on: 16 January 2025.

Waggitt, J. J., Evans, P. G. H., Andrade, J., Banks, A. N., Boisseau, O., Bolton, M., Bradbury, G., Brereton, T., Camphuysen, C. J., Durinck, J., Felce, T., Fijn, R. C., Garcia-Baron, I., Garthe, S., Geelhoed, S. C. V., Gilles, A., Goodall, M., Haelters, J., Hamilton, S., Hiddink, J. G. (2020). *Distribution maps of cetacean and seabird populations in the North-East Atlantic*. Journal of Applied Ecology, 57(2), 253-269. Available at:https://doi.org/10.1111/1365-2664.13525. Accessed on: 16 January 2025.

Offshore Ornithology

Bogdanova, M.I., Regan, C., Gunn, C., Newell, M., Benninghaus, E., Langlois Lopez, S., Quintin, M., Searle, K., Daunt, F., Wishnewski, S., Cleasby, I., Witcutt, E., Kinching-Smith, D., Holmes, E., Fox, D., McCluskie, A., Whyte, K., Butler, A. and Jones, E.L. (2022). *Seabird GPS tracking on the Isle of May, Fowlsheugh and St Abb's Head in 2021 in relation to offshore wind farms in the Forth/Tay region.* Report to Neart na Gaoithe Offshore Wind Limited and SSE Renewables.

Brabant, R., Vanermen, N., Stienen, E. W. and Degraer, S. (2015). *Towards a Cumulative Collision Risk Assessment of Local and Migrating Birds in North Sea Offshore Wind Farms*. Hydrobiologia 756, 63-74pp.

Bradbury, G., Trinder, M., Furness, B., Banks, A.N., Caldow, R.W. and Hume, D. (2014). *Mapping seabird sensitivity to offshore wind farms*. PloS one, 9(9), p.e106366.

Carter, I.C., Williams, J.M., Webb, A. and Tasker, M.L. (1993). *Seabird concentrations in the North Sea: an atlas of vulnerability to surface pollutants*. Joint Nature Conservation Committee, Peterborough, 39pp

CIEEM (2022). *Guidelines for Ecological Impact Assessment in the UK and Ireland.* Available at: https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf

Cleasby, I. R., Owen, E., Wilson, L., Wakefield, E. D., O'Connell, P., & Bolton, M. (2020). *Identifying important at-sea areas for seabirds using species distribution models and hotspot mapping*. Biological Conservation, 241, 108375.

Daunt, F., Bogdanova, M., Newell, M., Harris, M. and Wanless, S. (2011a). *Literature Review of Foraging Distribution, Foraging Range and Feeding Behaviour of Common Guillemot, Razorbill, Atlantic Puffin, Black Legged Kittiwake and Northern Fulmar in the Forth/Tay Region.* Report to Forth and Tay Offshore Wind Developers' Group. Centre for Ecology and Hydrology, 177-190pp.

Davies, J. G., Humphreys, E. M., Evans, T., Howells, R. J., Hara-Murray, R. O., and Pearce-Higgins, J. W. (2023). *Seabird abundances projected to decline in response to climate change in Britain and Ireland*. Marine Ecology Progress Series 725: 121–140.

Defra (2019). *Holderness Offshore Marine Conservation Zone*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805479/mcz-holderness-2019.pdf. Accessed on: 03 October 2024.

Furness, R. W. (2015). *Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS).* Natural England Commissioned Report 164.

JNCC (2015a). *Natura 2000 Standard Data Form SPA: The Wash*. Available at: UK9008021.pdf (jncc.gov.uk). Accessed on: 03 October 2024.

JNCC (2015b). *Natura 2000 Standard Data Form SPA: Humber Estuary*. Available at: UK9006111.pdf (jncc.gov.uk). Accessed on: 03 October 2024.

JNCC (2018a). *Natura 2000 Standard Data Form SPA: Greater Wash*. Available at: UK9020329.pdf (jncc.gov.uk). Accessed on: 03 October 2024.

JNCC (2018b). *Natura 2000 Standard Data Form SPA: Flamborough and Filey Coast*. Available at: UK9006101.pdf (jncc.gov.uk). Accessed on: 03 October 2024.

JNCC (2018c). *Natura 2000 Standard Data Form SPA: Forth Islands*. Available at: UK9004171.pdf (jncc.gov.uk) Accessed on: 03 October 2024.

JNCC (2020). *Natura 2000 Standard Data Form SPA: Outer Firth of Forth and St Andrews Bay Complex.* Available at: UK9020316.pdf (jncc.gov.uk) Accessed on: 03 October 2024.

Harris, S.J., Baker, H., Balmer, D.E., Bolton, M., Burton, N.H.K., Caulfield, E., Clarke, J.A.E., Dunn, T.E., Evans, T.J., Hereward, H.R.F., Humphreys, E.M., Money, S. and O'Hanlon, N.J. 2024. *Seabird Population Trends and Causes of Change: 1986–2023, the annual report of the Seabird Monitoring Programme* ((https://www.bto.org/sites/default/files/publications/smp_annual_report_2021-23.pdf). BTO Research Report 771. British Trust for Ornithology, Thetford

JNCC (2022). *Natura 2000 Standard Data Form SPA: Fowlsheugh.* Available at: UK9002271.pdf (jncc.gov.uk). Accessed on: 03 October 2024.

Joint SNCB (2022). Interim Advice on The Treatment of Displacement For Red-Throated Diver. Available at: https://data.jncc.gov.uk/data/9aecb87c-80c5-4cfb-9102-39f0228dcc9a/interim-sncb-advice-rtd-displacement-buffer.pdf. Accessed on: 26 November 2024.

Kober, K., Webb, A., Win, I., Lewis, M., O'Brien, S., Wilson, L.J. and Reid, J.B. (2010*). An analysis of the numbers and distribution of seabirds within the British Fishery Limit aimed at identifying areas that qualify as possible marine SPAs*. JNCC Report No. 431.

NatureScot (2023). *NatureScot's guidance on marine renewable developments (Guidance Notes 1-9).* Available at: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/renewable-energy/marine-renewables/advice-marine-renewables-development Accessed on: 31 October 2024.

Ossian OWFL (2024). *Ossian Offshore Wind Farm Array EIA Report*. Available at: https://ossian-eia.com/. Accessed on: 03 December 2024.

Ossian OWFL (2025). *Ossian Offshore Wind Farm: Transmission Infrastructure. Habitats Regulations Assessment (HRA): Stage 1 LSE Screening Report.*

Parker, J., Banks, A., Fawcett, A., Axelsson, M., Rowell, H., Allen, S., Ludgate, C., Humphrey, O., Baker, A. and Copley, V. (2022a). *Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase I: Expectations for pre-application baseline data for designated nature conservation and landscape receptors to support offshore wind applications*.

Parker, J., Banks, A., Brown, E. and Copley, V. (2022b). *Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase II: Expectations for pre-application engagement and best practice advice for the evidence plan process*.

Parker, J., Fawcett, A., Banks, A., Rowson, T., Allen, S., Rowell, H., Harwood, A., Ludgate, C., Humphrey, O., Axelsson, M., Baker, A. and Copley, V. (2022c). *Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase III: Expectations for data analysis and presentation at examination for offshore wind applications*.

Parker, J., Fawcett, A., Rowson, T., Allen, S., Hodgkiss, R., Harwood, A., Caldow, R., Ludgate, C., Humphrey, O., and Copley, V. (2022d). *Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase IV: Expectations for monitoring and environmental requirements at the post-consent phase*.

Planning Inspectorate (2020). *Nationally Significant Infrastructure Projects: Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements*. Available at: Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements - GOV.UK (www.gov.uk). Accessed on: 31 October 2024.

Ossian OWFL (2023). *Ossian Array EIA Scoping Report.* Available at: https://marine.gov.scot/sites/default/files/ossian_wind_-_array_eia_scoping_report_-_eor0811a.pdf Accessed on: 31 October 2024.

Stienen, E.W., Waeyenberge, V., Kuijken, E. and Seys, J. (2007). *Trapped within the corridor of the southern North Sea: the potential impact of offshore wind farms on seabirds.* In: de Lucas, M., Janss, G.F.E. and Ferrer, M. (eds), Birds and Wind farms. (Madrid: Quercus).

Stone, C.J. Webb, A., Barton, C., Ratcliffe, N., Reed, T.C. Tasker, M.L. Camphuysen, C.J. and Pienkowski, M.W. (1995). *An atlas of seabird distribution in northwest European waters*. JNCC, Peterborough.

Waggitt, J., Evans, P., Andrade, J., Banks, A., Boisseau, O., Bolton, M., Bradbury, G., Brereton, T., Camphuysen, C., Durinck, J., Felce, T., Fijn, R., Garcia-Baron, I., Garthe, S., Geelhoed, S., Gilles, A., Goodall, M., Haelters, J., Hamilton, S., Hartny-Mills, L., Hodgins, N., James, K., Jessopp, M., Kavanagh, A., Leopold, M., Lohrengel, K., Louzao, M., Markones, N., Martínez-Cedeira, J., Ó Cadhla, O., Perry, S., Pierce, G., Ridoux, V., Robinson, K., Santos, M., Saavedra, C., Skov, H., Stienen, E., Sveegaard, S., Thompson, P., Vanermen, N., Wall, D., Webb, A., Wilson, J., Wanless, S. and Hiddink, J. (2019). *Distribution maps of cetacean and seabird populations in the North-East Atlantic*. Journal of Applied Ecology, 57(2), 253-269pp.

Wakefield, E.D., Owen, E., Baer, J., Carroll, M.J., Daunt, F., Dodd, S.G., Green, J.A., Guilford, T., Mavor, R.A., Miller, P.I., Newell, M.A., Newton, S.F., Robertson, G.S., Shoji, A., Soanes, L.M., Votier, S.C., Wanless, S. and Bolton, M. (2017). *Breeding density, fine-scale tracking, and large-scale modeling reveal the regional distribution of four seabird species*. Ecological Applications, 27(7), 2074-2091pp.

Wanless, S., Frederiksen, M., Daunt, F., Scott, B. E. and Harris, M. P. (2007). *Black-legged kittiwakes as indicators of environmental change in the North Sea: evidence from longterm studies.* Progress in Oceanography, 72 (1), 30-38pp.

Wanless, S., Harris, M.P., and Greenstreet, S.P.R. (1998). *Summer Sandeel Consumption by Seabirds Breeding in the Firth of Forth, southeast Scotland*. ICES Journal of Marine Science, 55*,* 1141–1151pp.

Welcker, J. and Nehls, G. (2016). *Displacement of seabirds by an offshore wind farm in the North Sea*. Marine Ecology Progress Series, 554 (1), 173-182pp.

Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. (2019). *Desk-based revision of seabird foraging ranges used for HRA screening. Report by the British Trust for Ornithology on behalf of NIRAS and The Crown Estate.* BTO Research Report No. 724

Woodward, I.D., Calbrade, N.A., Birtles, G.A., Peck, K., Wotton, S.R., Shaw, J.M., Balmer, D.E. and Frost, T.M. (2024). *Waterbirds in the UK 2022/23: The Wetland Bird Survey and Goose & Swan Monitoring Programme*. BTO/RSPB/JNCC/NatureScot. Thetford.

Žydelis, R., Small, C. and French, G. (2013). *The incidental catch of seabirds in gillnet fisheries: a global review*. Biological Conservation, 162 (1), 76-88pp.

Commercial Fisheries

ABPmer (2022). Spatial Squeeze in Fisheries Final Report. No.R3900.

Blyth-Skyrme, R. E. (2010). Options and opportunities for marine fisheries mitigation associated with windfarms: Summary report for COWRIE contract FISHMITIG09. COWRIE Ltd, c/o Nature Bureau, Newbury, UK**:** 8.

FLOWW (2014). FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison. Fishing Liaison with Offshore Wind and Wet Renewables Group. Available at: Recommendations for Fisheries Liaison | The European Maritime Spatial Planning Platform. Accessed on: 23 October 2024.

FLOWW (2015). FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds**:** 13.

ICPC (2009). Fishing and Submarine Cables - Working Together**:** 54.

Marine Scotland (2021). National Marine Plan Interactive. Available at: Marine Scotland - National Marine Plan Interactive. Accessed on: 25 October 2024.

Marine Scotland (2022). Good Practice Guidelines for Assessing Fisheries Displacement by other Licensed Marine Activities. The Scottish Government Report A303088-S00-REPT-002-A02.

MMO (2019). 2014 to 2018 UK fleet landings by ICES rectangle. Available at: UK sea fisheries annual statistics report 2018 - GOV.UK. Accessed on: 18 October 2024.

MMO (2024). UK fleet landings by rectangle stock port and EEZ 2019-2023. Available at: UK sea fisheries annual statistics report 2023 - GOV.UK. Accessed on: 07 January 2025.

Ossian OWFL (2023). Ossian Array EIA Scoping Report. Available at: OSSIAN Digital Array EIA Scoping Report. Accessed on: 15 October 2024.

Ossian OWFL (2024). Ossian Array EIA Report. Available from: OSSIAN Digital Consent Application / EIA Documents. Accessed on: 15 October 2024.

UKFEN (2012). Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments. Available at: Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments.pdf. Accessed on: 23 October 2024.

Shipping and Navigation

IMO (1972/77). Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) – Annex 3. London: IMO.

IMO (1974). International Convention for the Safety of Life at Sea. London: IMO.

MAIB (2023). MAIB Incident Data (20 Years). Southampton: MAIB.

Marine Directorate (2023). Twelve Months VMS Data. Edinburgh: Marine Directorate.

MCA (2021a). MGN 654 (Merchant and Fishing) Offshore Renewable Energy Installations (OREI) – Guidance on UK Navigational Practice, Safety and Emergency Response. Southampton: MCA.

IMO (2018). Revised Guidelines for Formal Safety Assessment. London: IMO.

MCA (2021b). MGN 661 Navigation: Safe and Responsible Anchoring and Fishing Practices.

MMO (2020). Twelve Months VMS Data. Newcastle: MMO.

RNLI (2023). RNLI Incident Data (10 Years). Poole: RNLI.

RYA (2019a). The RYA's Position on Offshore Energy Developments: Paper 1 – Wind Energy. Southampton: MCA.

RYA (2019b). UK Coastal Atlas of Recreational Boating. Southampton: RYA.

UKHO (2021). Admiralty Sailing Directions NP54 12th Edition.

UKHO (2024). Admiralty Charts 104, 107, 108, 121, 129, 1190, 1191, 1192, 1407, 268, 273, 1187, 2182A.

Marine Archaeology

Bicket, A. R., Tizzard, L. (2015). A review of the submerged prehistory and palaeolandscapes of the British Isles. Invited Review, Proceedings of the Geologists' Association 126(6): 643-663. doi:10.1016/j.pgeola.2015.08.009

Brooks, A. J., Bradley, S. L., Edwards, R. J. and Goodwyn, N. (2011). The palaeogeography of Northwest Europe during the last 20,000 years. Journal of Maps, pp.573-587

Chartered Institute for Archaeologists (2014). Code of Conduct. Available at: https://www.archaeologists.net/sites/default/files/CodesofConduct.pdf. Accessed on: 11 November 2024.

Chartered Institute for Archaeologists (2020). Standard and Guidance for Historic Environment Desk-Based Assessment. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf. Accessed on: 11 November 2024.

English Heritage and Bates, R., Dix, J. K., Plets, R. (2013). Marine Geophysics Data Acquisition, Processing and Interpretation Guidance Notes.

Gribble, J. and Leather, S. (2010). Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector. COWRIE.

HES (2020). Designation Policy and Selection Guidance. Available at: https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=8d8bbaeb-ce5a-46c1-a558-aa2500ff7d3b. Accessed on: 11 November 2024.

Historic England (2002). Military Aircraft Crash Sites: Guidance on their significance and future management.

Historic England (2008). Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment.

Historic England (2012) Ships and Boats: Prehistory to Present: Designation Selection Guide.

Historic England (2021). Commercial renewable energy development and the historic environment Historic England Advice Note 15.

Historic England. (2023). Curating the Palaeolithic. Available at: https://historicengland.org.uk/images-books/publications/curating-the-palaeolithic/heag313-curating-the-palaeolithic/. Accessed on: 11 November 2024

Holloway, L., Peacock, J., Smith, D. and Wood, A. (2002). A Windermere Interstadial marine sequence: environmental and relative sea level interpretation for the western Forth valley, Scotland. Scottish Journal of Geology, 38, pp.41-54

Hull City Council (2024). Historic Environment Record. Available at: https://www.hull.gov.uk/environment/humber-historic-environment-record. Accessed on: 11 November 2024

JNAPC (2006). Code of Practice for Seabed Development.

Lincolnshire County Council (2024). Historic Environment Record. Available at: https://www.lincolnshire.gov.uk/historic-environment/historic-environment-record. Accessed on: 11 November 2024

NatureScot (Previously Natural Environment Scotland) and Historic Environment Scotland (2018). Environmental Impact Assessment Handbook.

North Yorkshire County Council (2024) Historic Environment Record. Available at: https://www.northyorks.gov.uk/environment-and-neighbourhoods/conservation/accessing-archaeological-and-historic-environment-information. Accessed on: 11 November 2024

Ocean Infinity (2022). SSER ScotWind E1E Geophysical & Environmental Survey: Interpretive Report. Document number: 103995-SSE-MMT-SUR-REP-INTRE. Ocean Infinity, Sweden.

Ossian OWFL (2024). Ossian Array EIA Report: Appendix 19.1 Marine Archaeology Technical Report.

Peacock, J. (1999). The Pre-WIndermere Interstadial (Late Devensian) raised marine strata of eastern Scotland and their macrofauna: a review. Quaternary Science Reviews, 18, pp.1655-1680

Scottish Government (2010). Marine (Scotland) Act 2010. Available at: https://www.gov.scot/publications/environmental-report-changes-marine-conservation-order-provisions-under-marine-scotland-act-2010. Accessed on: 11 November 2024.

Scottish Government (2015). Scotland's National Marine Plan. Available at: https://www.gov.scot/publications/scotlands-national-marine-plan/. Accessed on: 26 October 2024.

Stoker, M., Golledge, N., Phillips, E., Wilkinson, I. and Akhurst, M. (2008). Lateglacial-Holocene shoreface progradation offshore eastern Scotland: a response to climatic and coastal hydrographic change. Boreas, 38, pp.292-314

TCE (2014). Protocol for Archaeological Discoveries: Offshore Renewables Projects. Available at: https://www.thecrownestate.co.uk/media/1782/ei-protocol-for-archaeological-discoveries-offshore-renewables-projects.pdf. Accessed on: 11 November 2024.

UK Government (1979). Ancient Monuments and Archaeological Areas Act 1979. Available at: Ancient Monuments and Archaeological Areas Act 1979. Accessed on: 11 November 2024.

UK Government (1986). Protection of Military Remains Act 1986. Available at: Protection of Military Remains Act 1986. Accessed on: 11 November 2024.

Wessex Archaeology (2007). COWRIE Historic Environment Guidance for the Offshore Renewable Energy Sector.

Wessex Archaeology for The Crown Estate (2021). Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects.

Other Sea Users

ABPmer (2008). *UK Atlas of Marine Renewable Energy.* Available at: https://www.renewables-atlas.info/. Accessed on: 28 October 2024.

Angling Trust (2024). *Find Fishing Info Venues, Clubs, Tackle Shops, Coaches, River Levels and Charter Boats*. Available at: Map - Angling Trust. Accessed on: 12 November 2024.

Charter Boats UK (CBUK) (2023). *UK Charter Boats*. Available at: https://www.charterboats-uk.co.uk/. Accessed on: 30 January 2025.

E.ON (2008). *Humber Gateway, Environmental Statement. Report by E.ON*. Available at: Humber Gateway, Environmental Statement | Tethys. Accessed on: 16 December 2024.

EMODnet (2024). *Human Activities Interactive Map*. Available at: EMODnet Map Viewer. Accessed on: 15 December 2024.

ESCA (2023). *Guideline No. 6, The Proximity of Offshore Renewable Energy Installations & Submarine Cable Infrastructure in UK Waters*. Executive Committee**:** 44.

Forewind (2014). *Dogger Bank Teesside A&B Environmental Statement Chapter 17 Other Marine Users*. Available at: DOGGER BANK. Accessed on: 16 December 2024.

GoBe (2021). *Hornsea Project Four: Environmental Statement (ES) Volume A2, Chapter 11: Infrastructure and Other Users*. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-000713-A2.11%20ES%20Volume%20A2%20Chapter%2011%20Infrastructure%20and%20Other%20Users.pdf. Accessed on: 16 December 2024.

GoBe (2024). *Outer Dowsing Offshore Wind Farm Environmental Statement Chapter 18 Marine Infrastructure and Other Users Volume 1*. Available at: Chapter 18 Infrastructure and Other Marine Users. Accessed on: 16 October 2024.

ICPC (2013). *Recommendation No.13- 2C: The proximity of offshore renewable wind energy installations and submarine cable infrastructure in national waters*.

ICPC (2014). *Recommendation No. 3- 10C: Telecommunications Cable and Oil Pipeline/Power Cables Crossing Criteria*.

Kis-Orca (2019). *Offshore Renewable & Cable Awareness Map*. Available atfrom: Map | KIS-ORCA . Accessed on: 15 November 2024.

National Grid (2024). *Eastern Green Link 3 and Eastern green Link 4 Environmental Impact Assessment Scoping Report Volume 1 Main Text Part 3 English Offshore Scheme*. Available at: EN0210003-000012-EGLK - Scoping Report - Volume 1 Part 3.pdf. Accessed on: 03 November 2024.

NMPi (2024). *National Marine Plan Interactive Webmap*. Available at: Marine Scotland - National Marine Plan Interactive. Accessed on: 05 November 2024.

NSTA (2024). *Offshore Oil and Gas Activity*. Available at: Offshore Activity Accessed on: 03 November 2024.

Oil and Gas UK (2021) *Pipeline crossing agreement and proximity agreement pack*.

Planning Inspectorate (2020). *Nationally Significant Infrastructure Projects: Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements.* Available at: Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements - GOV.UK (www.gov.uk). Accessed on: 29 October 2024.

RYA (2019). *UK Coastal Atlas of Recreational Boating*. Southampton: RYA.

Surfline (2024). *East Lindsey Travel and Surf Guide*. Available at: https://www.surfline.com/travel/united-kingdom/england/lincolnshire/east-lindsey-surfing-and-beaches/7290589. Accessed on: 19 November 2024.

TCE (2012). *The Crown Estate Guidance: Submarine cables and offshore renewable energy installation- Proximity study*. Available at: submarine-cables-and-offshore-renewable-energy-installations-proximity-study.pdf. Accessed on: 04 November 2024.

TGS (2024). *Global Offshore Map*. Available at: Global Offshore Renewables Map | 4C Offshore. Accessed on: 05 November 2024.

UK Diving (2010). *UK & Ireland Wreck Map Northeast England*. Available at: UK Diving Wrecks. Accessed on: 29 October 2024.

Visit England (2024). *North East England*. Available at: Explore North East England Attractions | VisitEngland. Accessed on: 16 December 2024.

Water Quality

ABPmer (2024). *UK Atlas of Marine Renewable Energy.* Available at: https://www.renewables-atlas.info/. Accessed on: 28 October 2024.

Cefas (2024). *Cefas Action Level Action viewer*. Online Resource, Available at: https://rconnect.cefas.co.uk/action_levels_tool/. Accessed on: 31 October 2024.

DEFRA (2024). *Water Framework Directive: shellfish protected areas. List of areas designated as shellfish protected areas in England*. Available at: https://www.gov.uk/government/publications/water-framework-directive-shellfish-protected-areas. Accessed on: 31 October 2024.

DEFRA (2021a). *Water Quality Archive*. Available at: https://environment.data.gov.uk/water-quality/view/explore?search=&area=1-3&samplingPointType.group=C&samplingPointStatus%5B%5D=open&loc=&_limit=500. Accessed on: 11 November 2024.

DEFRA (2021b). *North East Inshore and North East Offshore Marine Plan*. Available at: https://assets.publishing.service.gov.uk/media/60f6f3df8fa8f50c7450ebf1/FINAL_North_East_Marine_Plan__1_.pdf. Accessed on: 27 January 2025.

DOME (2023). *DOME (Marine Environment) Data Portal*. Available at: https://www.ices.dk//data/data-portals/Pages/DOME.aspx. Accessed on: 31 October 2024.

Environment Agency (2022). *River Basin Management Plans, Updated 2022: Current Condition and Environmental Objectives. Protected Areas Data for Anglian River Basin District: Shellfish Waters.* Available at https://environment.data.gov.uk/catchment-planning/v/c3-plan/RiverBasinDistrict/5/protected-areas/shellfish-waters.csv. Accessed on: 27 January 2025.

Environment Agency (2024). *2024 Bathing Water Profile for Sutton-on-Sea*. Available at: https://environment.data.gov.uk/bwq/profiles/profile.html?site=ukf3102-09200. Accessed on: 31 October 2024.

EnBW bp (2023). *Morven Offshore Wind Farm Scoping Report*. Available at: https://marine.gov.scot/node/23899. Accessed on: 31 October 2024.European Union (2008). *Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)*. 2008. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0056.

MD-LOT (2023). *Scoping Opinion for Ossian Array*. Available at: https://marine.gov.scot/sites/default/files/ossian_array_-_scoping_opinion.pdf. Accessed on: 07 February 2025.

National Grid (2024). *Eastern Green Link 3 and Eastern Green Link 4*. Available at: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN0210003/documents. Accessed on: 31 October 2024.

Ossian OWFL (2024). *Ossian Array: EIA Report*. Available at: OSSIAN Digital Consent Application / EIA Documents. Accessed on 13 January 2025.

UK Government (2009). *Marine and Coastal Access Act.* 2009. Available at: https://www.legislation.gov.uk/ukpga/2009/23/contents. Accessed on: 05 December 2024.

UK Government (2010). *The Marine Strategy Regulations.* 2010. Available at: https://www.legislation.gov.uk/uksi/2010/1627. Accessed on: 05 December 2024.

UK Government (2011). *UK Marine Policy statement.* 2011. Available at: https://www.gov.uk/government/publications/uk-marine-policy-statement. Accessed on: 05 December 2024.

UK Government (2017). *The Water Environment (WFD) (England and Wales) Regulations.* 2017. Available at: https://www.legislation.gov.uk/uksi/2017/407/contents. Accessed on 05 December 2024.

UK Government (2019). *Guidance: Land affected by contamination*. Available at: https://www.gov.uk/guidance/land-affected-by-contamination. Accessed on: 01 November 2024.

UK Government (2019). *The Environment (Amendment etc.) (EU Exit) Regulations*. 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176276. Accessed on: 05 December 2024.

UK Government (2024). *Bathing waters: list of designated waters in England*. Available at: https://www.gov.uk/government/publications/bathing-waters-list-of-designated-waters-in-england. Accessed on: 31 October 2024.

12.3. Part 3

Amphibian and Reptile Groups of the United Kingdom (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. ARGUK

Anon. (2008) Common Standards Monitoring Guidance for Terrestrial and freshwater invertebrates. Version March 2008. Joint Nature Conservation Committee, Peterborough. Online publication: https://hub.jncc.gov.uk/ assets/80873e1e-63eb-44a0-925cb5edec5fa3fd

Anon. (2015) Common Standards Monitoring (CSM) Guidance for Freshwater fauna. Version October 2015. Joint Nature Conservation Committee, Peterborough. Online publication: https://data.jncc. gov.uk/data/9b80b827-b44b4965-be8e-ff3b6cb39c8e/CSMFreshwaterFauna-2015.pdf

Black Sluice (2022) Internal Drainage Board Guidance for Property Owners and Developers [Online] Available at: https://www.blacksluiceidb.gov.uk/site/assets/files/1052/2022_04_01_guidance_for_owners_developers_april_2022.pdf [Accessed December 2024]

Black Sluice (2024) Black Sluice IDB, Website, [Online] Available at https://www.blacksluiceidb.gov.uk/ [Accessed December 2024]

BLM (1985) Manual 3031 Energy and Mineral Resource Assessment.

BSI (1991a) BS 7445:1991 – Part 2 Description and measurement of environmental noise. Guide to the acquisition of data pertinent to land use. Available at: https://knowledge.bsigroup.com/ Accessed on: December 2024

BSI (1991b) BS 7445:1991 – Part 3 Description and measurement of environmental noise. Guide to application to noise limits. Available at: https://knowledge.bsigroup.com/ Accessed on: December 2024

BSI (2003) BS 7445:2003 – Part 1 Description and measurement of environmental noise. Guide to quantities and procedures. Available at: https://knowledge.bsigroup.com/ Accessed on: December 2024

BSI (2014) BS 5228:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration. Available at: https://knowledge.bsigroup.com/ Accessed on: December 2024

BSI (2019) BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound. Available at: https://knowledge.bsigroup.com/ Accessed on: December 2024

BSI (2020) British Standard requirement for 'Soil quality - conceptual site models for potentially contaminated sites'. BS EN ISO 21365:2020.

BSSS (2022) Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction.

Cave, B., Claßen, T., Fischer-Bonde, B., Humboldt-Dachroeden, S., Martin-Olmedo, P., Mekel, O., Pyper, R., Silva, F., Viliani, F., Xiao, Y., (2020). Human health: Ensuring a high level of protection A reference paper on addressing Human Health in Environmental Impact Assessment As per EU Directive 2011/92/EU amended by 2014/52/EU.

Chanin, P. (2003) Ecology of the European Otter. Conserving Natura 2000 Rivers. Ecology Series No. 10. English Nature (now Natural England), Peterborough.

CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.3. Winchester: Chartered Institute of Ecology and Environmental Management.

CIfAS (2020a) Chartered Institute for Archaeologists' Standard and guidance for historic environment desk-based assessment. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf

CIfAS (2020b) Chartered Institute for Archaeologists' Standard and guidance for archaeological geophysical survey. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GGeophysics_3.pdf

CIfAS (2023) Chartered Institute for Archaeologists' Standard for archaeological field evaluation. Available at: https://www.archaeologists.net/sites/default/files/Standard%20for%20archaeological%20field%20evaluation.pdf

CIRIA (2001a) Document C552 - Contaminated Land Risk Assessment: A Guide to Good Practice.

CIRIA (2001b) Document C532 - Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors.

CIRIA (2006a) Document C649: Control of water pollution from linear construction projects.

CIRIA (2006b) Document C648: Control of water pollution from linear construction projects. Technical guidance.

CIRIA (2006c) *Designing for Exceedance in Urban Drainage – Good Practice*, Westminster, London, CIRIA

CIRIA (2007a) Document C665: Assessing Risks Posed by Hazardous Ground Gases to Buildings.

CIRIA (2007b) *Site Handbook for the Construction of SuDS* (C698), Westminster, London, CIRIA.

CIRIA (2010) *Environmental Good Practice on Site (third edition)* (C692), Westminster, London, CIRIA

CIRIA (2015a) *The SuDS manual* (C753), Westminster, London, CIRIA

Collins, J. (ed) (2024) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

Dean, M., Strachan, R., God, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Channin. Mammal Society, London.

Defra (2007) Hedgerow Survey Handbook – A standard procedure for local surveys in the UK. Second edition.

Defra (2009) Construction Code of Practice for Sustainable Use of Soils on Construction Sites.

Defra (2010) Noise Policy Statement for England (NPSE). Available at: https://www.gov.uk/government/publications/noise-policy-statement-for-england Accessed on: December 2024.

Defra (2012) Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.

Defra (2022) Local Air Quality Management Technical Guidance: LAQM.TG22. Available at: https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/ Accessed on: December 2024

Defra (2024) Magic Interactive Mapping System [Online] Available at https://magic.defra.gov.uk/magicmap.aspx [Accessed December 2024]

Department for Energy and Climate Change, Energy Security & Net Zero, (2012). Power Lines: Demonstrating compliance with EMF public exposure guidelines A voluntary Code of Practice.

Department for Levelling Up, Housing and Communities (2019) Planning Practice Guidance – Noise. Available at: https://www.gov.uk/government/collections/planning-practice-guidance Accessed on: December 2024.

Department for Levelling Up, Housing and Communities (2022) Flood risk and coastal change [Online] Available at: https://www.gov.uk/guidance/flood-risk-and-coastal-change [Accessed December 2024].

Department for Levelling Up, Housing and Communities (2022) Flood risk and coastal change [Online] Available at: https://www.gov.uk/guidance/flood-risk-and-coastal-change [Accessed December 2024].

Department for Transport (1988) Calculation of Road Traffic Noise. Available at: https://knowledge.bsigroup.com/ Accessed on: December 2024

Department for Transport Circular (2022) Strategic Road Network and the Delivery of Sustainable Development.

Drake, C.M., Lott, D.A., Alexander, K.N.A. & Webb, J.R (2007) Surveying terrestrial and freshwater invertebrates for conservation evaluation. Natural England Research Report NERR005. Natural England, Sheffield

EAC (2016) Guidelines for the Use of Geophysics in Archaeology: Questions to ask and Points to Consider.

East Lindsey District Council (2017) Strategic Flood Risk Assessment [Online] Available at https://www.e-lindsey.gov.uk/article/6200/Strategic-Flood-Risk-Assessment [Accessed December 2024]

English Heritage (2008) Conservation Principles, Policies and Guidance for the sustainable management of the historic environment. Available at: https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/

English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature (now Natural England), Peterborough.

Environment Agency (2018) Environment Agency's approach to Groundwater Protection, [Online] Available at https://assets.publishing.service.gov.uk/media/5ab38864e5274a3dc898e29b/Environment-Agency-approach-to-groundwater-protection.pdf, [Accessed December 2024]

Environment Agency (2018) The Environment Agency's approach to groundwater protection, version 1.2.

Environment Agency (2019) EA Statutory Main River Map [Online] Available at https://www.gov.uk/government/collections/main-river-map-for-england-proposed-changes-and-decisions [Accessed December 2024]

Environment Agency (2020) Land Contamination: Risk Management.Environment Agency (2014) *Former Pollution Prevention Guidance Notes*, Available at https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg [Accessed December 2024]

Environment Agency (2020a) Land Contamination: Risk Management.

Environment Agency (2020b) Flood risk assessments: Climate Change Allowances, [Online] Available at https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances, [Accessed December 2024]

Environment Agency (2021) Flood map for planning [Online] Available at https://flood-map-for-planning.service.gov.uk/ [Accessed December 2024]

Environment Agency (2022) Anglian river basin district river basin management plan, [Online] Available at https://www.gov.uk/guidance/anglian-river-basin-district-river-basin-management-plan-updated-2022 [Accessed December 2024]

Environment Agency (2024a) Long Term Flood Risk Mapping [Online] Available at https://www.gov.uk/check-long-term-flood-risk [Accessed December 2024]

Environment Agency (2024b) Catchment Data Explorer [Online] Available at https://environment.data.gov.uk/catchment-planning/ [Accessed December 2024]

Environment Agency (2024c) EA Historical Flood Extents Map [Online] Available at https://www.data.gov.uk/dataset/76292bec-7d8b-43e8-9c98-02734fd89c81/historic-flood-map [Accessed December 2024]

Environment Agency (2024d) EA Spatial Flood Defences Map [Online] Available at https://www.data.gov.uk/dataset/cc76738e-fc17-49f9-a216-977c61858dda/aims-spatial-flood-defences-inc-standardised-attributes [Accessed December 2024]

Environment Agency (2024e) Flamborough Head to Gibraltar Point Shoreline Management Plan 3 [Online] Available at https://environment.data.gov.uk/shoreline-planning/shoreline-management-plan/SMP3 [Accessed December 2024]

Froglife (1999) Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

Giles, N, Sands R, and Fasham, M (2005) Fish in: Hill D, Fasham M, Tucker P, Shewry M and Shaw P (eds) Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring, 368-386. Cambridge University Press, Cambridge

Goodship, N.M. and Furness, R.W (2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

Harris, S., Cresswell, P. and Jefferies, D. (1989) Surveying Badgers. Occasional Publication No. 9. The Mammal Society, London.

Health and Safety Executive (2013). First aid at work: Guidance on regulations L74 (Third edition).

Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2019) DMRB Sustainability and Environment Appraisal, LA109: Geology and Soils.

Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2020a) LA104: Environmental assessment and monitoring.

Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2020b) DMRB LA113: Road drainage and the water environment.

Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2020c) DMRB LA 112 Population and Human Health.

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020d) Design Manual for Roads and Bridges (DMRB) LA 106, Cultural heritage assessment, Revision 1. Available at https://www.standardsforhighways.co.uk/tses/attachments/8c51c51b-579b-405b-b583-9b584e996c80?inline=true

Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2020e) DMRB LA111 – Noise and Vibration. Available at: https://www.standardsforhighways.co.uk/ Accessed on: December 2024.

Historic England (2015a) Good Practice Advice in Planning: 2 Managing Significance in Decision-Taking in the Historic Environment. Available at: https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/

Historic England (2015b) Geoarchaeology: Using earth sciences to understand the archaeological record. Available at: https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record

Historic England (2016) Preserving Archaeological Remains: Decision-taking for Sites under Development. Available at: https://historicengland.org.uk/images-books/publications/preserving-archaeological-remainshttps://historicengland.org.uk/images-books/publications/preserving-archaeological-remains

Historic England (2017) The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition). Available at: https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/

Historic England (2019) Piling and Archaeology: Guidance and Good Practice. Available at: https://historicengland.org.uk/images-books/publications/piling-and-archaeology/

Historic England (2020) Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits. Available at: https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology

Hötker, H., Thomsen, K.-M. & H. Jeromin (2006). Impacts on biodiversity of exploitation of renewable energy sources: the example of birds and bats - facts, gaps in knowledge, demands for further research, and ornithological guidelines for the development of renewable energy exploitation. Michael-Otto-Institut im NABU, Bergenhusen.

IAQM (2024) Guidance on the assessment of dust from demolition and construction. Available at: https://iaqm.co.uk/guidance/. Accessed on: December 2024

IAQM and EPUK (2017) Land-Use Planning & Development Control: Planning for Air Quality. Available at: https://iaqm.co.uk/guidance/. Accessed on: December 2024

ICNIRP (1998). ICNIRP Guidelines for Limiting Exposure To Time-Varying Electric, Magnetic And Electromagnetic Fields (Up To 300 Ghz). International Commission.

ICNIRP (2010). ICNIRP Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields (1-100 kHz). International Commission.

IEMA (2014) Guidelines for Environmental Noise Impact Assessment. Available at: https://www.iema.net/ Accessed on: December 2024.

IEMA (2016). Environmental Impact Assessment Guide to: Delivering Quality Development. IEMA, Lincoln.

IEMA (2021) Principles of Cultural Heritage Impact Assessment in the UK. Available at: https://www.iema.net/resources/blog/2021/07/20/launch-of-principles-of-cultural-heritage-impact-assessment

IEMA (2022) A New Perspective on Land and Soil in Environmental Impact Assessment.

IEMA (2023) Environmental Assessment of Traffic and Movement. Available at: https://www.iema.net/ Accessed on: December 2024

IQ (2021) Good Practice Guide for Handling Soils in Mineral Workings.

ISO (2024) ISO 9613-2:2024 - Acoustics - Attenuation of sound during propagation outdoors - Part 2: Engineering method for the prediction of sound pressure levels outdoors. Available at: https://www.iso.org/home.html Accessed on: December 2024.

Jukes, A. (2021) Considering invertebrates in Preliminary Ecological Appraisals. In Practice. Issue 111; pages 40-45. CIEEM, Winchester.

Landscape Institute (2019) Technical Guidance Note 06/19 Visual Representation of Development Proposals, September.

Landscape Institute (2021) Technical Guidance Note 02/21 Assessing landscape value outside national designations.

Landscape Institute and the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment: Third Edition. April 2013.

Landscape Institute and the Institute of Environmental Management and Assessment (2024) Technical Guidance Note LITGN-2024-01: Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment: Third Edition.

Lincolnshire County Council (2024) Lincolnshire Archaeology Handbook. Available at: https://www.lincolnshire.gov.uk/downloads/file/2204/archaeology-handbook-pdfa

Lindsay Marsh IDB (2024) Lindsay Marsh IDB [Online] Available at https://www.wmc-idbs.org.uk/ [Accessed December 2024]

MAFF (1988) Ministry of Agriculture, Fisheries and Food (MAFF) Agricultural Land Classification (ALC) guidelines.

MHCLG (2014) Planning Practice Guidance: Travel Plans, Transport Assessments and Statements. Available at: https://www.gov.uk/government/collections/planning-practice-guidance Accessed on: December 2024

MHCLG and Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2019) Planning Practice Guidance: Historic environment. Available at: Historic environment - GOV.UK

MHCLG and Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2021) Planning Practice Guidance. Available at: https://www.gov.uk/government/collections/planning-practice-guidance

MHCLG and Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2022) Planning Practice Guidance. Available at: https://www.gov.uk/guidance/flood-risk-and-coastal-change

National Grid (2015). Undergrounding high voltage electricity transmission lines: The technical issues.

National Highways, Transport Scotland, Welsh Government and Department for Infrastructure (2024) DMRB LA 105 – Air Quality. Available at: https://www.standardsforhighways.co.uk Accessed on: December 2024

Natural England (2012) Agricultural Land Classification; protecting the best and most versatile agricultural land.

Natural England (2014) An Approach to Landscape Character Assessment (2014).

North Kesteven (2009) Strategic Flood Risk Assessment [Online] Available at https://www.n-kesteven.gov.uk/sites/default/files/2023-03/E028%20North%20Kesteven%20Strategic%20Flood%20Risk%20Assessment.pdf [Accessed December 2024]

Office for National Statistics (2021). Office for National Statistics Census.

OHID (2024). Fingertips: Public Health Data [online]. Available at: https://fingertips.phe.org.uk/. Access on: (accessed December 2024).

ONS (2024). Official census and labour market statistics [online]. Available at: https://www.nomisweb.co.uk/. Accessed on (accessed: December 2024).

Ordnance Survey (2024) OS Digital Terrain Model (DTM) 50 [Online] Available at https://www.ordnancesurvey.co.uk/products/os-terrain-50 [Accessed December 2024]

Public Health England (2020). Health Impact Assessment in spatial planning. A guide for local authority public health and planning teams. London.

Public Health England (2021). Advice on the content of Environmental Statements accompanying an application under the Nationally Significant Infrastructure Planning Regime.

Pyper, R., Lamming, M., Beard, C., Buroni, A., Douglas, M., Turton, P., Hardy, K., Netherton, A., McClenaghan, R., Barratt, T., Bhatt, A., Cave, B., Gibson, G., (2022a). IEMA Guide: Effective Scoping of Human Health in Environmental Impact Assessment. England: Institute of Environmental Management and Assessment.

Pyper, R., Waples, H., Barratt, T., Hardy, K., Turton, P., Netherton, A., McDonald, J., Buroni, A., Bhatt, A. (2022b). IEMA Guide: Determining Significance for Human Health in Environmental Impact Assessment. Institute of Environmental Management and Assessment.

Rodwell, J.S. (2006) National Vegetation Classification User's Handbook. Joint Nature Conservation Committee, Peterborough

Scottish Natural Heritage, now NatureScot (2016). Assessing Connectivity with Special Protection Areas (SPAs), Guidance Document, Version 3. Scottish Natural Heritage. Available at: https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf. Accessed November 2024.

Scottish Natural Heritage, now NatureScot (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. March 2017. Version 2. Available at: https://www.nature.scot/sites/default/files/2018-06/Guidance%20Note%20-%20Recommended%20bird%20survey%20methods%20to%20inform%20impact%20assessment%20of%20onshore%20windfarms.pdf. Accessed December 2024.

South East Lincolnshire (2017) Strategic Flood Risk Assessment [Online] Available at https://southeastlincslocalplan.org/article/25230/South-East-Lincolnshire-Strategic-Flood-Risk-Assessment [Accessed December 2024]

South Holland Drainage Board (2024) South Holland IDB Website [Online] Available at https://www.wlma.org.uk/south-holland-idb/home/ [Accessed December 2024]

South Kesteven District Council (2017) Strategic Flood Risk Assessment [Online] Available at https://www.southkesteven.gov.uk/sites/default/files/2023-08/SFRA%20Level%201%20%281of2%29.pdf [Accessed December 2024]

UK Health Security Agency (2013). Electric and magnetic fields: health effects of exposure.

UK Health Security Agency (2024). Guidance Electric and magnetic fields: reducing exposure Safety advice on electric and magnetic fields in our homes and near power lines.

UKHab Ltd. UK Habitat Classification Version 2.0 (at: https://ukhab.org/)

Water Management Alliance (2024) Land Drainage Consent – Guidance for Applicants, [Online] Available at https://www.wlma.org.uk/uploads/01_LDC_Guidance-v5.pdf [Accessed December 2024]

Water Management Consortium (2018) Advice Note AN02: Culverts and Bridges, [Online] Available at https://www.wmc-idbs.org.uk/planning-consenting, [Accessed December 2024]

Water Management Consortium (2019) Advice Note AN03: Environmental Considerations, [Online] Available at https://www.wmc-idbs.org.uk/planning-consenting, [Accessed December 2024]

Water Management Consortium (2023) Water Management Consortium Advice Note AN01: Buildings, Structures, Planting And Fencing, [Online] Available at https://www.wmc-idbs.org.uk/planning-consenting, [Accessed December 2024]

Water Management Consortium (2023a) Advice Note AN05: Service Crossings, [Online] Available at https://www.wmc-idbs.org.uk/planning-consenting, [Accessed December 2024]

Water Management Consortium (2023b) Advice Note AN06: Surface Water, [Online] Available at https://www.wmc-idbs.org.uk/planning-consenting, [Accessed December 2024]

Welland and Deepings IDB (2024) Welland and Deeping IDB Website, [Online] Available at https://www.wellandidb.org.uk/ [Accessed December 2024]

WHO (2000) Guidelines for Community Noise. Available at: https://www.who.int/publications/i/item/a68672 Accessed on: December 2024.

Williams, P. (2013) GCN eDNA Protocol. Freshwater Habitats Trust

Winkler, M., Viliani, F., Knoblauch, A., Cave, B., Divall, M., Ramesh, G., Harris-Roxas, B., Furu, P. (2021). Health impact assessment international best practice principles (International Association for Impact Assessment).

Witham Fourth District IDB (2024) Witham Fourth District IDB Website [Online} Available at https://www.w4idb.co.uk/ [Accessed December 2024]

Zetica 2025) Zetica Risk Maps. Available at: https://zeticauxo.com/guidance/risk-maps/ Accessed February 2025.

12.4. Part 4

BEIS (2021) *Net Zero Strategy: Build Back Greener*. Available at: https://www.gov.uk/government/publications/net-zero-strategy Accessed on: 23 December 2024.

BEIS (2022) *UK Offshore Energy Strategic Environmental Assessment: Appendix 1F: Climate & Meteorology*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504559/OESEA3_A1f_Climate___Meteorology.pdf. Accessed on: 23 December 2024.

BSI (2023) *PAS 2080:2023: Carbon Management in Infrastructure and Built Environment*. Available at: https://www.bsigroup.com/en-GB/insights-and-media/insights/brochures/pas-2080-carbon-management-in-infrastructure-and-built-environment/. Accessed on: 23 December 2024.

Cunningham, C. and Hunt, C. (2023) *Scottish Blue Carbon – a literature review of the current evidence for Scotland's blue carbon habitats*. NatureScot Research Report 1326. Available at: https://www.nature.scot/doc/naturescot-research-report-1326-scottish-blue-carbon-literature-review-current-evidence-scotlands. Accessed on: 23 December 2024.

DESNZ (2023) *Powering Up Britain: Net Zero Growth Plan*. Available at: https://www.gov.uk/government/publications/powering-up-britain/powering-up-britain-net-zero-growth-plan. Accessed on: 23 December 2024.

DESNZ and Defra (2024) *Conversation Factors 2021*. https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024. Accessed on: 23 December 2024.

DESNZ and Defra (2024) *Digest of UK Energy Statistics (DUKES)*. Available at: https://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes. Accessed on: 23 December 2024.

Greater Lincolnshire LEP (2014) Strategic Economic Plan 2014-2030 Available at: https://www.greaterlincolnshirelep.co.uk/assets/documents/Strategic_Economic_Plan_2016_Refresh.pdf. Accessed on: 10 January 2025.

Gregg, R., Elias, J., Alonso, I., Crosher, I., Muto, P., and Morecroft, M. (2021) *Carbon storage and sequestration by habitat: a review of the evidence (second edition)*. Natural England Research Report NERR094. Natural England, York.

IEMA (2020) *Environmental Impact Assessment Guide to Climate Change Resilience & Adaptation*.

IEMA (2022) *Environmental Impact Assessment Guide to Assessing Greenhouse Gas Emissions and Evaluating their Significance* (2nd Edition).

IPCC (2021) *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press.

Jones, C. and Hammond, G. (2019) *ICE (Inventory of Carbon and Energy)*.

Marine Scotland (2022) Defining 'Local Areas' for assessing impacts of offshore renewables and other marine developments: Guidance Principles. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2022/06/defining-local-area-assessing-impact-offshore-renewables-marine-developments-guidance-principles/documents/marine-scotland-defining-local-area-assessing-impact-offshore-renewables-marine-developments-guidance-principles/marine-scotland-defining-local-area-assessing-impact-offshore-renewables-marine-developments-guidance-principles/govscot%3Adocument/marine-scotland-defining-local-area-assessing-impact-offshore-renewables-marine-developments-guidance-principles.pdf. Accessed on: 10 January 2025.

Met Office (2020) *UK Climate Averages*. Available at: https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages. Accessed on: 23 December 2024.

Met Office Hadley Centre (2024) *UK Climate Projections User Interface v2.11.0*. Available at: https://ukclimateprojections-ui.metoffice.gov.uk/ui/home. Accessed on: 23 December 2024.

Natural England (2024) *Peaty Soils Location (England).* Available at: https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::peaty-soils-location-england/explore?location=54.101848%2C-1.027398%2C7.83. Accessed on: 23 December 2024.

Offshore Renewable Energy Catapult (2020) The Offshore Wind O&M Opportunity. Available at: https://ore.catapult.org.uk/wp-content/uploads/2021/05/Catapult-Offshore-Wind-OM_final-050521.pdf. Accessed on: 10 January 2025.

Offshore Wind Industry Council (2021) People Skills Survey 2021-2026. Available at: https://aura-innovation.co.uk/wp-content/uploads/2021/03/OWIC-Offshore-Wind-Skills-Intelligence-report-2021-26-reduced-size.pdf. Accessed on: 10 January 2025.

OneClick LCA (2023) *Carbon Heroes Benchmarks*. Available at: https://oneclicklca.zendesk.com/hc/en-us/articles/360015230580-Carbon-Heroes-Benchmarks. Accessed on: 23 December 2024.

ONS (2020) Principal Population Projections. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2018based. Accessed on: 10 January 2025.

ONS (2024a) Annual Survey of Hours and Earnings 2023. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=30. Accessed on: 10 January 2025.

ONS (2024b) Business Register and Employment Survey 2022 and 2023. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=189. Accessed on: 10 January 2025.

ONS (2024c) Annual Population Survey 2023. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=17. Accessed on: 10 January 2025.

Ossian Array (2024) Ossian Array Environmental Impact Assessment. Available at: https://static1.squarespace.com/static/6388a03e1b6b485b78fd5dfa/t/6697875279a2da2564cc42d2/1721206612604/volume_2_-_technical_assessments_-_chapter_18_-_socio-economics_-_redacted.pdf. Accessed on: 10 January 2025.

Ossian Offshore Wind Farm Limited (2023) Supply Chain Development Statement Outlook. Available at: https://www.crownestatescotland.com/sites/default/files/2023-07/ossian-offshore-wind-farm-scds-outlook-july-2023-update.pdf. Accessed on: 10 January 2025.

Palmer, M., Howard, T., Tinker, J., Lowe, J., Bricheno, L., Calvert, D., Edwards, T., Gregory, J., Harris, G., Krijnen, J., Pickering, M., Roberts, C. and Wolf, J. (2018). UKCP18 Marine Report. Available at: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-marine-report-updated.pdf. Accessed on: 23 December 2024.

RenewableUK, Offshore Wind Industry Council, The Crown Estate and Crown Estate Scotland (2024) 2024 Offshore Wind Industrial Growth Plan. Available at: https://www.thecrownestate.co.uk/news/offshore-wind-industry-unveils-industrial-growth-plan-to-create-jobs. Accessed on: 10 January 2025.

RICS (2012) RICS information paper IP 32/2012: *Methodology to calculate embodied carbon of materials*. 1st Edition. RICS, London.

UK Government (2020) The Offshore Wind Sector Deal. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790950/BEIS_Offshore_Wind_Single_Pages_web_optimised.pdf. Accessed on: 10 January 2025.

UK Government (2023) Offshore Wind Net Zero Investment Roadmap. Available at: https://assets.publishing.service.gov.uk/media/64a54c674dd8b3000f7fa4c9/offshore-wind-investment-roadmap.pdf. Accessed on: 10 January 2025.

UK Government (2024a) Invest 2035: the UK's modern industrial strategy. Available at: https://www.gov.uk/government/consultations/invest-2035-the-uks-modern-industrial-strategy/invest-2035-the-uks-modern-industrial-strategy. Accessed on: 10 January 2025.

UK Government (2024b) Plan for Change. Available at: https://www.gov.uk/missions. Accessed on: 10 January 2025.

UK Government (2024c) Make Britain a Clean Energy Superpower. Available at: https://www.gov.uk/missions/clean-energy. Accessed on: 10 January 2025.

UK Government (2024d) Clean Power by 2030, Action Plan: A new era of clean electricity. Available at: https://assets.publishing.service.gov.uk/media/675bfaa4cfbf84c3b2bcf986/clean-power-2030-action-plan.pdf. Accessed on: 10 January 2025.

VisitBritain (2024a) GB Domestic Day Visits 2023. Available at: https://www.visitbritain.org/research-insights/great-britain-domestic-day-visits-latest-results. Accessed on: 10 January 2025.

VisitBritain (2024b) GB Tourism Survey 2023. Available at: https://www.visitbritain.org/research-insights/great-britain-domestic-overnight-trips-latest-results. Accessed on: 10 January 2025.

VisitBritain (2024c) International Passenger Survey 2023. Available at: https://www.visitbritain.org/research-insights/inbound-visits-and-spend-annual-regional. Accessed on: 10 January 2025.

12.5. Part 5 (Appendices)

12.5.1 Appendix 5.1: Transboundary Impacts

Department of Energy and Climate Change (DECC) (2015) Guidelines on the assessment of transboundary impacts of energy developments on Natura 2000 sites outside the UK. Department of Energy and Climate Change, London.

HM Government (2011). The Marine Works (Environmental Impact Assessment) Regulations 2007. [online] Available at: https://www.legislation.gov.uk/uksi/2007/1518/contents. Accessed on: 26 November 2024.

National Grid ESO (2022). Pathway to 2030 A holistic network design to support offshore wind deployment for net zero. Available at: https://www.neso.energy/sites/default/files/media/documents/2022/07/737773_NGESO_HND_Report_2022%20%282%29.pdf. Accessed on: 22 November 2024.

Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process. [online]. GOV.UK. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-transboundary-impacts-and-process. Accessed on: 22 November 2024.

UNECE (2017). Convention on Environmental Impact Assessment in a Transboundary Context. Available at: https://unece.org/DAM/env/documents/2017/EIA/Publication/1733290_pdf_web.pdf. Accessed on: 26 November 2024.

12.5.2 Appendix 9.1: Marine Conservation Zone Screening

Defra (2016). Holderness Inshore Marine Conservation Zone Factsheet. Available at: https://assets.publishing.service.gov.uk/media/5a81aa4e40f0b62302698878/mcz-holderness-factsheet.pdf. Accessed on: 15 November 2024.

JNCC (2013). Swallow Sand Marine Conservation Zone: Site Summary Document. Available at: https://data.jncc.gov.uk/data/e708f8ce-60f7-4933-9bd0-aa7181c116f5/SwallowSand-SiteSummaryDocument.pdf. Accessed on: 15 November 2024.

JNCC (2018). Conservation objectives for Swallow Sand Marine Conservation Zone. Available at: https://data.jncc.gov.uk/data/2cfe24e5-b3c4-4670-b085-e6766c0930b8/SwallowSand-2-ConservationObjectives-v1.0.pdf. Accessed on: 15 November 2024.

JNCC (2023). Conservation Advice for North East of Farnes Deep Highly Protected Marine Area. Available at: https://data.jncc.gov.uk/data/5c5def7f-e1a0-4a7f-8078-a0ff3050a4fb/north-east-of-farnes-deep-hpma-conservation-advice-v1-0.pdf. Accessed on: 15 November 2024.

JNCC (2024a). North East of Farnes Deep MPA and HPMA. Available at: https://jncc.gov.uk/our-work/north-east-of-farnes-deep-mpa-and-hpma/. Accessed on: 15 November 2024.

JNCC (2024b). Holderness Offshore MPA. Available at: https://jncc.gov.uk/our-work/holderness-offshore-mpa/. Accessed on: 15 November 2024.

JNCC and Natural England (2021). Conservation objectives for Holderness Offshore Marine Conservation Zone. Available at: https://data.jncc.gov.uk/data/d439f5d1-5440-4547-84fb-8bd6ec970e44/HoldernessOffshore-ConservationObjectives-V1.0.pdf. Accessed on: 15 November 2024.

Marine Management Organisation (2013). Marine conservation zones and marine licensing. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/410273/Marine_conservation_zones_and_marine_licensing.pdf. Accessed on: 15 November 2024.

Planning Inspectorate (2020). Nationally Significant Infrastructure Projects: Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. Available at: Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements - GOV.UK (www.gov.uk). Accessed on: 15 November 2024.

12.5.3 Appendix 9.2: Offshore Water Framework Directive Screening

Defra (2023). *Water Framework Directive assessment: estuarine and coastal waters*. Available at: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters#screening-exclude-activities-from-scoping. Accessed on: 08 November 2024.

Environment Agency (2010). *Assessing new modifications for compliance with WFD: Detailed supplementary guidance*. NEAS Supplementary Guidance 488_10_SD01. Environment Agency, Bristol.

Environment Agency (EA) (2021). *Catchment data explorer*. Available at: https://environment.data.gov.uk/catchment-planning. Accessed on: 08 November 2024.

Environment Agency (EA) (2023). *Clearing the Waters for All, Water Framework Directive assessment: estuarine and coastal waters*. Available at:

https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters. Accessed on: 08 November 2024.

Planning Inspectorate (2024). *Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive*. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/. Accessed on: 08 November 2024.

12.5.4 Appendix 9.3: Onshore Water Framework Directive Screening

Defra (2023). Water Framework Directive assessment: estuarine and coastal waters. Available at: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters#screening-exclude-activities-from-scoping. Accessed on: 08 November 2024.

Environment Agency (2010). Assessing new modifications for compliance with WFD: Detailed supplementary guidance. NEAS Supplementary Guidance 488_10_SD01. Environment Agency, Bristol.

Environment Agency (EA) (2021). Catchment data explorer. Available at: https://environment.data.gov.uk/catchment-planning. Accessed on: 08 November 2024.

Environment Agency (EA) (2023). Clearing the Waters for All, Water Framework Directive assessment: estuarine and coastal waters. Available at: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters. Accessed on: 08 November 2024.

Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/. Accessed on: 08 November 2024.