

# Morecambe Offshore Windfarm: Generation Assets Environmental Statement

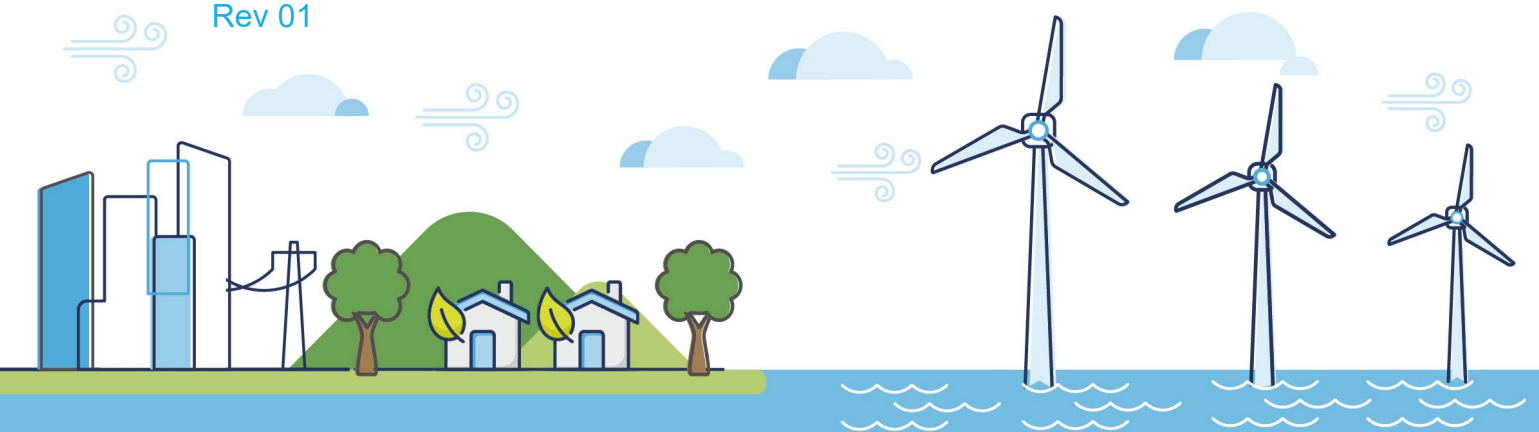
## Volume 5

### Chapter 6 EIA Methodology

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## Glossary of Acronyms

BEIS	Department for Business, Energy and Industrial Strategy <sup>1</sup>
CEA	Cumulative Effect Assessment
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
EEA	European Economic Area
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
FMMS	Fisheries Management and Mitigation Strategy
HIA	Health Impact Assessment
HM	His Majesty's
HRA	Habitats Regulations Assessment
ICES	International Council for the Exploration of the Seas
IEMA	Institute of Environmental Management and Assessment
JNCC	Joint Nature Conservation Committee
MCZA	Marine Conservation Zone Assessment
MMO	Marine Management Organisation
NISA Ltd	North Irish Sea Array
PDE	Project Design Envelope
PEI	Preliminary Environmental Information
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
SLVIA	Seascape, Landscape and Visual Impact Assessment
UK	United Kingdom
UNECE	United Nations Economic Commission for Europe
UXO	Unexploded Ordnance
ZoI	Zone of Influence
WHO	World Health Organization

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<sup>1</sup> As of February 2023, BEIS is known as the Department for Energy Security and Net Zero (DESNZ)

## Glossary of Unit Terms

GW	Gigawatts
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## Glossary of Terminology

Applicant	Morecambe Offshore Windfarm Ltd
Application	This refers to the Applicant's application for a Development Consent Order (DCO). An application consists of a series of documents and plans which are published on the Planning Inspectorate's (PINS) website.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
Inter-array cables	Cables which link the WTG(s) to each other and the OSP(s).
Landfall	Where the offshore export cables would come ashore.
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The Transmission Assets for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes the OSP(s) <sup>2</sup> , interconnector cables, Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV cables and associated grid connection infrastructure such as circuit breaker infrastructure. Also referred to in this chapter as the Transmission Assets, for ease of reading.
Offshore export cables	The cables which would bring electricity from the OSP(s) to the landfall.
Offshore substation platforms	A fixed structure located within the windfarm site, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable form for export to shore.
Platform link cable	An electrical cable which links one or more OSP(s).
Study area	This is an area which is defined for each Environmental Impact Assessment (EIA) topic which includes the offshore development area as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each EIA topic is intended to cover the area within which an effect can be reasonably expected.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables will be present.

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<sup>2</sup> At the time of writing the Environmental Statement (ES), a decision had been taken that the offshore substation platforms (OSPs) would remain solely within the Generation Assets application and would not be included within the Development Consent Order application for the Transmission Assets. This decision post-dated the Preliminary Environmental Information Report (PEIR) that was prepared for the Transmission Assets. The OSPs are still included in the description of the Transmission Assets for the purposes of this ES as the Cumulative Effects Assessment (CEA) carried out in respect of the Generation/Transmission Assets is based on the information available from the Transmission Assets PEIR.





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## 6 Environmental Impact Assessment Methodology

### 6.1 Introduction

- 6.1 This chapter describes the methodology used in the Environmental Impact Assessment (EIA) presented within this Environmental Statement (ES) for the Morecambe Offshore Windfarm Generation Assets (the Project).
- 6.2 The EIA considered all relevant topics identified in the Project EIA Scoping Report (Morecambe Offshore Windfarm Ltd, 2022) and agreed by The Planning Inspectorate (PINS) in their Scoping Opinion (PINS, 2022b). Specifically, this chapter describes the approach used to identify, evaluate and mitigate potential likely significant effects, in EIA terms, using a defined proportionate approach to the assessment process.
- 6.3 The EIA has been carried out in accordance with the Planning Act 2008 and the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations 2017'). Furthermore, the approach to the EIA and the production of this ES closely followed relevant guidance including:
- PINS Advice Notes<sup>3</sup>:
    - Advice Note Three: EIA consultation and notification (PINS, 2017a – Version 7)
    - Advice Note Six: Preparation and submission of application documents (PINS, 2023 – Version 11)
    - Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and ESs (PINS, 2020a – Version 7)
    - Advice Note Nine: Rochdale Envelope (PINS, 2018 – Version 3)
    - Advice Note Ten: Habitat Regulations Assessment relevant to nationally significant infrastructure projects (PINS, 2022a – Version 9)
    - Advice Note Eleven: Working with public bodies in the infrastructure planning process (PINS, 2017b – Version 4)
    - Advice Note Twelve: Transboundary Impacts and Process (PINS, 2020b – Version 6)

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<sup>3</sup> Advice notes (<https://www.gov.uk/government/collections/national-infrastructure-planning-advice-notes>)

- Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects (PINS, 2019 – Version 2)
  - Overarching National Policy Statements for:
    - Energy EN-1 (Department for Energy Security and Net Zero (DESNZ), 2023a)
    - Renewable Energy Infrastructure EN-3 (DESNZ, 2023b)
    - Electricity Networks Infrastructure EN-5 (DESNZ, 2023c)
  - North West Inshore and Offshore Marine Plans (Department for Environment, Food and Rural Affairs (HM Government), 2021)
  - Assessment of the environmental impact of offshore wind-farms (OSPAR Commission, 2008)
  - Relevant guidance issued by other United Kingdom (UK) Government and non-governmental organisations
  - Receptor-specific guidance documents, described in each technical chapter
- 6.4 This ES also gave due regard to the requirements of the Marine and Coastal Access Act 2009, the Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2017, the Habitats Regulations (i.e. The Conservation of Habitats and Species Regulations 2017, The Conservation of Offshore Marine Habitats and Species Regulations 2017 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019).
- 6.5 Further details of the Habitats Regulations Assessment (HRA) process followed by the Project can be found in the Report to Inform Appropriate Assessment (Document Reference 4.9) which has been submitted alongside the ES. A Marine Conservation Zone Assessment (MCZA) (Document Reference 4.13) for the Project has also been submitted alongside the ES.

## 6.2 Requirement for an EIA

- 6.6 The EIA process originates from the European Union (EU) and is codified by EU Directive 2011/92/EU (as further amended by Directive 2014/52/EU), to ensure the assessment of environmental effects of certain public and private projects. The provisions of the EU Directive were incorporated into English law for Nationally Significant Infrastructure Projects (NSIPs) by the EIA Regulations 2017. Such provisions have been retained in English law following the UK exit from the EU in January 2020.

- 6.7 The EIA is intended to provide decision-makers with an understanding of the potential environmental consequences of a project and thereby facilitate the making of environmentally sound decisions (Bailey and Hobbs, 1990).
- 6.8 The primary objective of EIAs, as described in Article 2 of the EU Directive, is that *“Member States shall adopt all measures necessary to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects”*.
- 6.9 Further emphasis is given to treating each case individually, with a focus on significant effects considering evidence and consultations through the provisions contained in Article 3 and Article 8:
- “The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project...”*
- “The results of consultations and information gathered pursuant to Articles 5 to 7 shall be duly taken into account in the development consent procedure”*.
- 6.10 The preliminary findings for this EIA were presented within the Preliminary Environmental Impact Assessment (PEIR) to support statutory consultation under sections 42 and 47 of the Planning Act 2008, and publication under section 48 of the Planning Act 2008. This statutory consultation period ran between 19 April and 4 June 2023 and was also held to meet the requirements of Regulation 12 of the EIA Regulations 2017. Regulation 12 of the EIA Regulations 2017 requires an applicant to compile Preliminary Environmental Information (PEI) to publicise and consult on. Such PEI must allow for consultees *“to develop an informed view of the likely significant environmental effects of the development (and of any associated development)”* (PINS, 2020a).
- 6.11 Feedback from the consultation has been taken into consideration and used to inform the evolution of the outline design and Project Design Envelope (PDE) (see **Section 6.6.2**), as well as the scope of the ES where relevant. The consultation process and the Applicants response to feedback received is set out further in the Consultation Report (Document Reference 4.1), submitted to PINS as part of the Development Consent Order (DCO) Application.
- 6.12 The purpose of the PEIR and subsequently this ES is to inform the consultees, stakeholders, effected communities and the wider public of the likely significant effects that would result from the Project during its construction, operation, maintenance and (where relevant) decommissioning, based on the level of design information known at the time of writing.

## 6.3 Guidance for an EIA

6.13 The approach to the EIA closely followed several relevant guidance notes, policy statements, and industry best practice documents as set out in **Table 6.1**. It should be noted that **Table 6.1** presents guidance documents applicable to the general approach to undertaking an EIA. Where additional topic-specific assessment guidance is available, this has been detailed within the corresponding topic chapters of this ES (chapters 7 to 22). Furthermore, **Chapter 3 Policy and Legislation** (Document Reference 5.1.3) presents the relevant policies and legislation applicable to the Project.

*Table 6.1 Documents used to guide the EIA methodology*

Document
<b>PINS Advice Notes</b>
Advice Note Three: EIA Consultation and Notification (PINS, 2017a)
Advice Note Six: Preparation and submission of application documents (Version 11, PINS, 2023)
Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and ESs (PINS, 2020a)
Advice Note Nine: Rochdale Envelope (PINS, 2018)
Advice Note Ten: Habitat Regulations Assessment relevant to nationally significant infrastructure projects (PINS, 2022a)
Advice Note Eleven: Working with public bodies in the infrastructure planning process (PINS, 2017b)
Advice Note Twelve: Transboundary Impacts and Process (PINS, 2020b)
Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects (PINS, 2019)
<b>National Policy Statements</b>
Overarching National Policy Statement for Energy (EN-1) (DESNZ, 2023a)
National Policy Statement for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b)
National Policy Statement for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c)
<b>Industry EIA guidance documents</b>
Assessment of the environmental impact of offshore windfarms (OSPAR Commission, 2008)
Offshore Wind Farms: Guidance Note for Environmental Impact Assessment in Respect of Food and Environment Protection Act 1985 and Coastal Protection Act 1949 requirements (Cefas, 2004)
Cumulative Impact Assessment Guidelines - Guiding Principles for Cumulative Impact Assessment in Offshore Wind Farms (RenewableUK, 2013)
Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Cefas, 2012)
Natural England best practice guidance (Natural England, 2022a, b, c)

Document
<b>Professional EIA guidance documents</b>
Guidelines for Environmental Impact Assessment (IEMA, 2004)
Guide to Shaping Quality Development (IEMA, 2016)
Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017)
Effective Non-Technical Summaries for Environmental Impact Assessment (IEMA, 2023)

## 6.4 Competent experts

6.14 As per Regulation 14(4) of the EIA Regulations 2017, the EIA must be prepared by ‘competent experts’ with details of that competency (including relevant expertise and qualifications of such experts) provided within the associated ES.

### 6.4.1 Royal HaskoningDHV

6.15 Royal HaskoningDHV has provided environmental, development and consenting support on over 14GW of renewable energy projects across 26 UK offshore windfarms. Their EIA activities and ESs are accredited by the Institute of Environmental Management and Assessment (IEMA) under the EIA Quality Mark Scheme. This demonstrates Royal HaskoningDHV’s commitment to ensuring EIA is undertaken at high quality and in accordance with best practice.

6.16 The team that undertook the EIA for the Project were predominantly Royal HaskoningDHV professional consultants. A dedicated core team took the lead role in the co-ordination and management of EIA, and the preparation of this ES. The core team was then supported by a wider group of technical specialists.

6.17 The assessments were undertaken by technical specialists, with a lead author for each technical topic who is a recognised expert in their field and has significant experience in the preparation of impact assessments. The lead author takes responsibility for the quality of data gathered, the assessment methodology undertaken, the impact assessments made and any proposed mitigation measures. The lead author was supported by the wider technical team and their work was subject to both technical and consistency review by the EIA core team and a technical specialist.

6.18 Some of the technical assessment and associated chapters have been undertaken by specialist consultancies outside Royal HaskoningDHV (see **Table 6.2**). Some of the main specialist consultancies have been further detailed in **Section 6.4.2** to **Section 6.4.5**.

- 6.19 In addition, technical consultation (such as through the Evidence Plan Process (EPP) discussed in **Section 6.5.3**) provided additional expert input into the assessment process.

Table 6.2 Lead authors of the ES

Chapter	Author
<b>Chapter 1 Introduction</b> (Document Reference 5.1.1)	Royal HaskoningDHV
<b>Chapter 2 Need for the Project</b> (Document Reference 5.1.2)	Royal HaskoningDHV
<b>Chapter 3 Policy and Legislation</b> (Document Reference 5.1.3)	Royal HaskoningDHV
<b>Chapter 4 Site Selection and Assessment of Alternatives</b> (Document Reference 5.1.4)	Royal HaskoningDHV
<b>Chapter 5 Project Description</b> (Document Reference 5.1.5)	Royal HaskoningDHV
<b>Chapter 6 EIA Methodology</b> (Document Reference 5.1.6)	Royal HaskoningDHV
<b>Appendix 6.1 CEA Project Long List</b> (Document Reference 5.2.6.1)	Royal HaskoningDHV
<b>Chapter 7 Marine Geology, Oceanography and Physical Processes</b> (Document Reference 5.1.7)	Royal HaskoningDHV
<b>Appendix 7.1 Offshore Geophysical Survey</b> (Document Reference 5.2.7.1)	MMT
<b>Chapter 8 Marine Sediment and Water Quality</b> (Document Reference 5.1.8)	Royal HaskoningDHV
<b>Chapter 9 Benthic Ecology</b> (Document Reference 5.1.9)	Royal HaskoningDHV
<b>Appendix 9.1 Benthic Characterisation Survey</b> (Document Reference 5.2.9.1)	Ocean Ecology Limited
<b>Chapter 10 Fish and Shellfish Ecology</b> (Document Reference 5.1.10)	Royal HaskoningDHV
<b>Chapter 11 Marine Mammals</b> (Document Reference 5.1.11), <b>Appendix 11.2 Marine Mammal Information and Survey Data</b> (Document Reference 5.2.11.2), <b>Appendix 11.3 Marine Mammal Unexploded Ordnance Assessment</b> (Document Reference 5.2.11.3), <b>Appendix 11.4 Marine Mammal CEA Project Screening</b> (Document Reference 5.2.11.4) and <b>Appendix 11.5 Marine Mammals Consultation Responses</b> (Document Reference 5.2.11.5)	Royal HaskoningDHV
<b>Appendix 11.1 Underwater Noise Assessment</b> (Document Reference 5.2.11.1)	Subacoustech Environmental Limited
<b>Chapter 12 Offshore Ornithology</b> (Document Reference 5.1.12) and <b>Appendix 12.1 Offshore Ornithology Technical Report</b> (Document Reference 5.2.12.1)	Royal HaskoningDHV



Chapter	Author
<b>Appendix 12.2 Aerial Survey Two Year Report March 2021 to February 2023</b> (Document Reference 5.2.12.2)	HiDef Aerial Surveying Limited
<b>Chapter 13 Commercial Fisheries</b> (Document Reference 5.1.13) and <b>Appendix 13.1 Commercial Fisheries Technical Report</b> (Document Reference 5.2.13.1)	Nima Consultants Ltd
<b>Chapter 14 Shipping and Navigation</b> (Document Reference 5.1.14)	Royal HaskoningDHV
<b>Appendix 14.1 Navigation Risk Assessment</b> (Document Reference 5.2.14.1) and <b>Appendix 14.2 Cumulative Regional Navigation Risk Assessment</b> (Document Reference 5.2.14.2)	Nash Maritime Ltd
<b>Chapter 15 Marine Archaeology and Cultural Heritage</b> (Document Reference 5.1.15) and <b>Appendix 15.3 Settings Assessment</b> (Document Reference 5.2.15.3)	Royal HaskoningDHV
<b>Appendix 15.1 Archaeological Assessment of Geophysical and Hydrographic Data</b> (Document Reference 5.2.15.1) and <b>Appendix 15.2 Seismic Data Review</b> (Document Reference 5.2.15.2)	MSDS Marine Limited
<b>Chapter 16 Civil and Military Aviation and Radar</b> (Document Reference 5.1.16), <b>Appendix 16.1 Airspace Analysis and Radar Modelling</b> (Document Reference 5.2.16.1) and <b>Appendix 16.2 Blackpool Instrument Flight Procedure Safeguarding Report</b> (Document Reference 5.2.16.2)	Cyrrus Limited
<b>Appendix 16.3 Other Instrument Flight Procedure Assessments</b> (Document Reference 5.2.16.3)	Osprey Consulting Services
<b>Chapter 17 Infrastructure and Other Users</b> (Document Reference 5.1.17)	Royal HaskoningDHV
<b>Appendix 17.1 Helicopter Access Study</b> (Document Reference 5.2.17.1)	Anatec Limited
<b>Appendix 17.2 Radar Early Warning System Technical Report</b> (Document Reference 5.2.17.2)	Manchester Advanced Radar Services Ltd
<b>Chapter 18 Seascape, Landscape and Visual Impact Assessment (SLVIA)</b> (Document Reference 5.1.18), <b>Appendix 18.1 SLVIA Methodology</b> (Document Reference 5.2.18.1), <b>Appendix 18.2 SLVIA Preliminary Assessment</b> (Document Reference 5.2.18.2) and <b>Appendix 18.3 SLVIA Viewpoint Assessment</b> (Document Reference 5.2.18.3)	Optimised Environments Limited (OPEN)
<b>Chapter 19 Human Health</b> (Document Reference 5.1.19)	RPS Group

Chapter	Author
<b>Chapter 20 Socio-economics, Tourism and Recreation</b> (Document Reference 5.1.20) and <b>Appendix 20.1 Offshore Windfarm Economic Impact Assessment Methodology</b> (Document Reference 5.2.20.1)	BiGGAR Economics Limited
<b>Chapter 21 Climate Change</b> (Document Reference 5.1.21) and <b>Appendix 21.1 Greenhouse Gas Assessment Methodology</b> (Document Reference 5.2.21.1)	Royal HaskoningDHV
<b>Chapter 22 Traffic and Transport</b> (Document Reference 5.1.22)	Royal HaskoningDHV
<b>Chapter 23 Summary: Generation and Transmission Assets Assessment</b> (Document Reference 5.1.23)	Royal HaskoningDHV

## 6.4.2 Optimised Environments Ltd

- 6.20 OPEN is a multi-disciplinary design company with master planning, urban design, landscape architecture and environmental planning at its core.
- 6.21 OPEN's SLVIA assessor, Simon Martin, has over 20 years' experience preparing SLVIAs for energy developments. Simon was the lead author of the SLVIA for the Morecambe project and also recently undertook the SLVIAs for other NSIP projects such as Five Estuaries Offshore Wind Farm and Rampion 2 Offshore Wind Farm, for which he has been acting as an Expert Witness. OPEN's LVIA project director, Lynda Thomson, has over 25 years' experience working in the renewables sector, more recently specialising in Seascape LVIA for offshore windfarms and LVIA for the associated onshore infrastructure. The team at OPEN has gained a considerable level of knowledge of energy related LVIA and are specialists in this field, having carried out the LVIAs for over 100 windfarms since 1998, working with many of the major renewable energy companies across the UK.
- 6.22 The team at OPEN has gained a considerable level of knowledge of energy related LVIA and are specialists in this field, having carried out the LVIAs for over 100 windfarms since 1998, working with many of the major renewable energy companies across the UK.

## 6.4.3 Cyrrus

- 6.23 Cyrrus Limited is a leading independent international consultancy providing a range of specialist aviation support services. Cyrrus is focused on bringing creative, contemporary solutions to the challenges facing the airport and air traffic industries. Their industry background and experience enable Cyrrus to provide high quality consultancy services in order to understand and resolve the disparate objectives of the aviation and renewable energy industries. Cyrrus' team has significant strength in depth, and provides the skill sets necessary to ensure project objectives are achieved. Their team has successfully worked in collaboration with aviation stakeholders (including the Ministry of Defence (MoD) and National Air Traffic Service (NATS)) providing well-reasoned technical argument and quality outcomes.
- 6.24 Additionally, Cyrrus has extensive experience of Air Traffic Control (ATC) radar and Air Defence radar operations regarding the effects of wind turbines and has previously addressed the aviation issues associated with many onshore and offshore wind energy developments.
- 6.25 Another core workstream is airspace design and the airspace change process. For example, in order to resolve the impact associated with the development of the London Array offshore wind farm on Manston Airport's ATC radar operation, Cyrrus developed and consulted upon the first Transponder

Mandatory Zone (TMZ) to be introduced over an offshore windfarm. The airport has since closed but the TMZ operates successfully to mitigate radar interference at London Southend Airport.

#### 6.4.4 NiMa Consultants Ltd

- 6.26 NiMa Consultants Ltd are marine environmental consultants working globally to provide advice in support of sustainable fisheries, offshore renewable energy, marine planning and aquaculture. NiMa provides high quality outputs and solutions across a range of fisheries and marine environmental projects, delivered by a core team of two experts who together combine expert knowledge in commercial fisheries, EIAs and the energy consenting process.
- 6.27 The NiMa team bring a full understanding of the methodology and best practice for undertaking commercial fisheries impact assessments globally. This includes a keen knowledge of guidance related to undertaking impact assessment for commercial fisheries. The NiMa team have extensive experience in leading every stage for the commercial fisheries elements of consent applications for nationally significant offshore wind farm projects in the UK and Ireland. This includes projects in the North Sea (Neart na Gaoithe, Hornsea One, Two, Three and Four; Dudgeon and Sheringham Shoal Extension Projects), the English Channel (Rampion 2) and the Irish Sea (Awel y Môr Offshore Wind Farm and Morecambe Offshore Windfarm). Since 2010, NiMa staff members has been engaged on Hornsea projects on the east coast of England, with expertise brought to every stage of the consenting process involving scoping, fisheries liaison plan production, UK and European wide fishing industry consultation, EIA Report chapter and technical appendix preparation, development of Statements of Common Ground and acting as expert witness during examination process. NiMa are also engaged in providing equivalent services to a number of other newly identified and extension offshore wind farm projects in UK and Irish waters.
- 6.28 In Irish waters, the NiMa team are currently providing commercial fisheries expertise to Dublin Array Offshore Wind Farm Project (RWE and Saorgus Energy), North Irish Sea Array (NISA Ltd), Arklow Bank Wind Park 2 and Codling Project.
- 6.29 NiMa also supports developers in meeting post-consent compliance requirements; for example, for the Neart na Gaoithe Offshore Wind Farm in Scottish territorial waters, NiMa prepared the Fisheries Management and Mitigation Strategy (FMMS) and are undertaking an ongoing programme of commercial fisheries monitoring. Our work requires sound understanding of fish and shellfish ecology, the status of commercial stocks and patterns of fishing activity.

#### 6.4.5 BiGGAR Economics Ltd

- 6.30 BiGGAR Economics is an independent economic development consultancy that provides a range of economic development services for central and local government, economic development agencies, universities, other public sector agencies and private sector firms. The company has particular experience in the renewable energy sector and has assessed the socio-economic impact of over 100 windfarms in the UK and Ireland.
- 6.31 The author is the Energy Transition Director at BiGGAR Economics and has twelve years of experience in considering the social and economic impacts of renewable energy projects, leading a variety of renewable energy projects and has developed expertise in modelling the economic impact of individual renewable energy projects and industry wide developments. Supporting is a Senior Economist at BiGGAR Economics, with six years' experience in the modelling of economic impacts and has been involved in carrying out economic analysis and managing the delivery of a number of offshore wind farm projects.

#### 6.4.6 RPS

- 6.32 RPS is an internationally recognised leader in Health Impact Assessment (HIA) and Human Health in EIA, particularly within the renewable energy sector. We offer a comprehensive range of services that address the public health implications of renewable energy projects, including wind farms and grid connections. With an extensive portfolio of successful projects, RPS sets industry benchmarks and national and sector-specific best practices. The Health and Social Impact team at RPS has developed substantial expertise, providing the technical health analysis on EIA Human Health chapters for major Offshore Wind Farms including Morgan, Mona, Morecambe, Norfolk Vanguard, Norfolk Boreas, Dudgeon and Sheringham Shoal, Dogger Bank South, Dogger Bank D and Morven.
- 6.33 The author is the Director of Health and Social Impact at RPS, and is the first author of the IEMA health in EIA methods guidance 2022 and IEMA 2024 guide to competency for HIA and health in EIA. The author is also first author of the World Health Organization (WHO) 2021 review of international practice on health in EIA. The author is a registered public health practitioner with the Faculty of Public Health, as well as an Honorary Research Fellow and Member of the WHO Collaborating Centre on Health in Impact Assessments at the University of Liverpool. The author brings over 18 years of professional consulting experience, combining expertise in public health, environmental science, and legal practice. As an expert witness, the author has demonstrated robust health assessment at Public Inquiry.

## 6.5 Consultation

6.34 Consultation is a key feature of the EIA process and continues throughout the lifecycle of a project. A summary of the consultation undertaken to support the ES and DCO Application is set out below. In addition, information on the consultation feedback received in relation to the EIA methodology, and how that feedback has been addressed within the information presented within the ES (and other documents supporting the DCO Application) is presented.

### 6.5.1 Scoping

6.35 A request for a Scoping Opinion was submitted by the Applicant to PINS in June 2022 which outlined the Project as it was understood at that time and described in broad terms both the impacts to be assessed as part of the EIA and the methodology for these assessments.

6.36 A formal Scoping Opinion (PINS, 2022c) was received in August 2022. The Scoping Opinion collated comments from consultees and highlighted where there is agreement on what could be scoped in or out of the EIA.

6.37 The Scoping Opinion from PINS confirmed that the following topics have been scoped out of the ES assessment as the Project would have no impact on the following:

- Offshore air quality
  - *The Inspectorate agrees that this matter may be scoped out of further assessment in the ES on the basis that the main source of emissions would be exhaust emissions from vessels and, due to the nature and location of the Proposed Development, associated vessel movements would only generate a small increase in emissions, which is unlikely to result in significant effects on land based human and ecological receptors (ref 3.13.1).*
  - *The Inspectorate agrees that due to the nature and location of the Proposed Development it is unlikely that emissions from it would combine with other offshore proposals to result in significant cumulative effects on land based human and ecological receptors. This matter can therefore be scoped out of further assessment in the ES (ref 3.13.2).*
  - *The Scoping Report seeks to scope this matter out on the grounds that as vessel movements associated with the Proposed Development would only trigger a small increase in emissions, significant effects on land based human and ecological receptors in an EEA State are unlikely. The Inspectorate agrees that this matter can be scoped out of further assessment (ref 3.13.3).*
- Offshore airborne noise

- *On the basis of the information presented in paragraph 868 about the types of activity, and the distance of these activities from the nearest onshore receptors (at circa 30km), the Inspectorate agrees that offshore airborne noise impacts are unlikely to result in significant effects during construction, operation and decommissioning, and can be scoped out of further assessment in the ES. The Inspectorate is content that the main impacts from underwater offshore noise to biological receptors, including fish, marine mammals and birds, will be assessed in other relevant aspect chapters (ref 3.14.1).*
- Onshore ground conditions and contamination
  - *The Scoping Report seeks to scope this matter out on the grounds that as the Proposed Development is located approximately 30km from shore, there is no pathway for effects. The Inspectorate agrees that this matter can be scoped out of further assessment (ref 3.19.1).*
- Onshore land use
  - *The Scoping Report seeks to scope this matter out on the grounds that as the Proposed Development is located approximately 30km from shore, there is no pathway for effects. The Inspectorate agrees that this matter can be scoped out of further assessment (ref 3.19.2).*
- Onshore ecology
  - *The Scoping Report seeks to scope this matter out on the grounds that as the Proposed Development is located approximately 30km from shore, there is no pathway for effects. On the basis that effects on migratory fish which could be associated with freshwater rivers will be included in the ES, it is agreed that other effects on onshore ecology can be scoped out of further assessment (ref 3.19.3).*
- Onshore ornithology
  - *The Scoping Report seeks to scope this matter out on the grounds that as the Proposed Development is located approximately 30km from shore, there is no pathway for effects. The Inspectorate agrees that this matter can be scoped out of further assessment (ref 3.19.4).*
- Onshore water resources and flood risk
  - *The Scoping Report seeks to scope this matter out on the grounds that as the Proposed Development is located approximately 30km from shore, there is no pathway for effects. The Inspectorate notes that effects on marine water quality will be included in the ES and agrees that this matter can be scoped out of further assessment (ref 3.19.6).*
- Onshore archaeology and cultural heritage
  - *The Scoping Report seeks to scope this matter out on the grounds that as the Proposed Development is located approximately 30km from shore, there is no pathway for effects. The Inspectorate agrees that there would be no direct physical impacts to onshore cultural*

*heritage assets and no direct physical or setting impacts to onshore archaeology, and these matters can therefore be scoped out of the ES (ref 3.19.5).<sup>4</sup>*

- 6.38 Within the topics assessed in the ES, particular impacts have also been scoped out, as detailed in the Scoping Opinion and these are presented within each relevant technical chapter (chapters 7 to 22). Topic specific points from the Scoping Opinion are also referenced in the consultation tables within the relevant technical chapters.
- 6.39 Scoping Opinion comments which were considered in this EIA methodology chapter, are highlighted in **Table 6.3**.

### 6.5.2 PEIR

- 6.40 In accordance with the Planning Act 2008, the Applicant undertook statutory consultation in relation to the Project between 19<sup>th</sup> April and 4<sup>th</sup> June 2023, including publication of the Project PEIR. This consultation is described in full in the Consultation Report (Document Reference 4.1).
- 6.41 Feedback received during the statutory consultation period which are considered relevant to this EIA methodology chapter, are set out in **Table 6.3**. Other comments received relevant to the EIA methodology for technical topics, are responded to within the respective technical chapters 7-22.

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<sup>4</sup> Noting that inline with the Scoping Opinion a settings assessment of cultural and heritage assets has been undertaken (**Chapter 15 Marine Archaeology and Cultural Heritage**)



Table 6.3 Comments used to guide the EIA methodology

Reference	Date	Comment	Response
<b>Scoping Opinion</b>			
Natural England (position paper supplied with Scoping Opinion)	21 <sup>st</sup> July 2022	We consider that the transmission assets are an integral part of the project and therefore the ES should, at the point of submission, be in a position to consider the project as a whole. Therefore the final ES, when considering the project as a whole, will include additional impacts and designated sites than those mentioned within the Morecambe OWF Generation Assets Scoping Report.	The Morgan and Morecambe Offshore Wind Farms: Transmission Assets project is undergoing a separate DCO consent application process. In each technical chapter in this ES a separate assessment considering both the Project (Generation Assets) and the Transmission Assets is undertaken within the cumulative assessment section, before consideration of all plans and projects cumulatively.  In addition, a separate ES chapter ( <b>Chapter 23 Summary: Generation and Transmission Assets Assessment</b> (Document Reference 5.1.23)) that consolidates and summarises into one document the impacts of the Project (Generation Assets) and the Transmission Assets as a whole is also provided as part of the DCO Application for information, including consideration of all potential impact pathways. See <b>Section 6.7.4</b> for more information.
PINS (ref. 2.2.1)	2 <sup>nd</sup> August 2022	The Scoping Report refers to effects being temporary or short-term in nature but does not explain how these periods have been defined. The ES should define the time periods associated with different durations of effect.	Durations have been presented in <b>Table 6.8</b> to define magnitudes of impacts, whereby temporary and short term impacts are considered to exist over part of the Project, with long term and permanent impacts covering the lifetime of the Project and beyond. Relevance of

Reference	Date	Comment	Response
			timescales to each receptor is described in the magnitude for each impact in chapters 7 to 22.
PINS (ref. 2.2.2)	2 <sup>nd</sup> August 2022	<p>The ES should clearly state which developments will be assumed to be part of the baseline and those which are to be considered in the cumulative effects assessment.</p> <p>The Inspectorate notes that while paragraph 134 of the Scoping Report states that the applications for the generation and transmission assets would be accompanied by a full and comprehensive assessment of cumulative impacts and interrelationships, paragraph 159 qualifies this by stating that information which summarises the impacts of the transmission assets “insofar as it is available”. The ES for the generation assets DCO should address any cumulative or inter-related effects arising from interactions with the transmission assets. In addition to cumulative/inter-related impacts which arise because of overlapping zones of influence associated with different projects, it should also consider temporal cumulative/inter-related impacts. Examples might include noise impacts on seabirds which initially arise from the construction of the array and then from construction of the transmission assets. Where information on the transmission assets is limited, the ES should explain and justify any assumptions which have been made about the parameters of the transmission assets and why these represent the worst case scenario.</p>	<p>The approach to cumulative assessment is explained per technical topic (chapters 7 to 22). In each topic the appropriate approach to the baseline and cumulative impact assessment are presented and justified.</p> <p>Morgan and Morecambe Offshore Wind Farms: Transmission Assets are assessed as a cumulative project (including a separate combined assessment of Generation Assets (the Project) and the Transmission Assets). In each technical chapter, the pathway for combined effects has been identified for each impact as well as consideration of the cumulative effects of all plans and projects, including the Transmission Assets.</p> <p>At the time of writing this ES, the parameters identified in the PEIR for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets project (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023) have been used as worst-case to support the assessments in this ES.</p>
PINS (ref. 2.2.3)	2 <sup>nd</sup> August 2022	The Scoping Report states that where possible, the assessment would use ‘as built’ project parameter information, as opposed to the use of consented	Noted. For ornithology, consented parameters are used in collision risk modelling in this ES. Where relevant, the

Reference	Date	Comment	Response
		<p>parameters to avoid over-precaution in the assessment. It is the Inspectorate's understanding that unless a DCO or other consent has been revised to recognise the 'as built' rather than as consented parameters, then the consented parameters should be the ones which are considered since the possibility still exists that further build out could be allowed. The ES should undertake the cumulative effects assessment on the basis of the consented parameters for other developments. The Applicant's attention is drawn to the advice from Natural England on this point in Appendix 2 of this Opinion. However, it would also assist the decision maker if a cumulative effects assessment was included in the ES which uses the 'as built' parameters for other developments.</p>	<p>'as built' and consented values are considered within the cumulative assessment for offshore ornithology.</p> <p>'As built' parameters are only otherwise used in aviation and radar, and landscape and visual assessments, where heights of constructed windfarms are part of the baseline and reflected for example on aeronautical charts or in existing views.</p>
PINS (ref. 2.2.4)	2 <sup>nd</sup> August 2022	<p>For a number of aspects, including marine archaeology and heritage, socio-economics and tourism and recreation, the Scoping Report states that cumulative effects are scoped into the ES for all phases of the Proposed Development (for the same impact pathways as the project -alone) at this stage but indicates that some may be screened out through cumulative impact assessment screening. This would be on the basis that impacts would be highly localised or management measures would be in place to reduce the risk of impacts.</p> <p>The Inspectorate considers that this is an acceptable approach to the assessment provided that the ES includes a clear justification for any screening out of individual impact pathways.</p> <p>The Applicant is also advised to seek to agree with stakeholders through the Evidence Plan Process (EPP) which plans and projects should be included in the</p>	<p>Chapters 7-22 provide details of cumulative projects considered in the ES and these have been discussed in EPP Expert Topic Group (ETG) meetings.</p> <p>Where pathways are identified in Welsh waters cumulative impacts have been considered.</p> <p>The approach to cumulative assessment is provided in <b>Section 6.7.3</b>.</p>

Reference	Date	Comment	Response
		cumulative effects assessment. The ES should also consider the potential for cumulative effects on receptors within Welsh waters and/or the coastal regions of Wales.	
PINS (ref. 2.2.5)	2 <sup>nd</sup> August 2022	While the Proposed Development is located entirely in English waters, the ES should explain if the zones of influence of the Proposed Development affect Welsh waters and/or the coastal regions of Wales. If this is the case, then the ES should also consider relevant Welsh legislation and policy, notably the Environment (Wales) Act 2016 and the Wellbeing of Future Generations (Wales) Act 2015.	The zone of influence (Zol) for each topic is defined in each individual chapter and where impacts to Welsh Waters are identified, relevant Welsh legislation, policy and guidance is identified and reflected in the assessment as necessary, for example in <b>Chapter 18 SLVIA</b> (Document Reference 5.1.18).
PINS (ref. 2.2.6)	2 <sup>nd</sup> August 2022	Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Noted, no confidential annex is required for this ES.
<b>Section 42 responses on the PEIR</b>			
Marine Management Organisation (MMO) DCO/2022/00001	30 <sup>th</sup> May 2023	Chapter 6: Environmental Impact Assessment (EIA) Methodology - Major Comments - The MMO reiterate the comment made by Natural England (NE) (Table 6.3) that without export cabling the offshore wind farm	Concerns have been discussed with the MMO and other stakeholders. In each ES technical chapter, a separate assessment considering both Generation Assets (the

Reference	Date	Comment	Response
		(OWF) is not functional and so it is not possible to assess the full impact of the OWF whilst excluding the transmission assets. Table 6.3 indicates that the Environmental Statement (ES) will include both the generation and transmission assets under a cumulative assessment – however, cumulative assessments are not standardised and therefore, frequently less detailed. It is the view of the MMO that all foreseeable consequences of constructing the OWF are integral to environmental assessments. Therefore, the methodology proposed in Table 6.3 does not address these concerns.	Project) and the Transmission Assets is undertaken in the cumulative section, before consideration of all plans and projects.  In addition, a separate ES chapter ( <b>Chapter 23 Summary: Generation and Transmission Assets Assessment</b> ) that consolidates and summarises into one document the impacts of the Project (Generation Assets) and the Transmission Assets as a whole is also provided as part of the DCO Application for information, including consideration of all potential impact pathways. See <b>Section 6.7.4</b> for more information.
Natural England Ref 436239	2 <sup>nd</sup> June 2023	The advice provided is with respect to the generation assets PEIR submission provided, but we consider that the transmission assets are an integral part of the project and therefore the ES should, at the point of submission, be in a position to consider the project as a whole. Therefore, the final ES, when considering the project as a whole, will include additional impacts and designated sites than those mentioned within the Morecambe OWF Generation Assets PEIR submission. Natural England advises that the potential impacts of the project cannot be considered in isolation from its transmission assets and the associated Morgan OWF project, and accordingly we will only consider a full, cumulative assessment of these projects as adequate to support the DCO application.  Consenting Risks – Separate DCO Submissions for Generation and Transmission Assets  Please refer to the paper provided along with our EIA scoping response on 21st July 2022 (our ref: 18251/399738) which highlights the implications and risks	

Reference	Date	Comment	Response
		associated with stranded assets during the consenting process.	
Historic England	30 <sup>th</sup> May 2023	Chapter 6 EIA methodology Section 6.6.3 (Mitigation) describes “embedded mitigation” and “additional mitigation”. It is therefore an important matter that inclusion of the known and risk of the project encountering presently unknown elements of the historic environment are dealt with effectively.	Noted, <b>Chapter 15 Marine Archaeology and Cultural Heritage</b> details adaptive mitigation and processes required in relation to encountering unknown elements of the historic environment.
Natural England Ref 436239	2 <sup>nd</sup> June 2023	Matrix to Determine Effect Significance We acknowledge that a matrix approach to determining the significance of effects on ecological features is commonly used. However, this method often relies on value- rather than evidence-based judgements. The subjective evaluation of magnitude of impact and sensitivity/importance of receptors through expert judgement has led to many impact magnitudes and receptor importance/sensitivities being downgraded across topics in the PEIR. We also note that any effect that is concluded to be of moderate or major significance in the PEIR, is deemed to be ‘significant’ in EIA terms, whereas effects concluded to be of negligible or minor significance, are deemed ‘not significant’ within the PEIR and “unlikely to be important in the decision making process”. This cut-off could exclude any effect concluded to be less than moderate, which in turn could lead to errors in assessing cumulative effects, which are a key consideration in decision making, adequately.	The matrix is used only to guide the assessment and is supported with evidence-based judgements, further evidence is used in the assessments to support the inputs (establishing the magnitude and sensitivity), which is undertaken in a precautionary manner. As shown in <b>Section 6.7.3</b> , a ‘cut off’ is not used in the cumulative effects assessment (CEA) based on level of significance (apart from where no change has been identified). Each technical chapter of the ES considers cumulative effects where there is a spatial and/or temporal overlap in impacts such that a cumulative effect could be possible, or where impacts may affect a defined receptor group. This allows for the possibility that effects may be ‘not significant’ when considering the Project-alone but ‘significant’ when considered together with other plans and projects.

Reference	Date	Comment	Response
			<p>Following comments from Natural England on the definition of 'minor' significance in the ES, the definition has been updated to remove '...but not important for decision-making'.</p> <p>This was agreed in Project Update meetings with Natural England and MMO.</p>

### 6.5.3 Technical consultation

#### 6.5.3.1 The Evidence Plan Process

- 6.42 In order to ensure that the Project is subject to full and open consultation during the EIA process, targeted consultation with regulators and interested stakeholders has been undertaken through the EPP and its associated Expert Topic Groups (ETGs).
- 6.43 The EPP is a mechanism to help agree the information to be supplied to PINS as part of the DCO Application for the Project in order to enable compliance with the EIA Regulations 2017 and the Habitats Regulations.
- 6.44 The EPP aims to assist all parties in the process during the evolution of the proposed DCO Application, by:
- Giving greater certainty to all parties on the amount and range of evidence to be presented within the application
  - Providing structure and efficiency to discussion and sequential identification of key environmental and consenting issues
  - Enabling time and resource requirements to be planned and optimised for all parties
  - Helping address and agree issues earlier in the pre-application stage where possible so that robust, streamlined decisions can be taken and additional data can be collected as required
  - Providing a platform to debate advice on one (or more) topic between multiple agencies/stakeholders.
- 6.45 The EPP is a non-statutory, voluntary process and there are no legal obligations associated with it. It does not replace or duplicate existing requisites, and the plans are formulated to fit with the Planning Act 2008 DCO application process, including the statutory pre-application consultation processes.
- 6.46 The EPP is a framework within which statutory consultees and the Applicant ensure that the HRA process and agreed elements of the EIA process are completed in a way that is satisfactory to all parties involved. It is comprised of topic and issue-specific ETGs, which bring together relevant technical experts from each organisation in order to ensure that key issues can be discussed and where possible resolved as part of a collaborative process.
- 6.47 The ETGs which have been convened to support this DCO Application are shown in **Table 6.4**. These groups were designed to streamline the process and ensure that the most relevant technical experts from each organisation



were represented on the ETGs and attend ETG meetings. ETG comments are discussed as required in each ES technical chapter (chapters 7 to 22).

*Table 6.4 ETG structure for the Project EPP*

<b>Topic</b>	<b>Members<sup>5</sup></b>	<b>Meetings held</b>
Marine ecology (including marine physical processes, marine sediment and water quality, benthic ecology and fish and shellfish ecology)	<ul style="list-style-type: none"> <li>▪ Natural England (and representing Joint Nature Conservation Committee (JNCC))</li> <li>▪ Marine Management Organisation (MMO) (supported by Centre for Environment, Fisheries and Aquaculture Science (Cefas))</li> <li>▪ Wildlife Trusts</li> <li>▪ Inshore Fisheries and Conservation Authority (North Western IFCA)</li> <li>▪ Isle of Man Government</li> <li>▪ Environment Agency*</li> <li>▪ Merseyside Environmental Advisory Service (MEAS)</li> </ul>	<ul style="list-style-type: none"> <li>▪ 09/06/2022</li> <li>▪ 14/09/2022</li> <li>▪ 23/11/2022</li> <li>▪ 15/06/2023</li> <li>▪ 11/10/2023</li> <li>▪ 23/01/2024</li> </ul>
Offshore ornithology	<ul style="list-style-type: none"> <li>▪ Natural England</li> <li>▪ MMO</li> <li>▪ Royal Society for the Protection of Birds (RSPB)</li> <li>▪ Isle of Man Government</li> <li>▪ MEAS</li> </ul>	<ul style="list-style-type: none"> <li>▪ 25/05/2022</li> <li>▪ 07/09/2022</li> <li>▪ 16/11/2022</li> <li>▪ 07/06/2023</li> <li>▪ 12/10/2023</li> <li>▪ 25/01/2024</li> </ul>
Marine mammal ecology	<ul style="list-style-type: none"> <li>▪ Natural England (JNCC)</li> <li>▪ MMO</li> <li>▪ The Wildlife Trusts</li> <li>▪ Isle of Man Government</li> <li>▪ Cefas</li> <li>▪ MEAS</li> </ul>	<ul style="list-style-type: none"> <li>▪ 20/05/2022</li> <li>▪ 31/08/2022</li> <li>▪ 9/11/2022</li> <li>▪ 08/06/2023</li> <li>▪ 11/10/2023</li> <li>▪ 31/01/2024</li> </ul>
SLVIA	<ul style="list-style-type: none"> <li>▪ Lake District National Park Authority*</li> <li>▪ National Resource Wales*</li> <li>▪ Fylde Council</li> <li>▪ Sefton Council</li> <li>▪ Blackpool Council</li> <li>▪ Wyre Council</li> <li>▪ MMO</li> <li>▪ National trust</li> <li>▪ MEAS</li> </ul>	<ul style="list-style-type: none"> <li>▪ 07/12/2022</li> <li>▪ 13/06/2023</li> <li>▪ 17/10/2023</li> <li>▪ 12/01/2024</li> </ul>

<sup>5</sup> Those organisations with a star identified no further involvement is necessary after initial meetings/contact

Topic	Members <sup>5</sup>	Meetings held
	<ul style="list-style-type: none"> <li>▪ Arnside and Silverdale National Landscape representatives</li> </ul>	
Historic environment	<ul style="list-style-type: none"> <li>▪ Historic England</li> <li>▪ MMO</li> <li>▪ Cadw (Welsh Government's historic environment service)*</li> </ul>	<ul style="list-style-type: none"> <li>▪ 20/05/2022</li> <li>▪ 31/08/2022</li> <li>▪ 14/11/2022</li> <li>▪ 14/06/2023</li> <li>▪ 18/01/2024</li> </ul>

### 6.5.3.2 Other topics

6.48 EIA topic areas for which there were established consultation and targeted consultation were:

- Shipping and Navigation
- Infrastructure and Other Users
- Civil and Military Aviation and Radar
- Commercial Fisheries
- Human Health
- Socio-economics

6.49 For these topics, where appropriate, detailed and comprehensive engagement and consultation has been undertaken through direct discussion and through established industry engagement processes (e.g., Fisheries Liaison Officer (FLO) and Fishing Industry Representative (FIR) engagement in fisheries). The approach and progress with consultation undertaken for these topics is described in each technical chapter and in the Consultation Report (Document Reference 4.1).

### 6.5.4 Public consultation

6.50 Prior to the submission of an application for a DCO, the Applicant must carry out consultation and publicity activities prescribed by sections 42, 46, 47 and 48 of the PA 2008, and associated provisions of 'The Applications: Prescribed Forms and Procedure Regulations 2009' (the 'APFP Regulations') (as amended) and 'The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017' (the 'EIA Regulations') and have regard to government guidance. This includes consulting with the local community and certain prescribed persons and bodies (prescribed by regulations, such as local authorities and technical consultees and affected and potentially affected land interests).

6.51 A series of public consultation exercises have been undertaken throughout the EIA process. A staged approach was taken to pre-application consultation

on the proposed Project. This involved two main stages of consultation as follows:

- Stage 1 (non-statutory) Consultation – to introduce the proposed Project and seek comments/feedback on the early proposals.
- Stage 2 (statutory) Consultation – providing more detailed information on the Proposed Project and PEI ahead of the submission of the DCO Application.

6.52 **Table 6.5** below provides a summary of the pre-application consultation on the proposed Project.

*Table 6.5 Summary of the Applicant’s pre-application consultation process*

Stage	Overview of Consultation	Timescales
EIA Scoping	Submission of a request for an EIA Scoping Opinion to the SoS and receipt of EIA Scoping Opinion.	23 <sup>rd</sup> June to 2 <sup>nd</sup> August 2022
Stage 1 (non-statutory) consultation	Non-statutory consultation with communities and key stakeholders	2 <sup>nd</sup> November to 13 <sup>th</sup> December 2022
Statement of Community Consultation (SoCC)	Consultation took place with the relevant authorities closest to the Project, and those that may interact with the Project	31 <sup>st</sup> January to 27 <sup>th</sup> February 2023
Stage 2 (statutory) Consultation pursuant to sections 42, 43, 46, 47 and 48 of the PA 2008	Section 42 ‘Duty to consult’: consultation with prescribed consultees, host and other relevant local authorities, potentially affected land ownership interests and non-prescribed consultees	19 <sup>th</sup> April to 4 <sup>th</sup> June 2023

6.53 This included the following, as described further in Consultation Report (Document Reference 4.1).

- Public consultation events (in person and online) during stage 1 (non-statutory) consultation
- Publication of the Statement of Community Consultation (SOCC), and section 47 ‘notice publicising the Statement of Community Consultation’
- Publication of section 48 notice ‘duty to publicise’
- Public consultation events (in person and online) during stage 2 (statutory) consultation including publication of the PEIR

6.54 In September 2023, the Applicant published a four-page newsletter, announcing refinements to the Project including the reduction of the windfarm site boundary. The newsletter explained that the Applicant had been working closely with stakeholders to understand the potential impacts of the proposed

offshore windfarm and to identify how it could work with stakeholders to mitigate any potential effects.

- 6.55 The newsletter was distributed to members of the Marine Navigation Engagement Forum (MNEF), ETGs and other technical stakeholders and uploaded to the consultation website, where it remains available for download.

## 6.6 EIA methodology

### 6.6.1 Study area

- 6.56 Study areas have been defined for each EIA topic at the relevant scale and are set out within each technical chapter of the ES (chapters 7 to 22). These study areas have been determined by a number of factors such as the distribution of receptors, footprint of potential impact, and extent of administrative/management boundaries (e.g. International Council for the Exploration of the Seas (ICES) rectangles). Where possible the study areas have been agreed with regulators or advisors via the EPP and through consultation on the PEIR.

### 6.6.2 Project design envelope

- 6.57 The EIA for the Project has been based on a Project Design Envelope (PDE) (or 'Rochdale Envelope') approach on a topic-by-topic basis. As is recognised by PINS in Advice Note Nine (PINS, 2018), at the time of submitting an application, offshore wind developers may not know the precise nature and arrangement of infrastructure that make up the proposed development. This is due to a number of factors such as the evolution of technology and the need for further detailed surveys which are required before a final design and layout can be determined. This flexibility is important as it prevents consent being granted for specific infrastructure or a particular layout which is not possible or optimal by the time of construction, noting that construction may be several years after the making of the DCO.
- 6.58 The general principle of the assessment, under the PDE approach, was that for each receptor and potential impact, the impact assessment was based on assessing project design parameters likely to result in the maximum adverse effect (i.e. the worst-case scenario). The PDE for the Project was used to define the realistic worst-case scenario for each individual impact, so that it could be safely assumed that all other scenarios within the design envelope would have a less significant effect.
- 6.59 If a combination of design parameters leads to a scenario that cannot realistically occur, then the worst-case scenario was reconsidered, and a realistic set of worst-case parameters assessed. The end result is an EIA based on clearly defined environmental parameters that define the range of development possibilities and hence the likely significant environmental

effects that could result from the Project. This represented a precautionary but robust assessment of likely significant effects at this stage of the development process.

- 6.60 Using the PDE approach meant that receptor-specific likely significant effects drew on the options from within the wider envelope that represented the most realistic worst-case scenario. It is also worth noting that under this approach the combination of project options which constitute the realistic worst-case scenario may differ from one receptor to another and from one impact to another.
- 6.61 In accordance with this approach, the realistic worst-case scenarios for each EIA topic have been summarised within each corresponding technical assessment chapter (chapters 7 to 22). These were based on the PDE described in **Chapter 5 Project Description** (Document Reference 5.1.5), which provides further details regarding specific activities and their durations.

### 6.6.3 Mitigation

- 6.62 For the purposes of the ES, two types of mitigation have been defined:
- Embedded mitigation<sup>6</sup> consisting of mitigation measures that have been identified and adopted as part of the design evolution of the Project and have been included and assessed in the EIA. These include key actions that would be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects. Further details are provided in the Outline Project Environmental Management Plan (PEMP) (Document Reference 6.2) provided with the DCO Application.
  - Additional mitigation<sup>7</sup> consisting of mitigation measures that have been identified during the EIA process specifically to reduce or eliminate any predicted likely significant effects. Such additional mitigation was therefore subsequently adopted as a commitment of the Project.
- 6.63 Embedded mitigation which has been agreed at this stage has been outlined where relevant within each technical assessment chapter of the ES (chapters 7 to 22). Where appropriate, these chapters outline how mitigation has been secured, either through a specific DCO requirement or other appropriate mechanism, such as within Outline management plans.
- 6.64 Where an impact assessment has predicted that an aspect of the development would give rise to likely significant environmental effects, mitigation measures

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<sup>6</sup> Embedded mitigation considers primary and tertiary mitigation as defined by Institute of Environmental Management and Assessments (IEMA)

<sup>7</sup> Additional mitigation considers secondary mitigation as defined by IEMA

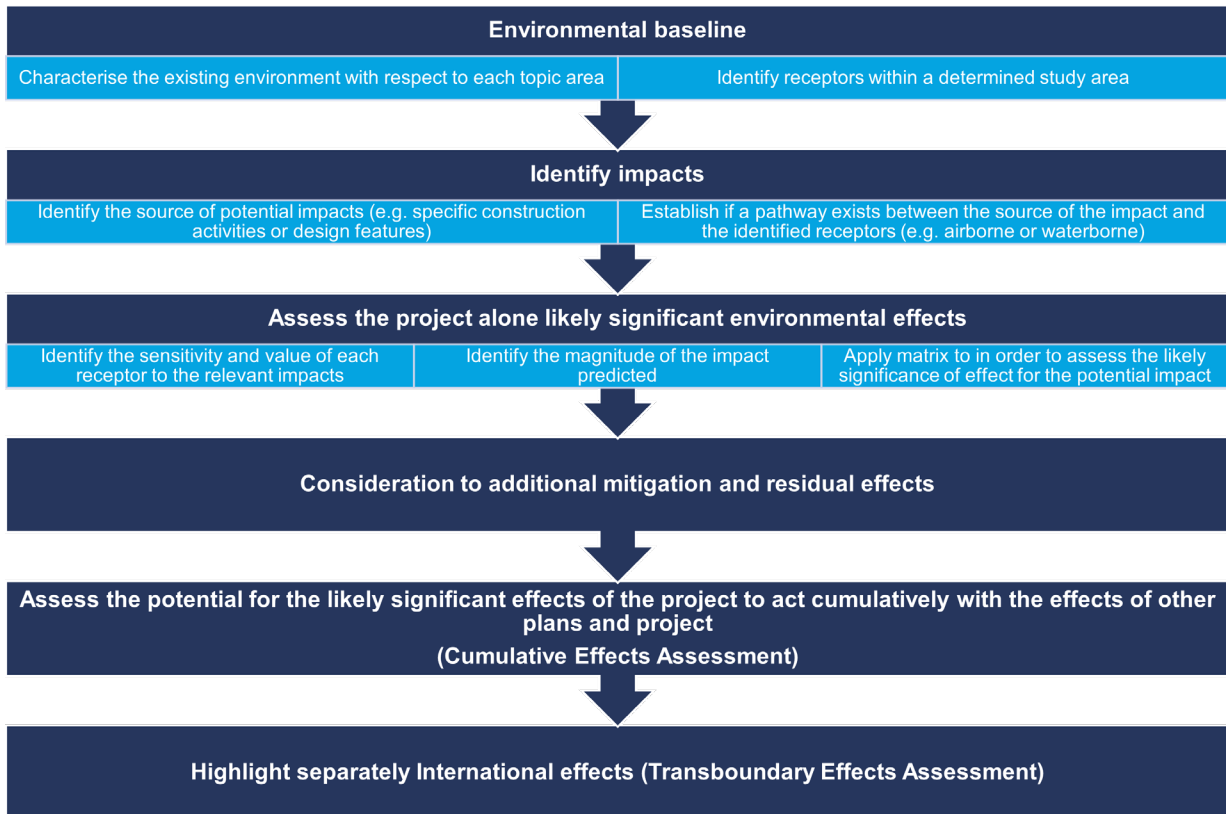
have been considered and discussed with the statutory consultees in order to avoid impacts or reduce them to acceptable levels.

- 6.65 The Schedule of Mitigation (Document Reference 5.5), provided with the DCO Application, summarises the mitigation proposed across the EIA, listing all measures proposed on a topic-by-topic basis, and signposts where commitments made in the ES have been secured in the draft DCO and associated documents.

## 6.7 Approach to EIA

- 6.66 Undertaking an EIA relies on a series of steps to identify a potential impact and arrive at a conclusion of likely significance of effect for each potential impact identified. The process involved following the steps below (as displayed in **Plate 6.1**):

- Characterise the existing environment (environmental baseline) with respect to each EIA topic area and identify receptors in the defined study area
- Assess the likely significant environmental effects of the Project by:
  - Identifying the source of potential impacts (e.g., specific construction activities or design features)
  - Establishing if a pathway exists between the source of the impact and the identified receptors (e.g., airborne or waterborne)
  - Identifying the sensitivity and value of each receptor to the relevant impacts
  - Identifying the magnitude of the impact predicted
  - Consideration of the receptor value/sensitivity and likely impact magnitude, in order to assess the likely significance of effect for the potential impact
  - Consideration of impact interactions and inter-relationships between topics
  - Consideration of mitigation where a likely significant effect has been determined
  - Determination of residual effects
- Assess the potential for the likely significant effects of the Project to act cumulatively with the effects of other plans and projects via a cumulative effects assessment (CEA)
- Identify international effects (Transboundary Effects Assessment), through assessment of effects outside of the UK



*Plate 6.1 EIA process steps*

6.67 The following sections provide further details on the above main steps.

### 6.7.1 Characterisation of the existing environment (environmental baseline)

6.68 To undertake an assessment of likely significant effects, an understanding of the current condition of the environmental baseline is required. For each EIA topic chapter, a review of the existing environment has been undertaken in order to determine the existing environmental conditions.

6.69 Characterisation of the environmental baseline for each EIA topic followed the steps listed below with the details provided in each of the respective technical chapters:

- Define the study area
- Review of available information and data (either through a desk-based exercise and/or survey data where necessary)
- Determine if sufficient data is available to assess the significance of likely environmental effects with sufficient confidence
- If further data is required, ensure data gathered addresses key data gaps

- Review information gathered to ensure the environment can be characterised in sufficient detail
- Identify the presence of relevant receptors with respect to each topic

6.70 The specific approach to establishing the characteristics of the existing environment for each EIA topic (upon which likely significant effects can be assessed) have been set out in each technical chapter (chapters 7 to 22). This approach considered feedback in the Scoping Opinion, alongside consultation with a range of statutory and non-statutory stakeholders, including feedback received via the EPP and on the PEIR.

#### **6.7.1.1 Future trends**

6.71 In accordance with the requirements of the EIA Regulations 2017, in addition to characterising the existing environment, anticipated trends in baseline conditions have been identified and incorporated in the impact assessments to outline the likely evolution of the baseline environment without the Project. For example, this included consideration of the likely significant effects of climate change on receptors.

6.72 The EIA Regulations 2017 require an outline of the expected evolution of the baseline, in the absence of the Project being developed (as far as this can be reasonably assessed based on available information and scientific knowledge). Each respective technical chapter of the ES presents the anticipated trend of the existing environment over the anticipated timescales of the Project's construction and operational lifespan (including a consideration of wider issues such as climate change and biodiversity loss). Such trends reflect changes in the baseline environment that may be expected to occur without development.

#### **6.7.1.2 Confidence and limitations**

6.73 Limitations to characterising the baseline environment (e.g., data coverage and confidence) are noted within each respective technical chapter of the ES. Where it is possible to do so, such limitations have been addressed within the ES. Addressing such limitations may be achieved through continued consultation with stakeholders and/or further survey efforts where appropriate and proportionate. The extent to which certain limitations may materially influence the outcome of the EIA have been highlighted within the respective technical chapters of the ES.

### **6.7.2 Assessment of likely significant effects**

6.74 The approach to making balanced assessments for the Project has been guided by the professional judgement of a team of technical specialists using available data and new data, drawing on extensive prior experience. The



technical specialists have drawn on recognised expert guidance for the assessment of likely significant effects from the relevant professional bodies and have been informed and guided by relevant academic research. This has formed a robust and adequate baseline to support the EIA.

- 6.75 To provide a consistent framework and system of common tools and terms, a matrix approach has been used to frame and present the expert judgements made. However, it should be noted that for each EIA topic, the latest guidance or best practice has been used and definitions of sensitivity and magnitude of impact are specific to each receptor (see **Section 6.7.2.3** and **Section 6.7.2.4**). These definitions have been detailed fully in each technical assessment chapter (chapters 7 to 22).

#### 6.7.2.1 Impact identification

- 6.76 The impact assessment has considered the potential for impacts during the construction, operation and maintenance and decommissioning phases of the Project. Potential impacts were classified as follows:
- Direct impacts: these may arise from impacts associated with the construction, operation and maintenance, or decommissioning of the Project
  - Indirect impacts: these may be experienced by a receptor that is removed (e.g., in space or time) from the direct impact (e.g., noise impacts upon fish which are a prey resource for other fish or marine mammals)
  - Inter-relationships between EIA topics
  - Interactions between impacts, whereby the same receptor or receptor group is affected by multiple impacts acting together
  - Cumulative impacts: these may occur as a result of the Project in conjunction with other existing or planned projects within the study area for each receptor (see **Section 6.7.3**)

#### 6.7.2.2 Impact pathway

- 6.77 The assessment used the conceptual ‘source-pathway-receptor’ model. This model identifies potential impacts resulting from the proposed activities on the environment and sensitive receptors within it. The process provides an easy to follow but robust assessment route between impact sources and potentially sensitive receptors ensuring a transparent impact assessment. The aspects of this model are defined as follows:
- Source – the origin of a potential impact (i.e., an activity such as cable installation and a resultant impact e.g., re-suspension of sediments)

- Pathway – the means by which the impact of the activity could affect a receptor (e.g. for the example above, re-suspended sediment could settle and smother seabed)
- Receptor – the element of the receiving environment that is impacted (this could either be a component of the physical, ecological or human environment such as water quality or benthic habitat, e.g., for the above example, species living on or in the seabed)

6.78 In general, the impact assessment for each EIA topic has used this model when considering the potential impacts arising during the construction, operation and maintenance and decommissioning phases of the Project. In some cases, it was appropriate to use other models for assessment, for example for the shipping and navigation assessment where a risk assessment approach was required.

### 6.7.2.3 Receptor sensitivity and value

6.79 As discussed in **Section 6.7.1**, each EIA topic chapter identifies the relevant receptors within the associated study area which may experience potential direct or indirect changes as a result of the construction, operation and maintenance and decommissioning of the Project. Identification of the receptors has been aided through engagement with stakeholders, both statutory and non-statutory, as discussed in **Section 6.32** and each technical chapter as relevant.

6.80 Once identified, receptors have been assigned a level of sensitivity proportionate to its vulnerability to each relevant impact. Value has also been considered in determining the sensitivity of some receptors, but the weight of value was dependent on the type of receptor. The overall receptor sensitivity has been determined by considering a combination of factors such as adaptability, tolerance and recoverability. This was achieved through applying known research and information on the status and sensitivity of the feature under consideration, coupled with professional judgement and past experience.

6.81 Example definitions of the different sensitivity levels for a generic receptor are given in **Table 6.6**. It should be noted that the definitions of sensitivity are not constant across all topic areas, and specific reference to the definitions of sensitivity for the topic-relevant receptors have been provided within each respective technical assessment chapter (chapters 7 to 22).

*Table 6.6 Example definition of different sensitivity levels for a generic receptor*

Sensitivity	Definition
High	Individual receptor has very limited or no capacity to avoid, adapt to, accommodate or recover from the anticipated impact.
Medium	Individual receptor has limited capacity to avoid, adapt to, accommodate or recover from the anticipated impact.
Low	Individual receptor has some tolerance to accommodate, adapt or recover from the anticipated impact.
Negligible	Individual receptor is generally tolerant to and can accommodate or recover from the anticipated impact.

6.82 In addition, the receptor value has been considered as a factor in the expert judgement conclusions in the impact assessment. For example, whether the receptor is rare, has designated, protected or threatened status, importance at local, regional, national or international scale, and in the case of biological receptors whether the receptor has a key role in the ecosystem function. An example definition for each value level which could be attributed to a generic receptor is given in **Table 6.7**.

*Table 6.7 Example definitions of the value levels for a generic receptor*

Value	Definition
High	Internationally/nationally important (for example internationally or nationally protected site).
Medium	Regionally important/regionally protected site.
Low	Locally important/rare but with high potential for mitigation.
Negligible	Not considered to be important (for example common or widespread).

6.83 The terms ‘high value’ and ‘high sensitivity’ are not necessarily linked within a particular impact and it is important not to inflate the significance of effect specifically because a feature is valued. As such value has been used alongside sensitivity (that considers other factors such as tolerance and recoverability).

6.84 Expert judgement is particularly important when determining the sensitivity of receptors. For example, an Annex II species (under the Habitats Regulations) would have a high inherent value but may be tolerant to an impact or have high recoverability. In this case, sensitivity should reflect the ecological robustness of the species and not necessarily default to its protected status.

#### **6.7.2.4 Assessment of impact magnitude**

6.85 In order to predict the significance of effect, it is fundamental to establish the magnitude of an impact occurring through a consideration of:

- Scale or spatial extent (small scale to large scale or a few individuals to most of the population)
- Duration (e.g. short term/temporary (single/multiple events over part of the project duration) to long term (over the duration of the project lifetime) to permanent (extending beyond the project lifetime))
- Likelihood of impact occurring (probability)
- Frequency
- Nature of change relative to the baseline

6.86 Definitions of impact magnitude are EIA topic specific and have been provided in each technical assessment chapter (chapters 7 to 22). Examples of definitions for a generic receptor are provided in **Table 6.8**.

*Table 6.8 Example of definitions of the magnitude levels for a generic receptor*

Magnitude	Definition
High	Fundamental, permanent/irreversible changes, over the whole receptor; and/or fundamental alteration to key characteristics or features of the particular receptor's character or distinctiveness.
Medium	Considerable, permanent/irreversible changes, over the majority of the receptor; and/or discernible alteration to key characteristics or features of the particular receptor's character or distinctiveness.
Low	Discernible, short term/temporary (events over part of the project duration e.g. seabed disturbance during construction) change, over a minority of the receptor; and/or limited but discernible alteration to key characteristics or features of the particular receptor's character or distinctiveness.
Negligible	Discernible, short term/temporary (events over part of the project duration e.g. seabed disturbance during construction) change, or barely discernible change for any length of time, over a small area of the receptor; and/or slight alteration to key characteristics or features of the particular receptor's character or distinctiveness.

### 6.7.2.5 Assessment of significance

6.87 The matrices and definitions of terms presented in this section have been applied to provide a framework and process for the consistent and clear expert impact assessment judgements made, culminating in the assessment of significant impacts under the EIA regulations 2017.

6.88 The significance of effect has been evaluated with reference to definitive standards, accepted criteria, technical guidance or legislation where these exist, for each EIA topic. Where it was not possible to quantify impacts, and where a qualitative or semi-qualitative assessment is made, a reasoned framework for the assessment has been provided.

6.89 Where guidance is available for defining sensitivity and magnitude (whether from professional guidance, UK Government publications or bespoke

definitions agreed with stakeholders) this has been referred to. If such sources are available but have not been used, the reason for the alternative approach taken is given.

- 6.90 The assessment of effect significance is a function of the sensitivity of the receptor (see **Section 6.7.2.3**) and the magnitude of the impact (see **Section 6.7.2.4**). The determination of significance has been guided by the use of a significance of effect matrix, as shown in **Table 6.9**.
- 6.91 Definitions of each level of significance have been provided in each topic assessment chapter (chapters 7 to 22) and examples are provided in **Table 6.10**.

*Table 6.9 Significance of effect matrix*

		Adverse magnitude				Beneficial magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Negligible	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

*Table 6.10 Example definitions of effect significance*

Significance	Definition
Major	A significant, very large or large change in receptor condition, both adverse or beneficial, which are likely to be important considerations at a national or population level because they contribute to achieving national objectives or could result in exceedance of statutory objectives and/or breaches of legislation.
Moderate	A noticeable and significant change in receptor condition, which are likely to be important considerations at a regional level.
Minor	Small change in receptor condition, which may be raised as localised issues.
Negligible	No discernible change in receptor condition.
No change	No impact, therefore no change in receptor condition.

- 6.92 Potential effects identified within the assessment as major or moderate are regarded within the ES as significant. As discussed in **Section 6.6.3**, mitigation has been identified where possible to avoid or reduce likely significant effects.

### 6.7.2.6 Inter-relationships

6.93 The assessment considered the inter-relationship of effects on individual receptors. For example, a landscape and visual effect and noise effect may both effect a single receptor; or the effects on fish and shellfish inter-relate with the effects of changes to prey resource for marine mammals and ornithology. This has been covered within each technical assessment chapter (chapters 7 to 22) in the inter-relationship section.

### 6.7.2.7 Interactions

6.94 The effects identified and assessed for each EIA topic have the potential to interact with each other, which could give rise to synergistic effects as a result of that interaction. The areas of interaction between effects are presented in each technical assessment chapter, along with an indication as to whether the interaction may give rise to synergistic effects. This provides a screening tool for which effects have the potential to interact. An assessment for each receptor (or receptor group) related to these effects has then been made in two ways. Firstly, the effects have been considered within a development phase (i.e., construction, operation and maintenance, or decommissioning) to see if, for example, multiple construction effects could combine. Secondly, a lifetime assessment has been undertaken which considers the potential for effects on receptors across development phases.

6.95 For example, increased suspended sediment concentrations and the subsequent seabed deposition impact interacts with the physical disturbance to seabed habitat impacts, as receptors would experience both impacts.

6.96 This has been covered within each technical assessment chapter (chapters 7 to 22) in the interactions section.

## 6.7.3 Cumulative effects assessment methodology

6.97 A cumulative effect results from changes caused by other past, present or reasonably foreseeable actions when considered together with the Project. The cumulative effects assessment (CEA) therefore considers existing developments and other reasonably foreseeable development-related activities occurring within a similar timeframe to the Project, for which there is reasonable information upon which to base a meaningful assessment. This allows assessment of effects that may not be significant when considering them for the Project-alone but could be significant when considering effects alongside other plans and projects.

6.98 PINS Advice Note Nine and its complementary guidance in Advice Note Seventeen (PINS, 2018; PINS, 2019) and Natural England advise that the following plans and projects should be considered in the CEA:

- Existing completed projects
- Projects that are under construction
- Ongoing activities
- Permitted applications not yet implemented
- Submitted applications not yet determined
- Projects on the PINS's Programme of Projects
- Plans and projects which are reasonably foreseeable

6.99 In order to undertake the cumulative assessment, the Zone of Influence (Zoi) is established alongside the identification of which individual impacts assessed for the Project have the potential for a cumulative effect on receptors (impact screening). Impacts for where the significance of effect is assessed in the Project-alone assessment as negligible, or above, are included in the CEA (i.e. only those assessed as 'no change' are not taken forward as there is no potential for them to contribute to a cumulative effect). For each impact, an assessment of pathways for cumulative effects have been identified, considering a source, pathway and receptor model, temporal overlap, spatial overlap (overlapping Zoi's) and incremental/additive effects within each study area.

6.100 The initial list of projects with the potential to interact with Project has been established, based on the potential mechanism of interaction and information regarding design/activities of each plan and project.

6.101 Cumulative effects may arise from, but are not limited to, interactions with the following activities and industries:

- Transmission works, including the proposed Transmission Assets for the Morecambe Offshore Windfarm and the Morgan Offshore Wind Project
- Other offshore windfarms
- Aggregate extraction and dredging grounds
- Licensed disposal sites
- Commercial fisheries (licencing plans)
- Sub-sea cables and pipelines
- Potential port and harbour development
- Oil and gas activities, including carbon capture
- Unexploded Ordnance (UXO) clearance
- Other energy generation infrastructure

6.102 For some topics (where for example the receptors include highly mobile or migratory species, fishing or shipping) the CEA has a large geographic scale and include many plans and projects. For other topics where receptors (or

impact ranges) are more spatially fixed the CEA would be narrower. The scope of the CEA has therefore been established on a topic-by-topic basis (as described in chapters 7 to 22). This included consideration of existing projects, whereby incremental changes in the study area can impact upon a receptor and result in cumulative effects (or where it is appropriate to consider existing projects as part of the baseline).

6.103 Following identification of plans and projects, a tiered approach was then adopted, where it was helpful to do so, to enable further assessment based on the availability of information for each project. This approach is based on the three-tier system proposed in PINS Advice Note Seventeen (PINS, 2019) as set out below. However, it is also noted that for some chapters where it was helpful to do so (and requested by stakeholders) the Natural England Tier (Natural England, 2022b) system has also been used.

#### **Tier 1<sup>8</sup>**

- Under construction
- Consented application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented
- Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined

#### **Tier 2**

- Projects on the PINS's Programme of Projects where a scoping report has been submitted

#### **Tier 3**

- Projects on the PINS's Programme of Projects where a scoping report has not been submitted
- Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals
- Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward

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<sup>8</sup> Existing projects and ongoing activities are also characterised as Tier 1 projects where they are not considered as part of the baseline.



- 6.104 In each technical assessment chapter, effects have been assessed per impact or grouped by Tier or type of activity/project, with overall consideration provided to establish cumulative effects of all plans and projects.
- 6.105 Only projects which are reasonably well described and sufficiently advanced to provide information on which to base a meaningful and robust assessment have been included in detail in the CEA. In line with the RenewableUK CEA Guidelines for offshore windfarms (RenewableUK, 2013), the approach to CEA attempts to incorporate an appropriate level of pragmatism. This is demonstrated in the understanding of other projects (either their design or their likely significant effects), particularly those that are known but currently lack detailed design documentation, such as those projects at the scoping stage only. Projects can be considered in the CEA only where it is considered that there is sufficient detail with which to undertake a meaningful assessment. Where there is a lack of specific information in the public domain it is not always possible to undertake a meaningful CEA. The CEA presents the most up to date information at the time of writing.
- 6.106 Each technical chapter of the ES (chapters 7-22) identifies the relevant plans and projects and the level of available information for assessment of each impact. An overall summary of plans and projects considered across the CEAs of all technical chapters is also given in **Appendix 6.1 CEA Project Long List** (Document Reference 5.2.6.1).

#### 6.7.4 Approach to Generation Assets and Transmission Assets effects

- 6.107 It is acknowledged that the Project and the Transmission Assets are operationally linked. The Morgan and Morecambe Offshore Wind Farms: Transmission Assets project is undergoing a separate consent application process (as described in **Chapter 1 Introduction** (Document Reference 5.1.1)) and as such has been considered within the CEA. Recognising the operational linkages with the Transmission Assets, effect pathways (connectivity) between the Project with the Transmission Assets have been identified in each technical chapter to separately assess the effects of the Transmission Assets alongside the Project. A cumulative assessment (of the Transmission and Generations Assets combined) is undertaken in each relevant technical chapter considering impact interactions (spatial overlap) as well additive effects (incremental effects on the same receptor). Following this a full cumulative assessment of all plans and projects (including Transmission Assets) has been undertaken alongside the Project.
- 6.108 At the time of writing, the PEIR was available for the Transmission Assets (Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Ltd, 2023). As such the parameters and project details within the Transmission Assets PEIR have been used to inform the CEA and consideration of the

Project and the Transmission Asset effects together. It is noted that there are limitations to the cumulative assessment of the Project and the Transmission Assets together (for example some EIA topics are not relevant to this ES (as there is no connectivity to impacts) but are part of the Transmission Assets EIA. As such, **Chapter 23 Summary: Generation and Transmission Assets Assessment** has also been produced to provide a summary in one place of effects that arise from both the Project and the Transmission Assets, and enables stakeholders to consider the combined 'whole project' effects (i.e. of both Generation and Transmission Assets).

### 6.7.5 Transboundary effects assessment methodology

- 6.109 The United Nations Economic Commission for Europe (UNECE) Convention on EIA in a Transboundary Context (referred to as the Espoo Convention) requires that assessments are extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary effects.
- 6.110 Regulation 32 of the EIA Regulations 2017 sets procedures to address issues associated with a development that is likely to have a significant effect on the environment in a Member State of the European Economic Area (EEA).
- 6.111 The procedures involve providing information to the Member State and for PINS to enter into consultation with that State regarding the likely significant effects of the development and the associated mitigation measures. Further advice on transboundary issues, in particular with regard to consultation is provided in the PINS Advice Note Twelve (PINS, 2020b).
- 6.112 For the Project, the potential for transboundary effects has been assessed in relation to socioeconomics, human health, marine mammals, offshore ornithology, commercial fisheries, fish and shellfish ecology and shipping and navigation.

### 6.7.6 Assumptions and limitations

- 6.113 Topic-specific assumptions and limitations to the assessment have been highlighted within the respective technical assessment chapters of the ES, detailing how the Applicant has addressed such limitations.

## 6.8 Summary of compliance with 2017 EIA Regulations

- 6.114 Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 specifies the information to be included in the ESs for Nationally Significant Infrastructure Projects. In addition, Regulation 14 also details information which must be included within the ES. **Table 6.11** summarises these requirements and signposts where these details can be found within this ES.

Table 6.11 2017 EIA Regulations: Information for Inclusion in ESs

Information for Inclusion in Environmental Statements	How has this information been provided within the Project ES
<p>A description of the development, including in particular—</p> <ul style="list-style-type: none"> <li>▪ a description of the location of the development</li> <li>▪ a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases</li> <li>▪ a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used</li> <li>▪ an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.</li> </ul>	<p><b>Chapter 5 Project Description</b> provides a detailed description of the Project including its location and physical characteristics. This chapter also describes the main characteristics of the tasks required during the construction, operation and decommissioning phases of the project, setting out estimated durations of tasks, materials required and equipment likely to be used.</p> <p>Requirements pertaining to onshore receptors (e.g. land, soil, air) are not addressed as the Project only covers the offshore generation assets.</p>
<p>A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.</p>	<p>The reasonable alternatives considered in the development of the proposed project design are discussed and presented in <b>Chapter 4 Site Selection and Assessment of Alternatives</b>. The process of the design development for the Project, the consultation undertaken and how the views expressed during consultation have influenced the design development decisions and final Project design are summarised within <b>Chapter 4 Site Selection and Assessment of Alternatives</b>.</p> <p>The comparative environmental effects of key design decisions and options considered are also presented as part of <b>Chapter 4 Site Selection and Assessment of Alternatives</b>.</p>

Information for Inclusion in Environmental Statements	How has this information been provided within the Project ES
<p>A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.</p>	<p>For each of the technical assessment chapters within the ES, a detailed baseline environment is described, as agreed through the scoping and EPP processes. In many cases, this uses survey information gathered specifically to support the robust EIA for the Project.</p> <p>In all relevant technical assessment chapters, the likely evolution of the baseline without the implementation of the project is also presented.</p>
<p>A description of the factors specified in regulation 5(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.</p>	<p>This requirement is fulfilled in the following impact assessment chapters within the ES. Requirements pertaining to onshore receptors (e.g. land, soil and air) are not addressed as the Project only covers the offshore generation assets.</p> <p><u>Human Health</u></p> <ul style="list-style-type: none"> <li>▪ <b>Chapter 19 Human Health</b></li> </ul> <p><u>Biodiversity</u></p> <ul style="list-style-type: none"> <li>▪ <b>Chapter 9 Benthic Ecology</b></li> <li>▪ <b>Chapter 10 Fish and Shellfish Ecology</b></li> <li>▪ <b>Chapter 11 Marine Mammals</b></li> <li>▪ <b>Chapter 12 Offshore Ornithology</b></li> </ul> <p><u>Climate</u></p> <ul style="list-style-type: none"> <li>▪ <b>Chapter 2 Need for the Project</b></li> <li>▪ <b>Chapter 3 Policy and Legislation</b></li> <li>▪ <b>Chapter 21 Climate Change</b></li> </ul>

Information for Inclusion in Environmental Statements	How has this information been provided within the Project ES
	<p><u>Material assets</u></p> <ul style="list-style-type: none"> <li>▪ <b>Chapter 7 Marine Geology, Oceanography and Physical Processes</b></li> <li>▪ <b>Chapter 17 Infrastructure and Other Users</b></li> <li>▪ <b>Chapter 22 Traffic and Transport</b></li> <li>▪ <b>Chapter 20 Socio-Economics and Tourism and Recreation</b></li> </ul> <p><u>Cultural heritage, including architectural and archaeological aspects</u></p> <ul style="list-style-type: none"> <li>▪ <b>Chapter 15 Marine Archaeology and Cultural Heritage</b></li> </ul> <p><u>Landscape</u></p> <ul style="list-style-type: none"> <li>▪ <b>Chapter 18 SLVIA</b></li> </ul>
<p>A description of the likely significant effects of the development on the environment resulting from, inter alia—</p> <ol style="list-style-type: none"> <li>a. the construction and existence of the development, including, where relevant, demolition works;</li> <li>b. the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;</li> <li>c. the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;</li> <li>d. the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);</li> <li>e. the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;</li> <li>f. the impact of the project on climate (for example the nature and</li> </ol>	<p>The significant effects arising from the Project alone and cumulatively with other relevant developments have been comprehensively assessed within each technical assessment within this ES (chapters 7 – 22).</p> <p>Potential impacts from major accidents or disasters are discussed in <b>Chapter 5 Project Description</b>.</p> <p>Potential implications of climate change are discussed within relevant technical chapters and are addressed specifically in <b>Chapter 21 Climate Change</b>.</p> <p>Technologies and materials likely to be deployed in the Project are discussed in <b>Chapter 5 Project Description</b> and throughout the technical assessment chapters.</p> <p><b>Chapter 6 EIA Methodology</b> sets out the generalised EIA methodology including the cumulative effects assessment and inter-relationships used in this ES to ensure a consistency of approach. Each technical chapter presents the detailed and specific assessment data analysis, and impact assessment methodologies applied to assess each potential impact identified. Each technical chapter also</p>

Information for Inclusion in Environmental Statements	How has this information been provided within the Project ES
<p>magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;</p> <p>g. the technologies and the substances used.</p> <p>The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC and Directive 2009/147/EC.</p>	<p>considers the potential cumulative impacts of the project taken together with other relevant plans, projects and activities (including a 'combined' assessment of the Project and the Transmission Assets) and the potential inter-relationships between impacts.</p>
<p>A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.</p>	<p>Forecasting methods used to identify and assess significant effects on the environment are discussed in the overall EIA methodology in <b>Chapter 6 EIA Methodology</b> and are also covered in more specific detail in each technical chapter EIA methodology and impact assessment.</p>
<p>A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.</p>	<p>Mitigation measures include embedded mitigation, which are design decisions taken to reduce environmental impacts of the Project as part of the design development and additional mitigation measures which are proposed as ways of further reducing the assessed likely significant environmental impacts. Each technical assessment includes an explanation of the embedded mitigation measures and where appropriate additional mitigations proposed.</p> <p>Any proposed monitoring has been presented in the ES which has been submitted as part of the DCO Application.</p>
<p>A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and</p>	<p>Potential impacts from major accidents or disasters are discussed in <b>Chapter 5 Project Description</b>.</p> <p>A Navigation Risk Assessment and Cumulative Regional Navigation Risk Assessment have also been prepared and are included as</p>

Information for Inclusion in Environmental Statements	How has this information been provided within the Project ES
<p>obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.</p>	<p><b>Appendix 14.1 Navigation Risk Assessment and Appendix 14.2 Cumulative Regional Navigation Risk Assessment.</b></p>
<p>A non-technical summary of the information provided in respect of the above requirements.</p>	<p>A Non-Technical Summary is provided as part of the DCO Application (Document Reference 5.1).</p>
<p>A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.</p>	<p>A reference list is provided at the end of each chapter.</p>
<p><b>Competent Expert</b>            Regulation 14(4): In order to ensure the completeness and quality of the environmental statement—</p> <ul style="list-style-type: none"> <li>(a) the applicant must ensure that the environmental statement is prepared by competent experts; and</li> <li>(b) the environmental statement must be accompanied by a statement from the applicant outlining the relevant expertise or qualifications of such experts.</li> </ul>	<p>The competency of the EIA team and experts is discussed in <b>Section 6.4.</b></p>

## 6.9 Summary

- 6.115 This chapter of the ES sets out a framework methodology for the assessments presented within each of the individual technical topic chapter. Where a technical topic assessment departed from the framework set out within this chapter, it has been highlighted and explained within the respective topic chapter.
- 6.116 The approach to the EIA outlined within this chapter accords with all relevant legislation and policy, in particular the Planning Act 2008 and associated EIA Regulations 2017.



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