

# MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

## Environmental Statement

### Volume 3, Annex 5.2: Transboundary impacts screening

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**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

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### Glossary

Term	Meaning
Cetacean	The order Cetacea includes whales, dolphins and porpoises, collectively known as cetaceans.
Crown Dependency	Self-governing possessions of the British Crown.
European Economic Area	The European Economic Area consists of the Member States of the European Union (EU) and three countries of the European Free Trade Association - Iceland, Liechtenstein and Norway; excluding Switzerland.
European Sites	Designated nature conservation sites which include the National Site Network (designated within the UK) and Natura 2000 sites (designated in any European Union country). This includes Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Exclusive Economic Zone (EEZ)	Defined under the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the EEZ is an area of the ocean extending up to 200 nautical miles immediately offshore from a country's land coast in which that country retains exclusive rights to the exploration and exploitation of natural resources.
The Planning Inspectorate	The agency responsible for operating the planning process for applications for development consent under the Planning Act 2008.
Transboundary impacts	Impacts that may arise from an activity within one state that affect the environment or other interests of another state.

### Acronyms

Acronym	Description
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMF	Electromagnetic field
EnBW	Energie Baden-Württemberg
EU	European Union
DCO	Development Consent Order
GHG	Green House Gas
HRA	Habitats Regulations Assessment
ISAA	Information to Support the Appropriate Assessment
ISEFPO	Irish South and East Fish Producers Organisation
MHWS	Mean High Water Springs
MMEA	Manx Marine Environmental Assessment
MMO	Marine Management Organisation
MU	Management Unit
OSP	Offshore Substation Platform

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Acronym	Description
PEIR	Preliminary Environmental Information Report
PSR	Primary Surveillance Radar
SAR	Search and Rescue
SCOS	Special Committee on Seals
SSC	Suspended Sediment Concentrations
UNECE	The United Nations Economic Commission for Europe
UXO	Unexploded Ordnance

## Units

Unit	Description
km	Kilometres
km <sup>2</sup>	Kilometres squared
nm	Nautical mile

# **1 Transboundary impacts screening**

## **1.1 Introduction**

- 1.1.1.1 Morgan Offshore Wind Limited (the Applicant), a joint venture of bp Alternative Energy Investments Ltd. (hereafter referred to as bp) and Energie Baden-Württemberg AG (hereafter referred to as EnBW) is developing the Morgan Offshore Wind Project: Generation Assets (hereafter Morgan Generation Assets).
- 1.1.1.2 Transboundary impacts relate to those impacts that may arise from an activity within one state that affect the environment or other interests of another state. Transboundary impacts are screened in for any impact that has the potential to affect a state within its Exclusive Economic Zone (EEZ) (the maritime area which extends from a country's coast in which that country retains exclusive rights to the exploration and exploitation of natural resources). The Morgan Generation Assets is a project within UK waters, Transboundary impacts are considered in relation to any applicable state outside of the UK.
- 1.1.1.3 This annex provides the screening assessment of the potential for transboundary impacts to occur on the environment or interests of other states as a result of the Morgan Generation Assets. The screening assessment is based on what is currently known of the likely spatial scale of potential impacts arising from the Morgan Generation Assets and the economic interests of other states in the vicinity.
- 1.1.1.4 This annex is intended to provide information to The Planning Inspectorate such that the Secretary of State can undertake a screening for potential significant transboundary effects under Regulation 32 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations). This document provides an update to the transboundary screening annex that was published within the Preliminary Environmental Information Report (PEIR).
- 1.1.1.5 It should be noted that the Isle of Man is a Crown Dependency of the UK and not a European Economic Area (EEA) State. Therefore, Regulation 32 of the EIA Regulations does not apply to the Isle of Man. For this reason, it is not considered to be a transboundary consultee for the Morgan Generation Assets. As such, potential impacts upon environmental receptors within the Isle of Man are not considered to be transboundary. Potential impacts upon environmental receptors within the Isle of Man are fully considered in the Environmental Statement (see volume 2, Chapters 1 to 15 of the Environmental Statement).

## **1.2 Legislative context**

- 1.2.1.1 The need to consider potential transboundary impacts has been embodied by The United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context, adopted in 1991 in the Finnish city of Espoo and is commonly referred to as the 'Espoo Convention'. The Convention requires that assessments are extended across borders between Parties to the Convention when a planned activity may cause significant adverse transboundary impacts. The Convention is aimed at preventing, mitigating and monitoring environmental damage by ensuring that explicit consideration is given to transboundary environmental factors before a final decision is made as to whether to approve a project. The Espoo Convention requires that the Party of origin notifies affected Parties about activities listed in Appendix I of the Convention (which includes

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‘major installations for the harnessing of wind power for energy production (wind farms)’ and likely to cause a significant adverse transboundary impact.

1.2.1.2 Regulation 32 of the EIA Regulations sets out a prescribed process of consultation and notification where the Secretary of State is of the view that a development is likely to have significant transboundary environmental effects.

### 1.3 Guidance

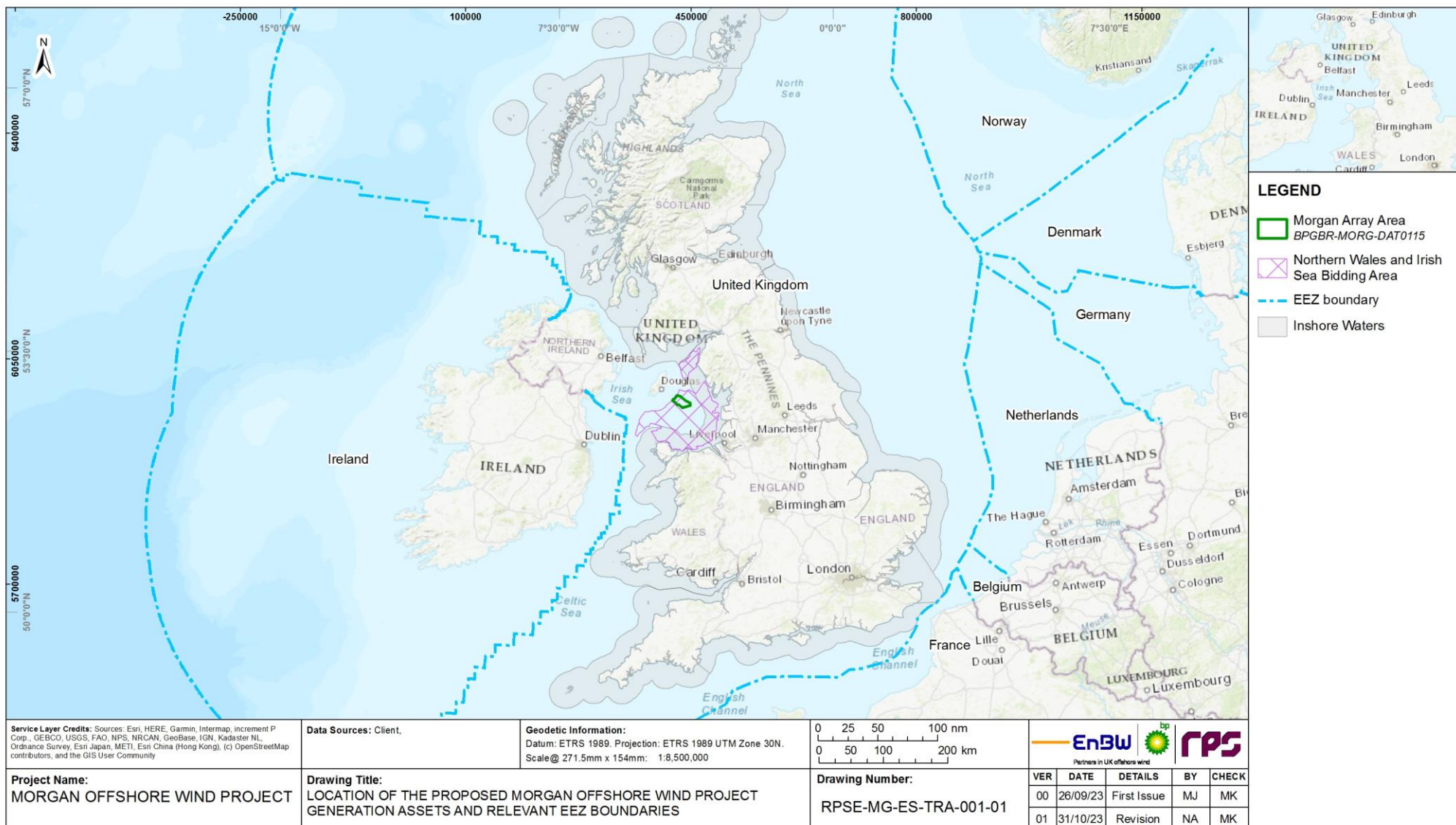
1.3.1.1 The Planning Inspectorate’s Advice Note Twelve (The Planning Inspectorate, 2020) sets out the procedures for consultation in association with an application for a Development Consent Order (DCO), where such development may have significant transboundary impacts. The note sets out the roles of The Planning Inspectorate, other states and developers.

1.3.1.2 Applicants have no formal role under the Regulation 32 process, as the duties prescribed by Regulation 32 in notifying and consulting with other states on potential transboundary impacts are the responsibility of the Secretary of State. However, applicants are advised to:

- Consider, when preparing documents for consultation and application, that The Planning Inspectorate may notify the relevant state of their particular project
- Carry out preparatory work to complete a transboundary screening matrix to assist the Secretary of State in determining the potential for likely significant effects on the environment in other states
- Submit the transboundary screening matrix along with the scoping request, if a Scoping Opinion is sought by the developer (a transboundary impacts screening matrix was submitted with the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022)).

1.3.1.3 This transboundary screening annex provides information about the Morgan Generation Assets which is the subject of the DCO application. It sets out information relating to the potential impacts of the Morgan Generation Assets and the interests of the other states in the vicinity, in order to assist The Planning Inspectorate in forming a view on the likelihood of significant transboundary impacts arising from the Morgan Generation Assets. The information contained within the Annex to Advice Note Twelve (The Planning Inspectorate, 2020) (including the criteria and considerations that will be taken into account by The Planning Inspectorate during screening), have also been used in the preparation of this transboundary screening annex.

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**Figure 1.1 Location of the Morgan Generation Assets and relevant EEZ boundaries.**



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**1.4 Consultation**

1.4.1.1 The Applicant produced an EIA Scoping Report (Morgan Offshore Wind Ltd, 2022) and a PEIR (Morgan Offshore Wind Ltd, 2023) for the Morgan Generation Assets, which included transboundary impacts screening. Consultation on the EIA Scoping Report and PEIR was undertaken in accordance with the Planning Act 2008 and associated guidance and regulations, including the EIA Regulations. As part of this consultation, relevant transboundary consultees have been contacted (see Table 1.1).

**Table 1.1: Summary of key topics raised during consultation activities undertaken for the Morgan Generation Assets relevant to transboundary impacts.**

<sup>1</sup> Management units (MUs) for marine mammals in UK waters, which provide an indication of the spatial scales at which impacts of plans and projects alone, cumulatively and in combination, need to be assessed for the key cetacean species in UK waters, with consistency across the UK. For cetaceans, these management units are defined by the Inter-Agency Marine Mammal Working Group. For seal species (grey and harbour seals), the Special Committee on Seals (SCOS) provided advice on seal MUs.

Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this annex
June 2021	Irish South and East Fish Producers Organisation (ISEFPO) (as part of broader consultation meeting with other fishing industry representatives) Consultation meeting	There are seven Irish scallop vessels that are normally active in the area from December to April.  Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase. Scallop vessel representatives stated that they would require greater spacing of wind turbines.  Queries regarding cumulative impacts with other activities and developments in the region.  Queries regarding impacts on fish stocks.  Long-term datasets were recommended where possible, particularly due to the dynamic nature of queen scallop beds.	Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex.  Commercial fisheries is discussed further in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.
July 2021	Rederscentrale – Belgian beam trawlers (as part of broader consultation meeting with other fishing industry representatives) Consultation meeting	Belgian vessels active in the east part of the Irish Sea during winter months.	Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex.  Commercial fisheries is discussed further in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.

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Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this annex
February 2022	Rederscentrale – Belgian beam trawlers Consultation meeting	Queries regarding cumulative and in-combination impacts with other activities and developments. Queries regarding impacts on fish stocks.	Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex. Cumulative effects on commercial fisheries have been assessed in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.
March 2022	P&O – ferry operator route between Liverpool and Dublin Letter	Questionnaire issued to operators requesting details of existing operational details and constraints in normal and adverse weather.	Transboundary effects relating to shipping and navigation are considered within section 1.6.2 of this transboundary screening annex.
August 2022	P&O – ferry operator route between Liverpool and Dublin	Invitation to Navigation simulations to inform PEIR (P&O declined attendance, the Liverpool to Dublin route is outside of the study area for shipping and navigation).	Transboundary effects relating to shipping and navigation are considered within section 1.6.2 of this transboundary screening annex.
August 2022	The Planning Inspectorate – Scoping Opinion	The Inspectorate notes the information provided and agrees that significant transboundary effects to other sea users in the context of this aspect chapter are unlikely and can be scoped out of the Environmental Statement.	Transboundary effects relating to other sea users have been scoped out of the Environmental Statement. Please see Other sea users of the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022) and section 1.6.2 of this transboundary screening annex.
		The Inspectorate notes the information provided and agrees that significant onshore transboundary effects to seascape, landscape and visual resources are unlikely and can be scoped out of the Environmental Statement.	Transboundary effects relating to onshore seascape, landscape and visual resource receptors have been scoped out of the Environmental Statement. Please see section 9.1: Seascape, landscape and visual resources of the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022). A screening assessment for potential transboundary effects on offshore receptors is presented in section 1.6.3 of this transboundary screening annex.
		The Inspectorate notes the information provided and agrees that significant onshore transboundary effects are unlikely and can be scoped out of the Environmental Statement.	Transboundary effects relating to onshore receptors have been scoped out of the Environmental Statement. Please see section 7: Onshore biological environment and section 8: Onshore human environment of the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022).

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Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this annex
		<p>The Inspectorate notes the information provided and agrees that significant onshore transboundary effects to aviation and radar are unlikely and can be scoped out of the Environmental Statement.</p>	<p>Transboundary effects relating to onshore aviation and radar receptors have been scoped out of the Environmental Statement. Please see section 9.2: Aviation and Radar of the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022). A screening assessment for potential transboundary effects on offshore receptors is presented in section 1.6.4 of this transboundary screening annex.</p>
		<p>The Inspectorate notes the information provided and agrees that significant onshore transboundary effects from noise and vibration are unlikely and can be scoped out of the Environmental Statement.</p>	<p>Transboundary effects relating to onshore noise and vibration receptors have been scoped out of the Environmental Statement. Please see section 8.4: Noise and vibration of the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022).</p>
<p>August 2022</p>	<p>The Marine Management Organisation</p>	<p>Potential transboundary impacts to fisheries and fish ecology during the construction, operation, and decommissioning phases have been described in Annex A of the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022). The potential transboundary impacts to be scoped into the EIA process include underwater sound, loss of fish habitat, disturbance to habitat due to increased suspended sediment concentrations (SSCs) and associated sediment deposition. The Marine Management Organisation (MMO) agrees that these impacts are appropriate, and that suitable consideration has been given regarding the scale of study area.</p>	<p>Potential transboundary impacts on fish and shellfish are considered within section 1.6.1 of this transboundary screening annex and Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.</p>
<p>August 2022</p>	<p>Natural England – Scoping Opinion</p>	<p>Marine mammal management units<sup>1</sup> should be used to screen in transboundary sites.</p>	<p>Marine mammal MUs have been considered within section 1.6.1 and Volume 2, Chapter 4: Marine mammals of the Environmental Statement.</p>

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Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this annex
November 2022	ISEFPO Consultation meeting	<p>Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase.</p> <p>Discussion regarding inter-array cable layout and burial depth and concerns regarding snagging.</p>	<p>Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex.</p> <p>Commercial fisheries is discussed further in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.</p>
November 2022	Rederscentrale – Belgian beam trawlers Consultation meeting.	<p>Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase. Noted that fishing between wind turbines of 1 km is difficult due to safety reasons. Noted that Rederscentrale vessels do not fish within the Morgan Array Area; their fishing activity is mostly to the east of the Morgan Array Area.</p> <p>Discussion regarding inter-array cable layout and burial depth. Noted that Rederscentrale’s beam trawl vessels that operate within the Irish Sea are using a newer gear technology which does not penetrate as deep into the seabed.</p>	<p>Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex.</p> <p>Commercial fisheries is discussed further in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.</p>
June 2023	Isle of Man Department of Infrastructure (response to PEIR)	<p>By definition, transboundary effects cannot assume that designations or an equivalent assessment are the same either side of the boundary, and therefore Isle of Man marine conservation designations, for example Marine Nature Reserves (under the Wildlife Act 1990) need to be treated as equivalent, or clearly justified as to why they are not. The Isle of Man is a signatory to various international treaties and conventions, via the UK and, as such, has its own jurisdictional responsibilities.</p>	<p>As described in paragraph 1.1.1.5, potential impacts upon environmental receptors within the Isle of Man are not considered to be transboundary and are fully considered in the Environmental Statement. Potential impacts on Isle of Man Marine Nature Reserves are considered within the following chapters:</p> <ul style="list-style-type: none"> <li>• Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement</li> <li>• Volume 2, Chapter 4: Marine mammals of the Environmental Statement</li> <li>• Volume 2, Chapter 5: Offshore ornithology of the Environmental Statement.</li> </ul>

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Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this annex
June 2023	Isle of Man Department of Infrastructure (response to PEIR)	The transboundary screening should take account the Manx Marine Environmental Assessment (MMEA) which provides a useful overview of the Island's marine environment and should be taken into account as part of both the transboundary and possibly also the cumulative impacts assessment as part of this application.	<p>The MMEA has been considered and referenced in the following chapters and annexes:</p> <ul style="list-style-type: none"> <li>• Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement</li> <li>• Volume 4, Annex 2.1: Benthic subtidal ecology technical report of the Environmental Statement</li> <li>• Volume 4, Annex 3.1: Fish and shellfish ecology technical report of the Environmental Statement</li> <li>• Volume 4, Annex 4.1: Marine mammals technical report of the Environmental Statement.</li> </ul>
June 2023	Isle of Man Department of Infrastructure (response to PEIR)	The Environmental Statement should include a statement on the consideration of/effects on Manx bird populations within the transboundary assessment.	Potential impacts on Manx bird populations are considered within Volume 2, Chapter 5: Offshore ornithology of the Environmental Statement.
June 2023	Isle of Man Department of Infrastructure (response to PEIR)	<p>The Isle of Man territorial sea lies almost entirely within the Morgan Commercial Fisheries Area (Figure 11.1) and, as such, Manx commercial fisheries should be comprehensively considered in the PEIR and future EIA assessments using the best available data.</p> <p>As the Isle of Man is not part of the UK, the assessment must be considered in the context of a separate/neighbouring jurisdiction, with its own legislative system, and in terms of transboundary effects.</p>	Potential impacts on Manx commercial fisheries are considered within Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.
September 2023	Rederscentrale – Belgian beam trawlers Consultation meeting – S42 response discussion and update on project changes and commitments.	<p>Concern raised regarding rock protection in areas where the minimum burial depth of cable has not been achieved within the Morgan Array Area.</p> <p>Confirmed that sole is the target species.</p>	<p>Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex.</p> <p>Commercial fisheries is discussed further in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.</p>

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Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this annex
October 2023	ISEFPO	<p>Queries raised regarding cable burial, rock protection and the potential for a snagging risk.</p> <p>Agreed to provide additional information on scallop grounds fished by Irish vessels.</p>	<p>Transboundary effects relating to commercial fishing operators are considered within section 1.6.2 of this transboundary screening annex.</p> <p>Commercial fisheries is discussed further in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.</p>

## 1.5 Screening of transboundary impacts

- 1.5.1.1 A series of screening matrices for potential transboundary impacts associated with the Morgan Generation Assets are presented for the offshore physical and biological environment (Table 1.3) and offshore human environment (Table 1.4). These screening matrices have been based upon the assessment of potential impacts, as presently known, arising from the Morgan Generation Assets (on the basis of the project description presented in Volume 1, Chapter 3: Project description of the Environmental Statement) and follow the suggested format set out in The Planning Inspectorate’s Advice Note Twelve (The Planning Inspectorate, 2020).
- 1.5.1.2 The screening matrices consider all potential transboundary impacts that may occur from all phases of the Morgan Generation Assets (i.e. construction, operations and maintenance, and decommissioning). The matrices also address the predicted spatial and temporal scale of potential transboundary impacts for those interests that are assessed within the Environmental Statement.
- 1.5.1.3 Potential impacts upon European Sites within EEA states (as well as those in the UK) are considered separately within the screening process for the Habitats Regulations Assessment (HRA) (see HRA Stage 1 Screening report (Document Reference: E1.4)).
- 1.5.1.4 The distance of the Morgan Generation Assets from the jurisdictional boundary of the nearest applicable states is presented in Table 1.2.

**Table 1.2: Summary of distance from the Morgan Array Area to the nearest applicable state Exclusive Economic Zone (EEZ) border.**

State	Approximate distance from the Morgan Array Area to nearest applicable state EEZ border (km)
Ireland	77.3
Belgium	491.3

## 1.6 Transboundary impacts

### 1.6.1 Physical and biological environment

- 1.6.1.1 A screening matrix has been completed for potential transboundary impacts for the physical and biological environment and is presented in Table 1.3. The conclusions of

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the transboundary screening for each offshore physical and biological environment topic are presented in the following sections. Where transboundary impacts have been screened into the EIA process, the assessment is presented in the relevant topic chapter of the Environmental Statement.

### Physical processes

- 1.6.1.2 The Morgan Generation Assets are located entirely within the UK EEZ. Any potential impacts on physical processes are likely to be confined to within one tidal excursion of the Morgan Generation Assets (i.e. potential changes to the wave regime, tidal regime and sediment transport due to the presence of infrastructure, and potential changes in SSC related to construction and maintenance activities).
- 1.6.1.3 No transboundary impacts upon physical processes are anticipated. Transboundary impacts upon physical processes are screened out of the EIA process.

### Benthic subtidal ecology

- 1.6.1.4 It is considered that there is no pathway by which direct or indirect impacts arising from the Morgan Generation Assets would have the potential to significantly affect the benthic subtidal or intertidal ecology of another state. The extent of any predicted impacts upon benthic subtidal ecological receptors is likely to be limited to the footprint of the Morgan Generation Assets (for temporary and long-term habitat loss and colonisation or removal of hard substrates) and within one tidal excursion of the Morgan Generation Assets (for changes in SSCs and associated deposition and changes in physical processes).
- 1.6.1.5 No transboundary impacts upon benthic subtidal ecology are anticipated. Transboundary impacts on benthic subtidal ecology are screened out of the EIA process.

### Fish and shellfish ecology

- 1.6.1.6 There is potential for transboundary impacts upon fish and shellfish ecology during the construction, operations and maintenance and decommissioning phases of the Morgan Generation Assets. There is potential for direct impacts due to underwater sound from piling operations and indirect impacts caused by loss of fish and shellfish habitat or disturbance to habitat due to increased SSCs and associated sediment deposition from the installation and decommissioning of foundations and cables.
- 1.6.1.7 These activities have the potential to directly affect Annex II migratory fish species that are listed as features of European Sites in other states, or species that are of commercial importance for fishing fleets of other states. Indirect impacts may include loss of or disturbance to fish spawning and nursery habitats in the Irish Sea that are important for migratory fish species either designated as Annex II species or of commercial importance to other states. The fish and shellfish receptors likely to be present within the Morgan Generation Assets fish and shellfish study area are outlined in full in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement and include a number of commercially important species as well as diadromous species likely to be found in the area. Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement also identifies the spawning and nursery grounds located within and around the Morgan Generation Assets.
- 1.6.1.8 An assessment of the potential impacts related to construction, particularly as a result of underwater sound from piling, is presented in Volume 2, Chapter 3: Fish and

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shellfish ecology of the Environmental Statement (including both a Morgan Generation Assets assessment and a cumulative assessment). The majority of potential impacts related to construction are considered likely to be short term and temporary. The operations and maintenance phase is considered less likely to result in likely significant effects compared with the construction phase, due to potential impacts being limited spatially (i.e. within the boundaries of the Morgan Generation Assets). The potential impacts associated with long term habitat loss are, by nature, longer term impacts which may be reversible depending on the decommissioning strategy.

- 1.6.1.9 Potential transboundary impacts on fish and shellfish ecology and their nature conservation interests are screened into the EIA process. A transboundary assessment has been completed and is included in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement. Potential impacts upon European Sites with fish as a qualifying feature are assessed within the Information to Support the Appropriate Assessment (ISAA) (Document Reference E1).

### Marine mammals

- 1.6.1.10 There is potential for transboundary impacts upon marine mammals due to the mobile nature of marine mammal species. The marine mammal species likely to be present in the Morgan marine mammal study area are outlined in Volume 2, Chapter 4: Marine mammals of the Environmental Statement. Key species include harbour porpoise, bottlenose dolphin, short-beaked common dolphin, Risso's dolphin, minke whale and grey seal.
- 1.6.1.11 Direct impacts may occur due to underwater sound generated during construction and decommissioning, including sound associated with construction and vessel activity. Pile driving during the installation of foundations and pre-construction clearance of Unexploded Ordnance (UXO) are key activities linked to elevated underwater sound. Potential indirect effects to marine mammal receptors from changes in prey availability could occur as a result of factors such as habitat loss, underwater sound, increased SSCs and associated sediment deposition and other potential impacts scoped in for fish and shellfish receptors. The operations and maintenance phase is considered less likely to result in significant effects although the potential effects associated with the operational sound of wind turbines and Electromagnetic Fields (EMF) are, by nature, longer term and reversible depending on the decommissioning strategy.
- 1.6.1.12 An assessment of the potential impacts to marine mammals occurring during construction, particularly as a result of underwater sound from piling, is presented in Volume 2, Chapter 4: Marine mammals of the Environmental Statement (including both a Morgan Generation Assets assessment and a cumulative assessment). The majority of potential likely significant effects related to construction are considered likely to be short term and temporary.
- 1.6.1.13 Potential transboundary impacts to marine mammals and their nature conservation interests are screened into the EIA process. A transboundary assessment has been completed and is included in Volume 2, Chapter 4: Marine mammals of the Environmental Statement. Potential impacts to European Sites with marine mammals as a qualifying feature are assessed within the ISAA (Document Reference E1).

### Offshore ornithology

- 1.6.1.14 There is potential for transboundary impacts to ornithological receptors due to the wide foraging and migratory ranges of typical bird species in the Irish Sea. In addition, a number of bird species that have been recorded in the vicinity of the Morgan



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Generation Assets include those that are listed as qualifying features of European Sites in other states. The bird species likely to be present in the Morgan Array Area are outlined in Volume 2, Chapter 5: Offshore ornithology of the Environmental Statement and include true pelagic seabirds (e.g. kittiwake, guillemot and gannet), other species that spend part of their annual life cycle at sea (e.g. gulls) as well as non-seabird migrants (e.g. wildfowl, waders and passerines).

- 1.6.1.15 The key potential direct impacts for ornithological receptors are likely to arise during the operations and maintenance phase. Unlike the majority of potential impacts during construction, which are considered likely to be short term and temporary, potential impacts during the operations and maintenance phase are likely to be long term, continuous and of varying spatial extent depending on the species, although it is likely that they will be reversible following the decommissioning of the Morgan Generation Assets. Collision risk with rotating wind turbine blades may result in direct mortality of individuals, and barrier to movement caused by the physical presence of structures may prevent clear transit of birds between foraging and breeding sites, or on migration. Potential direct impacts to ornithological receptors may also occur due to temporary habitat loss/disturbance across all phases of the Morgan Generation Assets and permanent habitat loss during the operations and maintenance phase. Potential indirect impacts may arise from disturbance to prey (fish) species from important bird feeding areas or changes to prey availability due to changes to physical processes and habitat as a result of the presence of operational infrastructure.
- 1.6.1.16 Potential transboundary impacts related to offshore ornithology and their nature conservation interests are screened into the EIA process. A transboundary assessment has been completed and is included in Volume 2, Chapter 5: Offshore ornithology of the Environmental Statement. Potential impacts upon European Sites with birds as a qualifying feature are assessed within the ISAA (Document Reference E1).

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**Table 1.3: Transboundary screening matrix for the Morgan Generation Assets – physical and biological environment.**

Screening criteria	Physical processes	Benthic subtidal ecology	Fish and shellfish ecology	Marine mammals	Offshore ornithology
Characteristics of the development	For a detailed description, see Volume 1, Chapter 3: Project description of the Environmental Statement. Key components of the Morgan Generation Assets include: wind turbines, foundations, scour protection, inter-array cables, interconnector cables and offshore substation platforms (OSPs). The Morgan Generation Assets will include all associated offshore infrastructure (including up to 96 wind turbines and four OSPs).				
Location of development (including existing use) and geographical area	The Morgan Array Area is approximately 280 km <sup>2</sup> in area and is located approximately 22.3 km (12 nm) from the Isle of Man coastline, 37.2 km (20.1 nm) from the northwest coast of England and 77.3 km from the Irish EEZ (i.e. the median line between UK and Irish waters).				
Environmental importance	No significant transboundary impacts are predicted (see Volume 2, Chapter 1: Physical processes of the Environmental Statement). Screened out.	No significant transboundary impacts are predicted (see Volume 2, Chapter 2: Benthic subtidal ecology of the Environmental Statement). Screened out.	Potential transboundary impact – potential impacts and cumulative impacts (see Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement).	Potential transboundary impact – potential impacts and cumulative impacts (see Volume 2, Chapter 4: Marine mammals of the Environmental Statement).	Potential transboundary impact – potential impacts and cumulative impacts (see Volume 2, Chapter 5: Offshore ornithology of the Environmental Statement).
Potential impacts and carrier					
Extent					
Magnitude					
Probability					
Duration					
Frequency					
Reversibility					
Cumulative impacts					

**1.6.2 Human environment**

1.6.2.1 A transboundary screening matrix has been completed for potential transboundary impacts for the human environment and is presented in Table 1.4. The conclusions of the transboundary screening for each human environment topic are presented in the following sections.

**Commercial fisheries**

1.6.2.2 The commercial fisheries likely to be operating in the Morgan Generation Assets commercial fisheries study area are outlined in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement. The Morgan Generation Assets commercial fisheries study area is located entirely within the UK EEZ and includes fleets from other states, including Ireland and Belgium. Due to the highly mobile nature of both commercial fish species and fishing fleets, there is the potential for transboundary impacts upon commercial fisheries to arise from two sources:

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- Potential impacts on commercial fishing fleets as a result of constraints on commercial fishing activities operating in the vicinity of the Morgan Generation Assets, including loss or restricted access to fishing grounds and potential displacement of fishing activity into other areas
- Potential impacts on commercial fishing fleets as a result of potential impacts from the Morgan Generation Assets on commercially important fish and shellfish resources.

1.6.2.3 An assessment of the potential impacts related to the operations and maintenance phase is presented in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement (including both a Morgan Generation Assets assessment and a cumulative assessment). It is likely that any impacts from the final installed design would be reversible after decommissioning, as it is anticipated that all structures above the seabed will be completely removed, and fishing activity would be able to resume once decommissioning is completed. The construction phase is considered less likely to result in likely significant effects although any impacts associated with the presence of infrastructure will progressively increase as the Morgan Generation Assets is progressed.

1.6.2.4 Transboundary impacts to commercial fisheries are screened into the EIA process.

### Shipping and navigation

1.6.2.5 The Morgan Generation Assets are situated in the east Irish Sea where a number of shipping routes presently operate. The shipping and navigation baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

1.6.2.6 There is potential for transboundary impacts on shipping routes which transit to/from other states, including Ireland. An assessment of the potential impacts occurring during the operations and maintenance phase is presented in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement (including both a Morgan Generation Assets assessment and a cumulative assessment). Although such potential impacts are anticipated to be long term, it is likely that they would be reversible after decommissioning, as it is anticipated that all structures above the seabed will be completely removed. The construction phase is considered less likely to result in likely significant effects although the impacts associated with the interference caused by the presence of infrastructure on shipping and navigation will progressively increase as the Morgan Generation Assets is progressed.

1.6.2.7 Potential transboundary impacts on shipping and navigation are screened into the EIA process. A transboundary assessment has been completed and is included in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

### Marine archaeology

1.6.2.8 The marine archaeology baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 8: Marine archaeology and cultural heritage of the Environmental Statement.

1.6.2.9 The extent of any potential impacts upon marine archaeology receptors is likely to be limited to the Morgan Array Area. It is considered that there would be no pathway for impacts beyond the Morgan Generation Assets marine archaeology study area. As the extent of that study area is entirely within UK waters, it is considered that there would be no transboundary impacts.

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1.6.2.10 No transboundary impacts upon marine archaeology are anticipated. Transboundary impacts upon marine archaeology are screened out of the EIA process.

### Other sea users

1.6.2.11 The baseline for other sea users for the Morgan Generation Assets is outlined in Volume 2, Chapter 9: Other sea users of the Environmental Statement.

1.6.2.12 Potential transboundary impacts associated with the Morgan Generation Assets identified for other sea users receptors include the potential displacement of recreational sailing and motor cruising activities between the UK and Ireland. The extent of any potential impacts on recreational activities is likely to be localised and short term, as individual vessels may be displaced along their routes due to construction, maintenance or decommissioning activities occurring at any one location. Potential impacts on recreational activities are also likely to be infrequent, due to the likely lower levels of offshore cruising and racing between the UK and Ireland.

1.6.2.13 No other potential transboundary impacts upon other sea users are anticipated. Transboundary impacts upon other sea users are screened out of the EIA process.

### **1.6.3 Seascape, landscape and visual resources**

1.6.3.1 The seascape, landscape and visual resources baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 10: Seascape, landscape and visual resources of the Environmental Statement.

1.6.3.2 The extent of potential impacts to seascape, landscape and visual resources receptors arising from the Morgan Generation Assets is considered to be focused on receptors based in the UK and the Isle of Man, with any potential impacts at the UK/Ireland boundary considered to be transient and negligible.

1.6.3.3 Transboundary impacts upon seascape, landscape and visual resources are not anticipated and are screened out of the EIA process.

### **1.6.4 Aviation and Radar**

1.6.4.1 The aviation and radar baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 11: Aviation and radar of the Environmental Statement.

1.6.4.2 Potential impacts on aviation and radar include potential interference with Primary Surveillance Radar (PSR), creation of physical obstacles to low flying aircraft, obstruction and disruption to helicopter access/egress to/from oil and gas platforms, and obstruction to Search and Rescue (SAR) operations. All potential receptors identified are located in the UK and the Isle of Man and therefore no transboundary effects are predicted.

1.6.4.3 Transboundary impacts upon aviation and radar are not anticipated and are screened out of the EIA process.

### **1.6.5 Climate change**

1.6.5.1 The climate change baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 12: Climate change of the Environmental Statement.

1.6.5.2 All development processes which emit Green House Gases (GHGs) have the potential to impact the atmospheric mass of GHGs as a receptor and may have a transboundary impact on climate change. Transboundary effects due to other specific international

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development projects are taken into account when evaluating the impact of the Morgan Generation Assets by defining the atmospheric mass of GHGs as a high sensitivity receptor. Potential transboundary impacts associated with the Morgan Generation Assets have been identified in Volume 2, Chapter 12: Climate change of the Environmental Statement, whilst noting that over the lifetime of the Morgan Generation Assets, potential transboundary impacts are likely to be beneficial.

1.6.5.3 Transboundary impacts on climate change are screened into the EIA process.

### 1.6.6 Socio-economics

1.6.6.1 The socio-economics baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 13: Socio-economics of the Environmental Statement.

1.6.6.2 It is considered that there are unlikely to be potential transboundary impacts upon socio-economic receptors due to the construction, operations and maintenance and decommissioning of the Morgan Generation Assets. The list of ports assessed to support the construction, operations and maintenance and decommissioning of the Morgan Generation Assets (see Volume 2, Chapter 13: Socio-economics of the Environmental Statement) are located within the UK. The development and operation of the Morgan Generation Assets will also promote opportunities for local procurement, skills development and recruitment.

1.6.6.3 Transboundary impacts upon socio-economics are not anticipated and are screened out of the EIA process.

### 1.6.7 Human Health Assessment

1.6.7.1 The human health baseline for the Morgan Generation Assets is outlined in Volume 2, Chapter 14: Human health assessment of the Environmental Statement.

1.6.7.2 It is considered that there are unlikely to be potential transboundary impacts upon human health due to the construction, operations and maintenance and decommissioning of the Morgan Generation Assets. The potential effects on human health from construction, operations and maintenance and decommissioning of the Morgan Generation Assets are likely to only extend within the UK.

1.6.7.3 Transboundary impacts upon human health are not anticipated and they have screened out of the EIA process.

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**Table 1.4: Transboundary screening matrix for the Morgan Generation Assets – offshore human environment.**

Screening criteria	Commercial fisheries	Shipping and navigation	Marine archaeology	Other sea users	Seascape, landscape and visual resources	Aviation and radar	Climate change	Socio-economics	Human Health
Characteristics of the development	<p>For a detailed description, see Volume 1, Chapter 3: Project description of the Environmental Statement.</p> <p>Key components of the Morgan Generation Assets include: wind turbines, foundations, scour protection, inter-array cables, interconnector cables and OSPs.</p> <p>The Morgan Generation Assets will include all associated offshore infrastructure (including up to 96 wind turbines and four OSPs).</p>								
Location of development (including existing use) and geographical area	<p>The Morgan Array Area is approximately 280 km<sup>2</sup> in area and is located approximately 22.3 km (12 nm) from the Isle of Man coastline, 37.2 km (20.1 nm) from the northwest coast of England (when measured from Mean High Water Springs (MHWS)), 77.3 km from the Irish EEZ (i.e. the median line between UK and Irish waters) and 491.3 km from the Belgian EEZ.</p>								
Environmental importance	<p>Potential transboundary impact – potential impacts and cumulative impacts (see Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement).</p>	<p>Potential transboundary impact – potential impacts and cumulative impacts (see Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement).</p>	<p>No significant transboundary impacts are predicted (see Volume 2, Chapter 8: Marine archaeology and cultural heritage of the Environmental Statement). Screened out.</p>	<p>No significant transboundary impacts are predicted (see Volume 2, Chapter 9: Other sea users of the Environmental Statement). Screened out.</p>	<p>No significant transboundary impacts are predicted (see Volume 2, Chapter 10: Seascape, landscape and visual resources of the Environmental Statement). Screened out.</p>	<p>No significant transboundary impacts are predicted (see Volume 2, Chapter 11: Aviation and radar of the Environmental Statement). Screened out.</p>	<p>Potential transboundary impact (see Volume 2, Chapter 12: Climate change of the Environmental Statement).</p>	<p>No significant transboundary impacts are predicted (see Volume 2, Chapter 13: Socio-economics of the Environmental Statement). Screened out.</p>	<p>No significant transboundary impacts are predicted (see Volume 2, Chapter 14: Human health assessment of the Environmental Statement). Screened out.</p>
Potential impacts and carrier									
Extent									
Magnitude									
Probability									
Duration									
Frequency									
Reversibility									
Cumulative impacts									

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### 1.7 Conclusions

1.7.1.1 This transboundary screening annex has been prepared in line with The Planning Inspectorate's Advice Note Twelve and provides a screening assessment of the potential transboundary impacts of the Morgan Generation Assets on EEA states.

1.7.1.2 On the basis of the current information available and presented within the Environmental Statement, it is not possible to conclude there will be no likely significant transboundary effects on the following topics, and they have therefore been screened into the EIA process:

- Fish and shellfish ecology
- Marine mammals
- Offshore ornithology
- Commercial fisheries
- Shipping and navigation
- Climate change.

### 1.8 References

Morgan Offshore Wind Ltd (2022) Morgan Offshore Wind Project EIA Scoping Report. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010136/EN010136-000039-Morgan%20Offshore%20Wind%20Farm%20-%20EIA%20Scoping%20Report.pdf>. Accessed October 2023.

Morgan Offshore Wind Ltd (2023) Morgan Offshore Wind Project PEIR. Available at <https://morecambeandmorgan.com/morgan/consultationhub/> Accessed October 2023.

The Planning Inspectorate (2020) Advice Note Twelve: Transboundary Impacts. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-twelve-transboundary-impacts-and-process/> Accessed February 2023.