

MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Environmental Statement

Volume 2, Chapter 6: Commercial fisheries

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Image of an offshore wind farm

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

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Annexes

Annex number	Annex title
6.1	Commercial fisheries technical report

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Glossary

Term	Meaning
Beam trawler	A vessel undertaking beam trawling, which is a fishing method of bottom trawling with a net that is held open by a solid metal beam, attached to two 'shoes', consisting of solid metal plates, fixed to the ends of the beam.
Company Fisheries Liaison Officer	Primary contact for the Fishing Industry Representative and Offshore Fisheries Liaison Officer. Main point of contact for bp/EnBW for any commercial fisheries related queries.
Demersal fish	Demersal fish are species that live and feed on or near the seabed.
Demersal trawl	Demersal trawls consist of cone-shaped nets that are towed along the seabed to target demersal fish species. The mouth of the trawl is spread and held open by a pair of adjacent trawl doors.
Dredge	Dredges consist of rigid structures that target numerous species of shellfish through towing along the seabed. Dredges typically have an open-frame mouth with a collection bag.
Fisheries Industry Representative	Primary contact point within the fishing community, provider of feedback to the Company Fisheries Liaison Officer and Offshore Fisheries Liaison Officer and disseminator of Project information.
Fishing ground	An area of water or seabed targeted by fishing activity.
Fleet	A physical group of vessels sharing similar characteristics (e.g. nationality).
Gear type	The method/equipment used for fishing.
ICES statistical rectangles	Defined areas of sea used for fisheries statistics (1 degree longitude by 0.5 degree latitude, equalling approximately 30 by 30 nautical miles).
Inshore waters (England and Wales)	Mean High Water Springs to 12 nautical miles (nm) offshore.
Kilowatt	Engine power of a fishing vessel. This is used in the calculation of fishing effort for Vessel Monitoring Systems data, whereby the time associated with the Vessel Monitoring Systems report is multiplied by the engine power of the fishing vessel. Engine power with gross tonnage determines the size of fishing licence required and, therefore, allowable catch, discards and quotas.
Landings	Quantitative description of amount of fish returned to port for sale, in terms of value or weight.
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 Offshore Substation Platforms (OSPs), interconnector cables, Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV grid connection cables and associated grid connection infrastructure such as circuit breaker infrastructure (as defined in the Morgan and Morecambe Offshore Wind Farms: Transmission Assets PEIR).
Notice to Mariners	The United Kingdom Hydrographic Office (UKHO) service of publications that contain all of the corrections, alterations and amendments to the UKHO worldwide charts and publications. These are published weekly and are available directly from the UKHO.
Offshore Fisheries Liaison Officer	Liaison between fishing vessels and clients, using local knowledge and fisheries experience to ensure offshore operations run smoothly and encourage co-operation. Provider of feedback to the Company Fisheries Liaison Officer and Fishing Industry Representative.
Otter trawl	Otter trawls consist of a pair of otter boards (large rectangular boards) which holds open the mouth of a net.
Pelagic fish	Pelagic fish are species which live and feed within the water column.

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Term	Meaning
Pelagic trawl	Pelagic trawls consist of nets which are used to catch fish in the water column, rather than on the seafloor.
Potter	A vessel undertaking potting, which is a method of fishing that uses pots (or creels) which are baited traps set down on the seabed to catch crabs and lobsters.
Safety zone	This includes defined safety zones (in accordance with the Maritime and Coastguard Agency) and advisory safety zones (recommended during construction and/or maintenance works).
Scallop dredger	A vessel undertaking scallop dredging, which is a fishing method to catch scallop using steel dredges with a leading bar fitted with a set of spring loaded, downward pointing teeth. Behind this toothed bar (sword), a mat of steel rings is fitted. A heavy net cover (back) is laced to the frame, sides and after end of the mat to form a bag.
Scallop Mitigation Zone	In order to ensure co-existence of the operational Morgan Generation Assets and fishing activities, the Morgan array layout will include an area free of surface infrastructure. Further details are provided in the Outline Fisheries Liaison and Co-Existence Plan (Document Reference: J10).
Shellfish	For the purposes of this assessment, shellfish is considered a generic term to define molluscs and crustaceans.
Static gear	Gear that is set to catch fish or shellfish. This is a collective term and includes gear that remains static and is not towed, such as pots, traps and set nets.
Vessel Monitoring System	Satellite tracking system using a device on vessel which transmits the location, speed and course of the vessel.

Acronyms

Acronym	Description
AIS	Automatic Identification System
ANIFPO	Anglo North Irish Fish Producers Organisation
BEIS	Department of Business Energy and Industrial Strategy
CFLO	Company Fisheries Liaison Officer
COLREGS	The Convention on the International Regulations for Preventing Collisions at Sea 1972
DCO	Development Consent Order
DECC	Department of Energy and Climate Change (formerly BEIS, now DESNZ)
DESNZ	Department of Energy Security and Net Zero
EIA	Environmental Impact Assessment
EU	European Union
EU STECF	European Union Scientific, Technical and Economic Committee for Fisheries
FIR	Fishing Industry Representative
FLCP	Fisheries Liaison and Co-existence Plan
ICES	International Council for the Exploration of the Sea
ISEFPO	Irish South and East Fish Producers Organisation
LTMP	Long Term Management Plan

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Acronym	Description
MCA	Maritime and Coastguard Agency
MCZ	Marine Conservation Zone
MDS	Maximum Design Scenario
MFPO	Manx Fish Producers Organisation
MHWS	Mean High Water Spring
MMO	Marine Management Organisation
MPA	Marine Protected Area
NFFO	National Federation of Fishermen's Organisations
NIFPO	Northern Ireland Fish Producers Organisation
OFLO	Offshore Fisheries Liaison Officer
PEIR	Preliminary Environmental Information Report
SAC	Special Area of Conservation
SFF	Scottish Fishermen's Federation
SMZ	Scallop Mitigation Zone
SSC	Suspended Sediment Concentration
SWFPA	The Scottish White Fish Producers Association Ltd
UK	United Kingdom
VMS	Vessel Monitoring System
WCSP	West Coast Sea Products Ltd
WFA	Welsh Fishermen's Association
WFC	Whitehaven Fishermen's Cooperative
WFPO	Western Fish Producers Organisation

Units

Unit	Description
£	Pound sterling
GWh	Gigawatt hour
kW	Kilowatt (power)
kWh	Kilowatt hours
m	Metres
m ²	Metre squared
km ²	Kilometre squared
MW	Megawatt
nm	Nautical mile (distance; 1 nm = 1.852 km)
t	Tonnes
%	Percentage

6 COMMERCIAL FISHERIES

6.1 Introduction

6.1.1 Overview

6.1.1.1 This chapter of the Environmental Statement presents the assessment of potential impacts of the Morgan Offshore Wind Project Generation Assets, hereafter referred to as the Morgan Generation Assets, on commercial fisheries. Specifically, this chapter considers the potential impact of the Morgan Generation Assets seaward of Mean High Water Springs (MHWS) during the construction, operations and maintenance, and decommissioning phases.

6.1.1.2 The assessment presented is informed by the following technical chapters:

- Volume 2, Chapter 2: Benthic subtidal ecology of the Environmental Statement
- Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement
- Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement
- Volume 2, Chapter 9: Other sea users of the Environmental Statement.

6.1.1.3 This chapter also draws upon information contained within Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.

6.1.1.4 For the purposes of this chapter, commercial fishing is defined as any form of fishing activity where the catch is sold for taxable profit. Recreational rod and line fishers, as well as charter-angling operators, are also active in the region. Potential impacts on these receptors are assessed in Volume 2, Chapter 13: Socio-economics of the Environmental Statement.

6.1.2 Purpose of chapter

6.1.2.1 The primary purpose of the Environmental Statement is outlined in Volume 1, Chapter 1: Introduction of the Environmental Statement. In summary, the primary purpose of a final Environmental Statement is to support the Development Consent Order (DCO) application for the Morgan Generation Assets under the Planning Act 2008 (the 2008 Act). This Environmental Statement constitutes the environmental information for the Morgan Generation Assets and sets out the findings of the Environmental Impact Assessment (EIA), which will accompany the application to the Secretary of State for Development Consent.

6.1.2.2 In April 2023, the Preliminary Environmental Information Report (PEIR) for the Morgan Generation Assets was published to support the pre-application consultation activities required under the 2008 Act, which lasted for 47 days and concluded on 4 June 2023. Comments received on the PEIR have been reviewed and incorporated (where appropriate) into this Environmental Statement.

6.1.2.3 Specifically, this Environmental Statement chapter:

- Presents the existing environmental baseline established from desk studies, site-specific surveys and consultation with key commercial fisheries stakeholders
- Identifies any assumptions and limitations encountered in compiling the environmental baseline information

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- Presents the potential environmental effects of the Morgan Generation Assets on commercial fisheries, based on the information gathered and the analysis and assessments undertaken as part of the EIA process
- Highlights any necessary monitoring and/or mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects of the Morgan Generation Assets on commercial fisheries.

6.1.3 Study area

- 6.1.3.1 The Morgan Generation Assets is located within the International Council for the Exploration of the Sea (ICES) Division VIIa (Irish Sea) statistical area, which is divided into statistical rectangles for the purpose of recording fisheries landings. The Morgan Array Area (illustrated in Figure 6.1) is located where ICES Rectangles 36E5, 36E6, 37E5 and 37E6 intersect each other; and is wholly within English waters.
- 6.1.3.2 A broad commercial fisheries study area has been defined for the purposes of this Environmental Statement chapter, to provide a wider regional context to the current fisheries activity, and to ensure that potential impacts (e.g. displacement of fishing vessels) from the Morgan Generation Assets on commercial fisheries are fully assessed. Therefore, for the purposes of this Environmental Statement chapter, the commercial fisheries study area is defined as ICES Rectangles 36E5, 36E6, 37E5 and 37E6.
- 6.1.3.3 Given the operational ranges of the fishing fleets active in the region, and considering feedback from consultation, the study area for the Cumulative Effects Assessment (CEA) for commercial fisheries remains the same as for the main assessment (ICES Rectangles 36E5, 36E6, 37E5 and 37E6). The study area will ensure that relevant regional fishing grounds, for a range of different fishing fleets, are fully assessed as part of the CEA.

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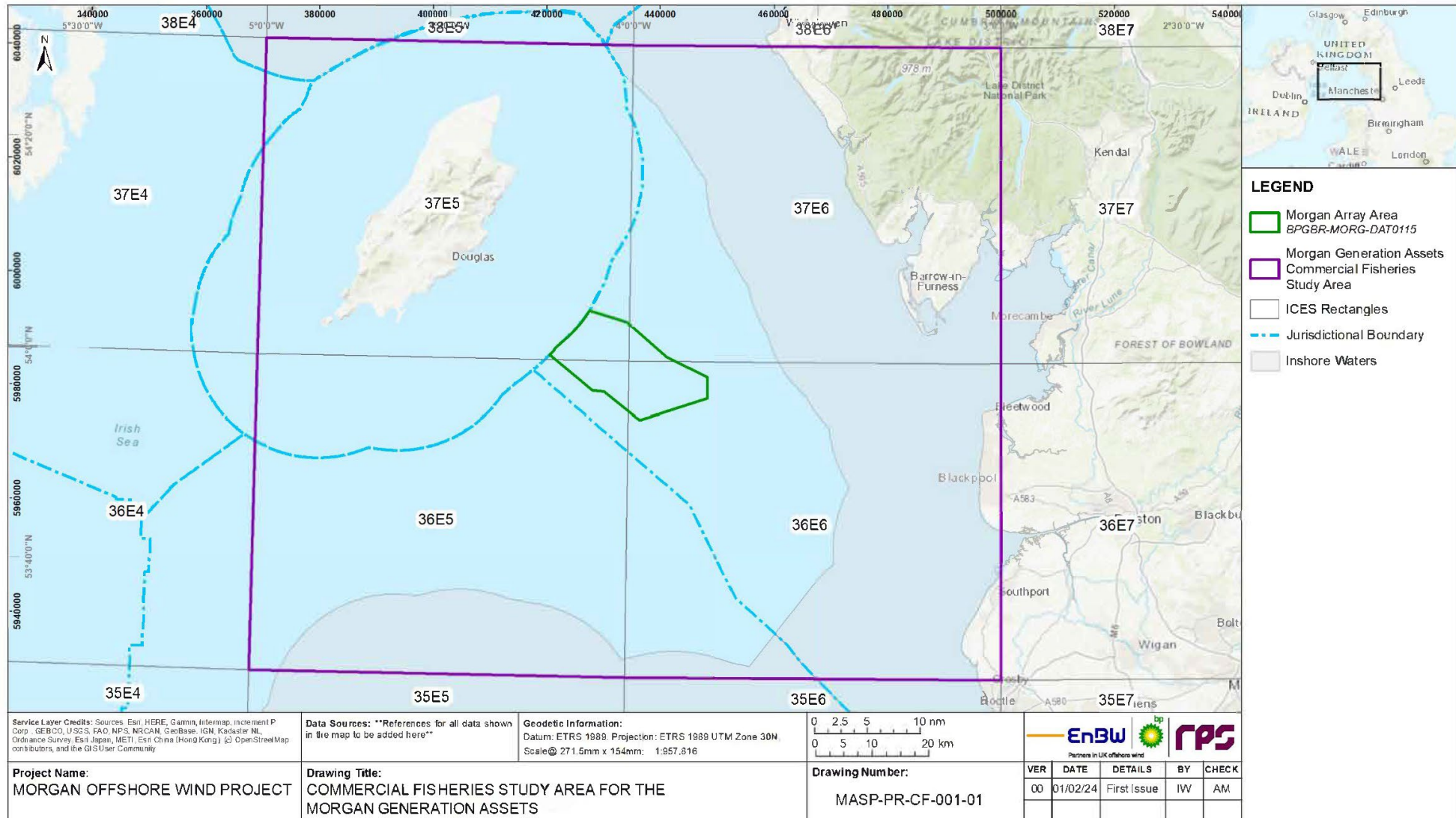


Figure 6.1: Commercial fisheries study area for Morgan Generation Assets.

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6.2 Policy context

6.2.1 National Policy Statements

6.2.1.1 Planning policy on renewable energy infrastructure is presented in Volume 1, Chapter 2: Policy and legislative context of the Environmental Statement. There are currently six energy National Policy Statements (NPSs), two of which contain policy relevant to offshore wind development and the Morgan Generation Assets, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the United Kingdom (UK) Government’s policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero, 2023a)
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero, 2023b).

6.2.1.2 Planning policy relevant to offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), is contained in the Overarching NPS for Renewable Energy Infrastructure (NPS EN-3, Department for Energy Security & Net Zero, 2023b). NPS EN-3 includes specific policy statements for commercial fisheries. A review of the Overarching NPSs for Energy (NPS EN-1; Department for Energy Security & Net Zero, 2023a) has been undertaken and there are no specific references to commercial fisheries within this document.

6.2.1.3 NPS EN-3 includes guidance on those matters that are to be considered in any assessment of an offshore renewable energy project. These are summarised in Table 6.1 below. NPS EN-3 also highlights a number of factors relating to the determination of an application and in relation to mitigation. These are summarised in Table 6.2 below.

Table 6.1 Summary of the NPS EN-3 provisions relevant to commercial fisheries.

NPS EN-3 provision	How and where considered in the Environmental Statement
<p>The UK fishing industry is diverse. The type and significance of impacts will therefore vary depending on the section of the fleet affected. Applicants should consider both direct impacts on fishing activity and indirect impacts such as displacement (on both the industry and Marine Protected Sites) and the ability of fishers to relocate (paragraph 2.8.153 of NPS EN-3)</p>	<p>To ensure that potential impacts which may affect certain fleets/fisheries in different ways are fully assessed, a number of commercial fisheries receptor groups have been identified through review of data and feedback from stakeholder consultation. A total of seven main receptor groups have been defined. These have been categorised based on gear type, nature of fishing activity and nationality and are summarised in Table 6.7. Displacement of commercial fisheries into other areas have been assessed for all phases of the Morgan Generation Assets (section 6.8.2).</p>
<p>Applicants should undertake early consultation with a cross-section of the fishing industry, as well as MMO, SNCBs, relevant Inshore Fisheries and Conservation Authorities (IFCAs), Defra and Welsh Government, to identify impacts, and actively encourage input from active fishers to provide evidence of their use of the area to support the impact assessments (paragraph 2.8.154 of NPS EN-3).</p>	<p>Liaison with the fishing industry, via the Company Fisheries Liaison Officer (CFLO) and Fishing Industry Representative (FIR), is being adhered to in line with the good practice guidance outlined in section 6.5.1. Early engagement was established with fisheries stakeholders in June 2021 and will continue throughout the lifetime of the project (see section 6.3). To communicate the commitments and measures by the Morgan Generation Assets to co-exist with the fishing industry and reduce impacts on commercial fisheries as far as practicably possible, the Applicant has committed to the development of a Fisheries Liaison and Co-existence Plan, which is secured within the deemed marine</p>

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NPS EN-3 provision	How and where considered in the Environmental Statement
	<p>licence(s) within the draft DCO. An outline of this plan has been included with the Application (Document Reference: J10).</p>
<p>Where any part of a proposal involves a grid connection, or transmission to shore or in the inshore area, appropriate inshore fisheries groups should also be consulted (paragraph 2.8.155 of NPS EN-3).</p>	<p>Consultation with relevant stakeholders (local, regional, national and international) has been undertaken for the Morgan Generation Assets and is summarised in section 6.3, with further information in Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement and the Consultation Report, which has been submitted as part of the DCO application.</p>
<p>Applicants will be expected to undertake dialogue with the fishing industry during the planning and design of individual offshore wind farm and transmission proposals to maximise the potential for co-existence/co-location and reduce potential displacement (paragraph 2.8.158 of NPS EN-3).</p>	<p>The transmission assets are being taken forward as a separate DCO application and have not been assessed within this chapter (see Volume 1, Chapter 1: Introduction of the Environmental Statement).</p>
<p>Offshore wind farms can have a negative impact on some fish stocks and fishing activity, and/or a positive impact on other fish stocks and/or other types of commercial fishing. Whilst the footprint of an offshore wind farm and any associated infrastructure may be a hindrance to certain types of commercial fishing activity such as trawling, other fishing activities, such as potting, may be able to take place within operational wind farms without unduly disrupting or compromising navigational safety (paragraph 2.8.156 of NPS EN-3).</p>	<p>Potential impacts to fish stocks arising from the Morgan Generation Assets have been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement. Potential impacts on the commercial fisheries that target the fish stocks are assessed in section 6.8.5.4 of this chapter.</p> <p>Potential impacts to commercial fisheries have been described in section 6.8, and cumulative effects are described in section 6.9.</p>
<p>Applicant assessments should include robust baseline data and detailed surveys of the effects on fish stocks of commercial interest, and any potential reduction or increase in such stocks that will result from the presence of the wind farm development and of any safety zones (see paragraph 2.8.152 – 2.8.164 of NPS EN-3). The assessments should also provide evidence regarding any likely benefits or constraints on fishing activity within the project's boundaries (paragraph 2.8.157 of NPS EN-3).</p>	<p>Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement outlines the potential impacts on fish stocks, including those of commercial interest. Baseline fisheries activity data has been collated from official sources and through consultation, as described in section 6.4.1 and Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement. Likely constraints and safety zones associated with the Morgan Generation Assets are assessed in section 6.6. Paragraph 6.8.1.40 discusses potential benefits on fishing activity within offshore wind farm project boundaries, which has been taken forward into the impact assessment (section 6.8) for the relevant receptor group.</p>
<p>Applicants should consider guidance on best practice for fisheries liaison, which has been jointly agreed by the renewables industry and fishing community (paragraph 2.8.159 of NPS EN-3).</p>	<p>Liaison with the fishing industry, via the CFLO and FIR, is being adhered to in line with the good practice guidance outlined in section 6.5.1. To communicate the commitments and measures by the Morgan Generation Assets to co-exist with the fishing industry and reduce impacts on commercial fisheries as far as practicably possible, the Applicant has committed to the development of a Fisheries Liaison and Co-existence Plan. An outline of this plan has been included with the Application (Document Reference: J10).</p>
<p>In some circumstances, transboundary issues may be a consideration as fishing vessels from other coastal States may fish in waters within which offshore wind farms are sited. Applicants should seek advice from Defra in such circumstances (paragraph 2.8.160 of NPS EN-3).</p>	<p>Transboundary issues have been described in section 6.11, where consideration has been given to both UK and non-UK fishing fleets.</p>

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NPS EN-3 provision	How and where considered in the Environmental Statement
In some circumstances, applicants may seek declaration of safety zones around wind turbines and other infrastructure. Although these might not be applied until after consent to the wind farm has been granted (paragraph 2.8.161 of NPS EN-3).	Implications from the implementation of safety zones on commercial fishing have been presented in section 6.8. Safety zones are included within the Rochdale Design Envelope and have been considered within Volume 2, Chapter 7: Shipping and navigation and Volume 2, Annex 7.1: Navigational Risk Assessment of the Environmental Statement. Advisory clearance distances will be committed to within the Fisheries Co-existence and Liaison Plan which is secured within the deemed marine licence(s) in the draft Development Consent Order (DCO). Formal safety zones will be applied for via a formal safety zone application. More information on the implemented safety zones is provided in Table 6.12.
The declaration of a safety zone excludes or restricts activities within the defined sea areas including commercial fishing (paragraph 2.8.162 of NPS EN-3).	
Where there is a possibility that safety zones will be sought, applicant assessments should include potential effects on commercial fishing (paragraph 2.8.163 of NPS EN-3).	
Where the precise extents of potential safety zones are unknown, a realistic worst-case scenario should be assessed. Applicants should consult the Maritime and Coastguard Agency (MCA) as part of this process (paragraph 2.8.164 of NPS EN-3).	

Table 6.2: Summary of NPS EN-3 policy on decision making relevant to commercial fisheries.

NPS EN-3 provision	How and where considered in the Environmental Statement
The Secretary of State should be satisfied that the site selection process has been undertaken in a way that reasonably minimises adverse effects on fish stocks, including during peak spawning periods and the activity of fishing itself (paragraph 2.8.318 of NPS EN-3).	<p>The potential impacts arising from the Morgan Generation Assets have been discussed with statutory bodies during consultation. The Applicant is taking, and will continue to take steps to minimise the effects upon the industry in the area through appropriate mitigation, where required (see section 6.7). To communicate the commitments and measures by the Morgan Generation Assets to co-exist with the fishing industry and reduce impacts on commercial fisheries as far as practicably possible, the Applicant has committed to the development of a Fisheries Liaison and Co-existence Plan, which is secured within the deemed marine licence(s) in the draft DCO. An outline of this plan has been included with the Application (Document Reference: J10).</p> <p>Potential impacts to fish stocks arising from the Morgan Generation Assets have been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement. Potential impacts on the commercial fisheries that target the fish stocks are assessed in section 6.8.5.4 of this Chapter</p> <p>Potential impacts to commercial fisheries have been described in section 6.8, and cumulative effects are described in section 6.9.</p>
The Secretary of State should consider the extent to which the proposed development occupies any recognised important fishing grounds and whether the project would prevent or significantly impede protection of sustainable commercial fisheries or fishing activities (paragraph 2.8.319 of NPS EN-3).	The Applicant has considered the extent to which the Morgan Generation Assets will overlap with recognised fishing grounds and has carried out consultation with fishing stakeholders, in order to fully understand any potential impacts (see section 6.3). The results of this assessment are presented in this chapter (see section 6.8).

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NPS EN-3 provision How and where considered in the Environmental Statement

<p>Where the Secretary of State considers the wind farm or offshore transmission would significantly impede protection of sustainable fisheries or fishing activity at recognised important fishing grounds, this should be attributed a correspondingly significant weight (paragraph 2.8.320 of NPS EN-3).</p>	
<p>The Secretary of State should consider adverse or beneficial impacts on different types of commercial fishing on a case-by-case basis (paragraph 2.8.321 of NPS EN-3).</p>	<p>Potential impacts to commercial fisheries have been described in section 6.8, and cumulative effects are described in section 6.9. Each potential impact within these assessments have been assessed separately for each identified receptor group (Table 6.7) and phase of the Morgan Generation Assets.</p>
<p>The Secretary of State should be satisfied that the Applicant has sought to design the proposal having consulted the MMO or NRW in Wales, Defra or Welsh Government in Wales and representatives of the fishing industry with the intention of minimising the loss of fishing opportunity taking into account effects on other marine interests. Guidance has been jointly agreed by the renewables and fishing industries on how they should liaise with the intention of allowing the two industries to successfully co-exist. (paragraph 2.8.322 of NPS EN-3).</p>	<p>The Applicant is taking and will continue to take steps to facilitate co-existence with existing commercial fishing activity and minimise disruption as far as is practicably possible. Early engagement was established with fisheries stakeholders in June 2021 and will continue throughout the lifetime of the project (see section 6.3).</p> <p>Liaison with the fishing industry, via the CFLO and FIR, is being adhered to the good practice guidance outlined in section 6.5.1. To communicate the commitments and measures by the Morgan Generation Assets to co-exist with the fishing industry and reduce impacts on commercial fisheries as far as practicably possible, the Applicant has committed to the development of a Fisheries Liaison and Co-existence Plan, which is secured within the deemed marine licence(s) in the draft DCO. An outline of this plan has been included with the Application (Document Reference: J10).</p>

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NPS EN-3 provision	How and where considered in the Environmental Statement
<p>Any mitigation proposals should result from the Applicant having detailed consultation with relevant representatives of the fishing industry, IFCAs, the MMO and the relevant Defra policy team in England (paragraph 2.8.250 of NPS EN-3).</p>	<p>Consultation is an important aspect of the assessment of potential impacts on commercial fisheries for the Morgan Generation Assets and any related mitigation. Early engagement was established with fisheries stakeholders in June 2021 and will continue throughout the lifetime of the project (see section 6.3). A Fisheries Liaison and Co-existence Plan, which is secured within the deemed marine licence(s) in the draft DCO An outline of this plan is being developed by the Applicant through ongoing consultation with fisheries stakeholders and has been included with the Application (Document Reference: J10).</p>
<p>Mitigation should be designed to enhance, where reasonably possible, any potential medium and long-term positive benefits to the fishing industry and commercial fish stocks and the marine environment (paragraph 2.8.251 of NPS EN-3).</p>	<p>Mitigation measures are presented in section 6.7.</p>
<p>The Secretary of State will need to consider the extent to which disruption to the fishing industry, whether short term during construction or long term over the operational period, including that caused by the future implementation of any safety zones, has been mitigated where reasonably possible (paragraph 2.8.323 of NPS EN-3).</p>	<p>A range of mitigation options have been explored with the fishing industry representatives and stakeholders of the fishing community, where disruption is anticipated (see section 6.7 and 6.8).</p>
<p>Where an offshore wind farm or offshore transmission could affect a species of fish that is of commercial interest, but is also of ecological value, the Secretary of State should refer to paragraph 2.8.147 of NPS EN-3 with regard to the latter (paragraph 2.8.324 of NPS EN-3)</p>	<p>Potential impacts on commercially important fish and shellfish resources via the construction, operations and maintenance, and decommissioning phases of the Morgan Generation Assets have been assessed in section 6.8.6.</p>

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NPS EN-3 provision How and where considered in the Environmental Statement

Fish in the context of this NPS also includes elasmobranchs (sharks and rays) and shellfish (i.e., crabs) (paragraph 2.8.147 of NPS EN-3).

6.2.2 North West Inshore and North West Offshore Coast Marine Plans

6.2.2.1 The assessment of potential impacts to commercial fisheries has also been made with consideration to the specific policies set out in the North West Inshore and North West Offshore Coast Marine Plans (MMO, 2021b). Key provisions contained within these plans are set out in Table 6.3, along with details as to how these have been addressed within this assessment.

Table 6.3: North West Inshore and North West Offshore Marine Plan policies of relevant to commercial fisheries.

Policy	Key provisions	How and where considered in the Environmental Statement
NW-FISH-2: Fisheries	Proposals that may have significant adverse impacts on access for fishing activities must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals should state the case for proceeding.	The Applicant is taking and will continue to take steps to minimise the potential impacts upon the fishing industry in the area through appropriate mitigation where required. Designed-in measures related to commercial fisheries are provided in section 6.7.
NW-FISH-3: Fisheries	Proposals that may have significant adverse impacts on essential fish habitat, including spawning, nursery and feeding grounds, and migratory routes, must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant.	The Morgan Generation Assets assessment has considered the impacts on fish stocks in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement; this chapter includes potential impacts on habitats, spawning, nursery and feeding grounds, and migratory routes.
NW-CE-1: Cumulative effects	Proposals which may have adverse cumulative effects with other existing, authorised, or reasonably foreseeable proposals must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate – adverse cumulative and/or in-combination effects so they are no longer significant.	Cumulative impacts on commercial fisheries are assessed in section 6.10.

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Policy	Key provisions	How and where considered in the Environmental Statement
NW-CO-1: Co-existence	Proposals that may have significant adverse impacts on, or displace, existing activities must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate – adverse impacts so they are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals must state the case for proceeding.	The Applicant is taking and will continue to take steps to minimise the impacts upon the fishing industry in the area through appropriate mitigation where required. Designed-in measures related to commercial fisheries are provided in section 6.7, and include a commitment to develop a Fisheries Liaison and Co-existence Plan. An outline of this plan has been included with the Application (Document Reference: J10).

6.3 Consultation

- 6.3.1.1 The Applicant is committed to open, constructive, collaborative and solutions-focused consultation with commercial fisheries stakeholders. MarineSpace provides the role of CFLO on behalf of the Applicant.
- 6.3.1.2 Informal consultation has been undertaken with key local and regional fisheries stakeholders since June 2021, to date. Consultations have continued over the pre-application phase of the Morgan Generation Assets, ensuring that relevant information from fisheries stakeholders is presented within this Environmental Statement. It is also intended to ensure engagement continues past the submission of the application for development consent through to the construction and operations and maintenance phases of the Morgan Generation Assets.
- 6.3.1.3 In addition to stakeholder meetings focussed on the EIA process, fisheries stakeholders have also been engaged at a detailed level during offshore surveys associated with the Morgan Generation Assets, which have been undertaken in 2021, 2022 and 2023.
- 6.3.1.4 The Scoping Report for the Morgan Generation Assets was submitted to The Planning Inspectorate in June 2022. Following consultation, the Scoping Opinion was received in July 2022, and responses relevant to commercial fisheries are outlined in Table 6.4.
- 6.3.1.5 The Applicant published a PEIR and commenced formal statutory consultation under Section 42 of the Planning Act 2008, which commenced in April and concluded in June 2023. The PEIR was published to support statutory consultation. Table 6.4 provides a summary of the comments received that are of relevance to commercial fisheries during Section 42 consultation and how these have been addressed in the Environmental Statement.
- 6.3.1.6 A summary of the key issues specific to commercial fisheries raised during consultation activities undertaken to date is presented in Table 6.4. Table 6.4 also lists how these issues have been considered in the production of this Environmental Statement chapter. Further detail is presented within Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement. Information from consultees has been used to inform the baseline in section Table 6.4 and Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.

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Table 6.4: Summary of key consultation topics relevant to commercial fisheries raised during consultation activities undertaken for the Morgan Generation Assets.

Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
June 2021	<p>Individual fishers from Fleetwood and Maryport; Irish South and East Fish Producers Organisation (ISEFPO); Manx Fish Producers Organisation (MFPO); National Federation of Fishermen's Organisations (NFFO); Welsh Fishermen's Association (WFA); Western Fish Producers Organisation (WFPO); and Whitehaven Fishermen's Cooperative (WFC).</p> <p>Consultation meeting.</p>	<ul style="list-style-type: none"> • 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 • There are seven Irish scallop vessels that are normally active in the area from December to April. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and has fed into the design process where possible. Feedback from ongoing consultation on fishing activity will be detailed throughout Table 6.4, which will be submitted at Application • Cumulative effects have been assessed in section 6.10 • Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement • Ten year datasets have been obtained for landings statistics and Vessel Monitoring System (VMS) data, as outlined in section 6.4.
June 2021	<p>Scottish Fishermen's Federation (SFF); Scottish White Fish Producers Association (SWFPA); and West Coast Sea Products Ltd (WCSP).</p> <p>Consultation meeting.</p>	<ul style="list-style-type: none"> • Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase. Scallop vessels would require greater spacing of wind turbines • Morgan Generation Assets (particularly the west) overlap with key queen scallop grounds. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. This is presented within Table 6.14.
July 2021	<p>Anglo North Irish Fish Producers Organisation (ANIFPO); Northern Ireland Fish Producers Organisation (NIFPO); and Rederscentrale.</p> <p>Consultation meeting.</p>	<ul style="list-style-type: none"> • Queries regarding array layout and co-existence during the operations and maintenance phase. Belgian vessel representatives stated that they would not fish between wind turbines, so preference for closer spacing to minimise overall area of sea affected by the Morgan Array Area • Queries regarding cumulative and in-combination impacts with other activities and developments in the region 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. This is presented in Table 6.4. • Cumulative effects have been assessed in section 6.10 • Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
		<ul style="list-style-type: none"> • Queries regarding timing of surveys due to herring spawning – request to avoid seismic activity and grab sampling during spawning period • Belgian vessels active in the east part of the Irish Sea during winter months • Queries regarding impacts on fish stocks. 	
July 2021	NFFO Consultation meeting.	<ul style="list-style-type: none"> • Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phases • Queries regarding cumulative and in-combination impacts with other activities and developments. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. This is presented in Table 6.4. • Cumulative effects have been assessed in section 6.10.
February 2022	MFPO, NFFO and WFC Consultation meeting.	<ul style="list-style-type: none"> • Queries regarding the interconnectivity of scallop stocks in the region and potential impacts • Discussion regarding inter-array cable layout (and burial depth) to allow scallop fishing during operations and maintenance phase. 	<ul style="list-style-type: none"> • The impact on scallop stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement • Information was collated from stakeholders on gear penetration depth. Cables will be buried where possible (target depth of 1 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8.
February 2022	ANIFPO, Rederscentrale and WFPO Consultation meeting.	<ul style="list-style-type: none"> • Queries regarding cumulative and in-combination impacts with other activities and developments • Queries regarding impacts on fish stocks • Queries that VMS data does not capture smaller vessels. 	<ul style="list-style-type: none"> • Cumulative effects have been assessed in section 6.10 • Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement • It is acknowledged that there is a lack of data for vessels <15 m in length. To ensure that smaller vessels are represented in the baseline (section 6.4 and Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement), multiple datasets have been collated which capture vessels <15 m in length. For example: consultation is being undertaken to better understand activity of vessels <15 m in the region; site specific surveys are also collating information on all fishing vessels, such as the scouting potting surveys and marine traffic surveys, which include vessels <15 m.

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
February 2022	SFF, SWFPA and WCSP Consultation meeting.	<ul style="list-style-type: none"> • Discussion regarding location of offshore substation to cause least disruption to fisheries. • Queries regarding VMS and Automatic Identification System (AIS) data does not capture smaller vessels • Queries regarding impact to scallop grounds due to the array layout • Importance of the queen scallop grounds, particularly in the northwest of the Morgan Generation Assets. 	<ul style="list-style-type: none"> • The offshore booster substation was removed from the Rochdale Design Envelope • It is acknowledged that there is a lack of data for vessels <15 m in length. See comment above regarding the same concern • A fisheries questionnaire was issued to collate information from consultees regarding design principles and co-existence. Further meetings were also held in November and December 2022 to discuss. Feedback from consultees has been collated and fed into the design process where possible (Table 6.12).
June 2022	The Planning Inspectorate Scoping Opinion.	<ul style="list-style-type: none"> • The influence of noise impacts on commercial fisheries (i.e. as a result of impacts to targeted species) should be clearly explained and assessed within the Environmental Statement. 	<ul style="list-style-type: none"> • This impact has been considered in section 6.8.6.
June 2022	The Planning Inspectorate Scoping Opinion.	<ul style="list-style-type: none"> • The Planning Inspectorate commented that, providing the Environmental Statement sets out the reasoning for excluding 'loss or damage to fishing gear due to snagging during the construction and decommissioning phase', a detailed assessment is not required. 	<ul style="list-style-type: none"> • This impact has been considered in section 6.8.5.
June 2022	The Planning Inspectorate Scoping Opinion response.	<ul style="list-style-type: none"> • The Planning Inspectorate agrees that the following impact can be scoped out: increased steaming distances during the operations and maintenance phase. 	<ul style="list-style-type: none"> • This impact is scoped out of the impact assessment (section 6.8).
June 2022	The Planning Inspectorate Scoping Opinion response.	<ul style="list-style-type: none"> • The Environmental Statement should clearly describe the mitigation measures, with care taken to ensure consistency with cable protection matters considered for other environmental aspects. 	<ul style="list-style-type: none"> • This has been considered and the mitigation measures are outlined in section 6.7.
June 2022	The Planning Inspectorate Scoping Opinion response.	<ul style="list-style-type: none"> • The Environmental Statement should assess the potential for the introduction of hard substrate and vessel movements to facilitate the spread of INNS (e.g. via ballast water and through accidents and spillages) and the potential for impacts upon commercial fisheries, where significant effects are likely to occur. 	<ul style="list-style-type: none"> • This impact is considered in Volume 2, Chapter 2: Benthic subtidal and intertidal ecology of the Environmental Statement and section 6.8.

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
July 2022	Marine Licencing Scoping Opinion response	<ul style="list-style-type: none"> The Marine Management Organisation (MMO) would expect to see MMO landings data for the relevant ICES Rectangles be used to support survey data Advice on matters to be scoped into the EIA. 	<ul style="list-style-type: none"> MMO landings data have been analysed and considered in the baseline (section 6.4) Impacts scoped out of the assessment are discussed in section 6.6.2.
November 2022	Individual static gear operator from Fleetwood Consultation meeting.	<ul style="list-style-type: none"> Queries regarding noise impacts on whelk Queries regarding array layout and co-existence during the operations and maintenance phase. Static gear vessels lay gear in a north – south alignment within the Morgan Array Area. Preference for equally spaced wind turbines in rows and as far apart as possible. 	<ul style="list-style-type: none"> Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. Engagement has continued with Commercial Fisheries stakeholders since 2022 to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline Fisheries Liaison and Co-existence Plan (FLCP) (Document Reference: J10)
November 2022	SFF, SWFPA and WCSP. Consultation meeting.	<ul style="list-style-type: none"> Queries regarding array layout and co-existence during the operations and maintenance phase. Noted higher density queen scallop ground in the south west part of the Morgan Array Area Discussion regarding inter-array cable layout and burial depth to allow scallop fishing during operations and maintenance phase. Gear penetration can vary between 0.05-0.25 m Queries regarding impacts on scallop stocks as a result of changes to tidal flow from the installation of wind turbines including foundations. 	<ul style="list-style-type: none"> Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. Engagement has continued with Commercial Fisheries stakeholders since 2022 to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10)

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			<ul style="list-style-type: none"> • Cables will be buried where possible (target depth of 1 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8 • Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.
November 2022	<p>MFPO, Isle of Man Government, Individual fishers (IoM)</p> <p>Consultation meeting.</p>	<ul style="list-style-type: none"> • Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase. Noted that the Manx fishing vessels only use approximately 100 ft of cable, so are able to fish between wind turbines • Discussion regarding inter-array cable layout and burial depth to allow scallop fishing during operations and maintenance phase • Queries regarding impacts on scallop stocks as a result of construction and changes to tidal flow from the wind turbines including foundations. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. • Engagement has continued with Commercial Fisheries stakeholders since 2022 to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10) • Cables will be buried where possible (target depth of 1 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8 • Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.
November 2022	<p>Individual fishing operators from Conwy</p> <p>Consultation meeting</p>	<ul style="list-style-type: none"> • Queries regarding co-existence during the operations and maintenance phase • Queries regarding spatial squeeze on fishing vessels due to changes in ferry routes as a result of the Morgan Array Area • Queries regarding impacts on fish stocks. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. • Engagement has continued with Commercial Fisheries stakeholders since 2022 to discuss these key issues. discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
			<p>on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10)</p> <ul style="list-style-type: none"> Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.
December 2022	ANIFPO, NIFPO, WFA Consultation meeting.	<ul style="list-style-type: none"> Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase. Orientation of wind turbines in a north – south alignment would be preferable Queries regarding timings of surveys to minimise impacts on fish stocks Queries regarding VMS data does not capture smaller vessels. 	<ul style="list-style-type: none"> Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. Engagement has continued with commercial fisheries stakeholders since 2022 in order to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10) Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement It is acknowledged that there is a lack of data for vessels <15 m in length. To ensure that smaller vessels are represented in the baseline (section 6.4 and Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement), multiple datasets have been collated which capture vessels <15 m in length. For example: consultation is being undertaken to better understand activity of vessels <15 m in the region; site specific surveys are also collating information on all fishing vessels, such as the scouting potting surveys and marine traffic surveys, which include vessels <15 m.

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
December 2022	Rederscentrale Consultation meeting.	<ul style="list-style-type: none"> • 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. • 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. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible. • Engagement has continued with Commercial Fisheries stakeholders since 2022 to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10) • Cables will be buried where possible (target depth of 2 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8.
December 2022	ISEFPO, IFPO Consultation meeting.	<ul style="list-style-type: none"> • Queries regarding spacing arrangements of infrastructure and co-existence during the operations and maintenance phase • Discussion regarding inter-array cable layout and burial depth and concerns regarding snagging. 	<ul style="list-style-type: none"> • Feedback from consultees regarding fishing activity has been presented within the baseline and fed into the design process where possible • Engagement has continued with Commercial Fisheries stakeholders since 2022 to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10) • Cables will be buried where possible (target depth of 1 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8.

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
May 2023	Individual fishing operators from Lytham Public consultation meetings.	<ul style="list-style-type: none"> Group of 5 fishermen in Lytham Fish for mussels and flat fish from the sea wall at Lytham Queries regarding impacts on fish stocks during construction. 	<ul style="list-style-type: none"> Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.
June 2023	MMO S42 Responses (summarised).	<ul style="list-style-type: none"> Due to fishing policies, many fishing vessels will be excluded from fishing within the windfarm site, even if it is deemed acceptable by the operator. The MMO recommends this be taken into account when considerations are made for the Fisheries Liaison and Co-existence Plan and justifiable disturbance payments Commercial fishing activity should be considered in conjunction with the cumulative effects on commercial shipping routes as spatial squeeze will bring higher likelihood of cross industry conflict in terms of access and potential gear conflicts in areas surrounding the windfarm site. Gear conflicts between differing types of fishing vessels may also increase, due to fishing grounds being diminished by windfarm projects and associated diverted commercial traffic. 	<ul style="list-style-type: none"> The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10). Ongoing liaison with commercial fisheries stakeholders will continue and provide warning prior to construction activities taking place. A process for managing and communicating the use of rolling safety zones will be developed post-consent once the construction programme has been finalised and will be set out in the Fisheries Liaison and Co-existence Plan, prepared post-consent The CEA considers any proposed plans or projects. While restrictions within Marine Protected Areas (MPAs) are also considered within the CEA, in the context of loss or restricted access to fishing grounds (section 6.10). The cumulative effects on commercial shipping routes are assessed within Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.
June 2023	SFF, SWFPO, SWFPA and WCSP S42 Responses (summarised).	<ul style="list-style-type: none"> Fishing activity from 2022-2023 is the same as presented Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement (Figure 1.56) Potential co-existence options: position of wind turbines and inter-array cables away from tows; north to south routing of inter-array cables; tightly packed wind turbines around array boundary and fewer larger wind turbines within the array; cable protection material to be similar to the seabed substrate; phased approach to construction and avoiding queen scallop fishing area. 	<ul style="list-style-type: none"> Engagement has since continued with commercial fisheries stakeholders in order to discuss these key issues. Meetings were undertaken in September 2023 to discuss the response to the statutory consultation and to present a number of project changes and commitments being made by the Applicant to reduce potential impacts on commercial fisheries activities and promote co-existence. The project changes and commitments and how they may facilitate co-existence and co-location are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10) This Environmental Statement is based on these project changes and commitments and the eventual ability for

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
June 2023	IoM Government S42 Responses (summarised).	<ul style="list-style-type: none"> Commented that not all datasets include vessels <12 m in length, particularly IoM vessels, and noted importance of capturing fishing activity for this group. All IoM mobile gear vessels have VMS fitted. Data for IoM vessels could be obtained from various sources, including IoM Government, MFPO or Manx fishermen directly. Provided examples of data that could be requested from DEFA While it is not expected to be comprehensive, restricted data presentation should be more thoroughly explained if the reports are to be considered reasonably representative and provide comfort of due consideration Four year baseline is not sufficient to assess fisheries given the disruption between 2019-2022 resulting from Brexit, Covid-19 and the fuel/energy crisis Correction to the number of scallop vessels registered in IoM and the number of vessels licenced to fish for scallops in IoM waters (including UK) Asked for clarification of which datasets include Isle of Man vessels Figure 1.46 of Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement appears overly selective and provides no context for the wider queen scallop fishery areas Noted that an estimated economic loss to businesses of 5-20 % is considered as low magnitude and no mitigation suggested Suggested that downstream economic multipliers (Type I and Type II) are incorporated into the assessment of impacts on fishing activity, using peer-reviewed economic multiplier analysis where possible, 	<p>vessels to fish in the Morgan Array Area during the operational phase has influenced determination of the magnitude of impact and significance of effect (section 6.7).</p> <ul style="list-style-type: none"> The Applicant has obtained relevant VMS data from the Isle of Man Government. This data has now been incorporated into the commercial fisheries technical annex of the Environmental Statement and has been brought into the commercial fisheries assessment. This has been incorporated into Volume 2, Annex 11.1: Commercial fisheries technical report of the Environmental Statement Limitations of the data are discussed in section 6.4.7, and also where appropriate in other sections of this chapter. Text has been updated where appropriate, e.g. the inclusion of cross-references to section 6.4.7 where the datasets are analysed A 10 year data period has been obtained for both MMO and Scientific, Technical and Economic Committee (STECF) landings data and MMO and ICES VMS data, specifically to address the cyclical nature of fisheries Figure 1.56 of Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement displays the indicative queen scallop grounds within the Morgan Array Area, which has now been clarified in the title; this supplementary information has been included to inform the assessment on direct impacts as a result of the Morgan Array Area The low magnitude of impact definition has been updated within Table 6.9 and carried forward within the assessment of significant effects. The definition has been revised to now consider a potential loss of revenue of between 5-10 %, as a low magnitude of impact while the medium magnitude of impact definition now covers a potential loss of revenue of between 11-50 %. Estimated percentage reduction in annual value of landings valuations are informed by expert judgement that is

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		<p>in order to capture to full economic impact. Seafish has done work in this area</p> <ul style="list-style-type: none"> Given the inter-array minimum burial depth of 0.5 m and potential for seabed cable protection, it was queried how likely is it that benthic dredging will practically continue within the Morgan Array Area and if monitoring of fishing patters during and post-constriction will be undertaken Queried what the expected outcome is if monitoring shows a change. 	<p>based on data analysis, stakeholder feedback, the array layouts presented and how these may affect fishing activity.</p> <ul style="list-style-type: none"> The Seafish Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments suggest that downstream economic multipliers can be useful if a policy is expected to have a large economic and/or employment impact. However, the guidance states that multipliers do not take account of displacement of supply chain activity to other parts of the fishing industry or other industries, and therefore are likely to overstate the medium to longer run impacts. Due to the uncertainty about displacement effects, the guidance states that it is generally not recommend that multipliers are used in headline figures to assess the economic impact of a fishing closed area (Seafish, 2012). There are very few sources of fisheries-specific multipliers; the Fraser of Allander Institute undertook work for Seafish in 2004 and their report is one of the most cited. However, with the consolidation of the industry and other developments seen in the sector, this document/guidance is considered to be outdated The Applicant has committed to an Offshore Construction Method Statement (OCMS) which will include the development of and adherence to a cable specification installation plan (CSIP) This will include a burial plan, to outline cable burial depth, cable protection and monitoring of cables. Minimum target burial depths have been determined to enable fishing activities to continue within the Morgan Array Area, once the wind farm is operational, as far as possible. Fisheries stakeholders have indicated that dredging could co-exist with the Morgan Generation Assets if cables are adequately buried and run in a north to south direction, which the Applicant has considered, as far as possible. The project changes and commitments, plus how co-existence and co-location are facilitated is

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
			<p>outlined within Table 6.14. These are committed to within the outline FLCP (Document Reference: J10)</p> <ul style="list-style-type: none"> As per Table 6.37, annual reviews for the first five years of the operations and maintenance phase will be undertaken. Annual reviews will include the analysis of VMS and landings data, to identify whether there are any notable changes to fishing activity within the Morgan Array Area during this period of operation and maintenance. A commitment to undertake this is to be included within the outline FLCP (Document Reference: J10).
June 2023	Natural England S42 Responses (summarised).	<ul style="list-style-type: none"> Natural England advises that the potential impacts of the Morgan Generation Assets cannot be considered in isolation from its transmission assets 	<ul style="list-style-type: none"> The Morgan and Morecambe Offshore Wind Projects: Transmission Assets have been considered as a Tier 2 project for the purposes of the CEA within section 6.10.
June 2023	NFFO and WFA S42 Responses (summarised).	<ul style="list-style-type: none"> This chapter characterises the commercial fishing industry well and effort has been made to describe the fisheries using a variety of sources. However, there remain issues with how those data have been interpreted and used to assess the impacts to the diverse fishing fleets that are the current users of the area Noted spatial squeeze on fisheries in the east Irish Sea due to other projects and restrictions on mobile gear within Marine Conservation Zones (MCZs). Also noted the factors associated with the re-negotiation of the Trade and Cooperation Agreement which will affect fishing opportunities in the region Noted that an estimated economic loss to businesses of 5-20 % is considered as low magnitude and no mitigation suggested. Whilst there is a commitment to follow FLOWW Guidelines (2014) for liaison and disruption agreements, these are under review, and we would like 	<ul style="list-style-type: none"> Limitations of the data are discussed in section 6.4.7, and also where appropriate in other sections of this chapter. Text has been updated where appropriate, e.g. the inclusion of cross-references to section 6.4.7, where the datasets are analysed The future baseline (section 6.4.6) considers these factors, which is then used to inform the assessment. CEA considers any proposed plans or projects. While restrictions within Marine Protected Areas (MPAs) are also considered within the CEA, in the context of loss or restricted access to fishing grounds (section 6.10) The low magnitude of impact definition has been updated within Table 6.9 and carried forward within the assessment of significant effects. The definition has been revised to now consider a potential loss of revenue of between 5-10 %, as a low magnitude of impact while the medium magnitude of impact definition now covers a potential loss of revenue of between 11-50 %. Estimated percentage reduction in annual value of landings valuations are informed by expert judgement that is based on data analysis, stakeholder feedback, the array

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
		<p>to see this acknowledged and a commitment made to follow the most up to date guidelines</p> <ul style="list-style-type: none"> Queried what are the protocols to be followed are if an effect is observed during monitoring. 	<p>layouts presented and how these may affect fishing activity.</p> <ul style="list-style-type: none"> Updated FLOWW Guidelines for liaison and disruption agreements are under review and have not yet been published, this has been acknowledged within the outline FLCP (Document Reference: J10). Data gathering and reporting are considered within the outline FLCP (Document Reference J10)
June 2023	<p>NIFPO</p> <p>S42 Responses (summarised).</p>	<ul style="list-style-type: none"> Queries regarding underwater noise impacts to spawning herring and crustaceans The NIFPO does not considered that the development of a Fisheries Liaison and Co-existence Plan will provide assurances over negligible or minor adverse impacts to commercial fisheries Queried what additional mitigation is proposed Queried if displacement to commercial fisheries is only assessed during the construction phase. 	<ul style="list-style-type: none"> The assessment of underwater sound on crustacean and fish stocks is presented in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement The Applicant is taking and will continue to take steps to facilitate co-existence and co-location with existing commercial fishing activity to minimise disruption as far as is practicably possible. A Fisheries Liaison and Co-existence Plan is being developed by the Applicant through ongoing consultation with fisheries stakeholders. An outline of this plan has been included with the Application (Document Reference: J10), which displays the various fisheries mitigation and management measures the Applicant has committed to. Potential displacement of commercial fisheries into other areas have been assessed for all phases of the Morgan Generation Assets (section 6.8.2).
June 2023	<p>Moor Vannin Offshore Wind Limited</p> <p>S42 Responses (summarised)</p>	<ul style="list-style-type: none"> The Moor Vannin Offshore Windfarm should be screened in to the CEA 	<ul style="list-style-type: none"> Moor Vannin Offshore Wind Limited has submitted a Scoping report for the proposed Moor Vannin Offshore Windfarm. This project has been included as a Tier 2 project within the CEA (section 6.10).

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
June 2023	Barrow Offshore Windfarm S42 Responses (summarised).	<ul style="list-style-type: none"> Registered their interest in the Morgan Generation Assets and noted any interactions with the Barrow Offshore Windfarm should be noted. 	<ul style="list-style-type: none"> The Barrow Offshore Windfarm has been operational since 2008 and is, therefore, included as part of the baseline within this chapter and Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, and hence not considered within the CEA. The CSFC BYELAW 13 overlaps with the Barrow Offshore Windfarm which prohibits the deployment of a towed trawl net to fish.
June 2023	West of Duddon Sands Windfarm S42 Responses (summarised)	<ul style="list-style-type: none"> Registered their interest in the Morgan Generation Assets and noted any interactions with the West of Duddon Sands Windfarm should be noted. 	<ul style="list-style-type: none"> The West of Duddon Sands Windfarm has been operational since 2014 and is, therefore, included as part of the baseline within this chapter and Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, and hence not considered within the CEA.
June 2023	Individual fishing operator from Lytham S42 Responses (summarised)	<ul style="list-style-type: none"> Group of 5 fishermen in Lytham Fish for mussels and flat fish from the sea wall at Lytham Queries regarding impacts on stocks during construction. 	<ul style="list-style-type: none"> An assessment of underwater sound on crustacean and fish stocks is presented in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.
September 2023	SWFPA and WCSP (SFF invited but did not attend). Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> Queries regarding inter array cable laying and if there will be large areas of closure, due to cables being laid down and being buried later Queries regarding rock protection in areas of cables crossing in the Scallop Mitigation Zone (SMZ) and the impact this would have on the key scallop area within the Morgan Array Area Noted preference of no cables within the Morgan Array Area SMZ. 	<ul style="list-style-type: none"> Cables will be buried where possible (target burial depth of 1 m with a maximum burial depth of 3 m and minimum burial depth of 0.5 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8.

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September 2023	TN Trawlers. Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> Regarding inter array cable burial depth and fishing gear penetration depth, noted that scallop fishing gear tooth bars are 9-10 inches long Price of steel has increased costs on gear requirements and maintenance, as well as price of fuel Noted no major concerns with information presented. 	<ul style="list-style-type: none"> Cables will be buried where possible (target burial depth of 1 m with a maximum burial depth of 3 m and minimum burial depth of 0.5 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risks are assessed in section 6.8.
September 2023	MFPO and IoM Government. Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> Raised that the proposed construction approach of rolling construction zones around installation vessels may still have potential impacts due to tow directions, wind conditions, tides, etc Noted that there are seasonal closures within the Isle of Man Territorial Sea for both king and queen scallop to protect spawning periods. King scallop: from 01 June to 31 October; and queen scallop from 01 April to 30 June Noted that Brexit has affected costs rather than markets. Peruvian queen scallop market is a factor in prices Noted that queen scallop vessels fish with nets (not dredgers) and lighter gear, and so are less likely to be impacted than scallop fishers with heavier gear. 	<ul style="list-style-type: none"> The Morgan Generation Assets is aware of the likely complexity on managing construction activities whilst maintaining the area open to fishing activities. However, sufficient time is available to ensure communication processes and plans are discussed and in place prior to commencement of construction. Ongoing liaison will continue and provide warning prior to construction activities taking place. A process for managing and communicating the use of rolling safety zones will be developed post-consent once the construction programme has been finalised and will be set out in the Fisheries Liaison and Co-existence Plan prepared post-consent.
September 2023	Rederscentrale. Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> Concern raised regarding rock protection in areas where the minimum burial depth of cable has not been achieved within the Morgan Array Area Confirmed that 90 % of the Belgian fleet active within the commercial fisheries study area deploy beam trawls using SumWing technology Confirmed that sole is the target species. 	<ul style="list-style-type: none"> Cables will be buried where possible (target burial depth of 2 m with a maximum burial depth of 3 m and minimum burial depth of 0.5 m) and in areas where this is not achievable the cable will be protected (section 6.7). Where cable protection is required on cable crossings, locations will be marked accordingly. Loss of fishing grounds and snagging risk are assessed in section 6.8.

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
September 2023	<p>NFFO, NFFO Services, WFC, P&M Fishing and the MMO.</p> <p>Consultation meeting – S42 response discussion and update on project changes and commitments.</p>	<ul style="list-style-type: none"> Noted that the rolling construction zones around installation vessels is a step in the correct direction. However, raised a concern to the level of liaison needed for this approach to construction, which needs to be reflected in the Fisheries Liaison and Co-existence plan Queries raised regarding displacement through cumulative development within the Irish Sea. 	<ul style="list-style-type: none"> The Morgan Generation Assets is aware of the likely complexity on managing construction activities whilst maintaining the area open to fishing activities. A process for managing and communicating the use of rolling safety zones will be developed post-consent once the construction programme has been finalised and will be set out in the Fisheries Liaison & Co-existence Plan. An outline of this plan has been submitted with the Application (Document reference: J10). The cumulative commercial fisheries study area consists of 36E5, 36E6, 37E5 and 37E6. This is considered an appropriate extent for assessing the potential displacement of commercial fisheries receptors as a result of the Morgan Generation Assets and other projects within the region cumulatively (section 6.10).
September 2023	<p>Seafish and Individual fishing operators from Blackpool.</p> <p>Consultation meeting – S42 response discussion and update on project changes and commitments.</p>	<ul style="list-style-type: none"> Queries raised regarding cable burial and the potential for a snagging risk Queried the type of scour protection being considered and raised that limestone may be incompatible with mussel settlement. 	<ul style="list-style-type: none"> Cables will be buried where possible (target burial depth of 1 m with a maximum burial depth of 3 m and minimum burial depth of 0.5 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8 Limestone is not being considered as a material for scour protection.
September 2023	<p>Individual fishing operators from Conwy</p> <p>Consultation meeting – S42 response discussion and update on project changes and commitments.</p>	<ul style="list-style-type: none"> Queries raised regarding displacement and spatial squeeze as a result of other projects within the Irish Sea Noted that prices of production have increased, with therefore prices also having increased on shellfish Queries raised regarding noise impacts on fish species and stock. 	<ul style="list-style-type: none"> The cumulative commercial fisheries study area consists of 36E5, 36E6, 37E5 and 37E6. This is considered an appropriate extent for assessing the potential displacement of commercial fisheries receptors as a result of the Morgan Generation Assets and other projects within the region cumulatively (section 6.10) <p>Assessment of underwater noise on fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.</p>

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Date	Consultee and type of response	Topics raised	Response to topic raised and/or where considered in this chapter
October 2023	ANIFPO Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> • Queries raised in reference to a windfarm off Blackpool, where ANIFPO members were told that they were no longer allowed to fish within the array area • Queries raised regarding the cumulative impact on fisherman, policy changes that stop fishing within the array areas, leading to displacement to more confined areas • Queries raised regarding the impact of windfarms on fish species and stocks. Species disappearing from site where they used to be prolific, concern raised of potential impact. 	<ul style="list-style-type: none"> • Wind farm sites are classified as open sea, navigation rights are only excluded at the turbine position, fishing is permitted within windfarm arrays • The cumulative commercial fisheries study area consists of 36E5, 36E6, 37E5 and 37E6. This is considered an appropriate extent for assessing the potential displacement of commercial fisheries receptors as a result of the Morgan Generation Assets and other projects within the region cumulatively (section 6.10). There will be no restriction within the wind farm once operational, except for 500 m safety zones around vessels performing maintenance activities • Assessment of fish stocks has been assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.
October 2023	ISEFPO Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> • Queries raised regarding cable burial, rock protection and the potential for a snagging risk • Agreed to provide additional information on scallop grounds fished by Irish vessels. 	<ul style="list-style-type: none"> • Cables will be buried where possible (target burial depth of 1 m with a minimum burial depth of 3 m and minimum depth of 0.5 m) and in areas where this is not achievable the cable will be protected (section 6.7). Loss of fishing grounds and snagging risk are assessed in section 6.8
October 2023	NIFPO Consultation meeting – S42 response discussion and update on project changes and commitments.	<ul style="list-style-type: none"> • Queries whether there is differentiation between dredge or net fishing methods for queen scallop, highlighting that the effects would be different for each. 	<ul style="list-style-type: none"> • Receptor groups on which the impact assessment is based have been defined in Table 6.7. These are defined based on nationality, gear type, target species and vessel length.

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6.4 Baseline environment

6.4.1 Methodology to inform baseline

6.4.1.1 To characterise the baseline environment for commercial fisheries within the commercial fisheries study area (see section 6.1.3) a range of data sources was collated and reviewed, in addition to feedback from project-specific consultation and site-specific surveys. Further information is included within Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.

6.4.1.2 Where possible, data has been collated for a 10 year period, as consultation feedback has indicated that the scallop fisheries in the area of the Morgan Array Area are cyclical, over periods of seven to eight years. Therefore, effort has been made to try and capture this cyclical pattern in the data analysis presented here.

6.4.2 Desktop study

6.4.2.1 Information on commercial fisheries activity within the commercial fisheries study area was collected through a detailed desktop review of existing studies and datasets (Table 6.5), feedback from consultation (Table 6.4) and site-specific surveys (Table 6.6). Limitations and assumptions of the datasets are summarised in section 6.4.7 and outlined in further detail in Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.

Table 6.5: Summary of key desktop data sources/reports.

Title/Dataset	Source	Year	Author
Landing statistics by ICES Rectangle for UK and Isle of Man vessels.	MMO	2012 to 2022	MMO
Landings statistics by port.	MMO	2012 to 2022	MMO
Landings statistics by ICES Rectangle for European Union (EU) vessels.	European Union Scientific, Technical and Economic Committee for Fisheries (EU STECF)	2006 to 2016	EU STECF
VMS data for UK and Isle of Man vessels (≥15 m).	MMO	2009 to 2020	MMO
VMS data for European mobile bottom contacting gear vessels (>12 m).	ICES	2009 to 2020	ICES
UK inshore fishing intensity.	Centre for Environment, Fisheries and Aquaculture Science (CEFAS)	2010 to 2012	CEFAS
ICES scallop assessment working group.	ICES	2019	ICES
Isle of Man pot hauls	Isle of Man Government, Department of Environment, Food and Agriculture (DEFA)	2010 to 2021	Isle of Man Government, DEFA
Isle of Man swept area	Isle of Man Government, DEFA	2017 to 2018 and 2021 to 2022	Isle of Man Government, DEFA

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Landing statistics

- 6.4.2.2 Species landing data is recorded by ICES Rectangle and collected via the EU logbook scheme. Landings data has been collated for the UK and EU Member states for all ICES Rectangles that overlap the Morgan Generation Assets commercial fisheries study area, as illustrated in Figure 6.1.
- 6.4.2.3 Landings statistics were collated across a 10 year period from each country. Landing statistics include all landings by a country's nationally registered vessels into all ports. The following parameters were examined:
- Gear type
 - Year
 - ICES Rectangle
 - Vessel length
 - Species
 - Landing port
 - Value (£)
 - Live weight (tonnes).

Vessel monitoring system data

- 6.4.2.4 VMS data from the period 2009 to 2020 was collated from the MMO and ICES to provide an overview of the spatial extent of fishing activity within the commercial fisheries study area. The MMO dataset only captures data for ≥ 15 m vessels and the ICES dataset is from vessels >12 m in length. Fishing effort was provided in kWh, which has been calculated by multiplying the time associated with each VMS report, by the engine power of the vessel concerned at the time of activity.
- 6.4.2.5 The ICES data analysed only includes mobile bottom contacting gear types, so pots and traps (static gear) were not included.
- 6.4.2.6 King scallop and queen scallop swept area (km^2) data between 2017 to 2023 was collated from the Isle of Man Government to provide an overview of the spatial extent of this fishing activity type within and around Manx territorial waters. All licenced scallop fishing vessels, regardless of size and country of origin, are required to operate a VMS system in Manx Territorial Waters. As such, data for all king scallop (dredge) and queen scallop (otter trawl/dredge) vessel sizes are available, with the dataset not being limited to vessels >15 m, or >12 m in length. The dataset provided are split by IS Boxes, which are used to collect data for the Isle of Man Nest Forms Electronic Daily Scallop Catch Return.
- 6.4.2.7 Combined total crab and lobster pot haul, and whelk pot haul data was collated from the Isle of Man Government. The data was provided at Monthly Shellfish Activity Report (MSAR) square level for the period 2010 to 2021. MSAR squares only report on activity within ICES Rectangle 37E5, for all Manx registered vessels.

6.4.3 Site-specific surveys

- 6.4.3.1 Data from a range of site-specific survey activities and/or offshore/remote observations has also been used to inform the commercial fisheries baseline environment (see Table 6.6 for further details). A summary of the surveys that have been used to inform

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the commercial fisheries baseline environment (and subsequent impact assessment) is outlined in Table 6.6. Information on these surveys is discussed further in Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement. Limitations and assumptions of this data are summarised in section 6.4.7, and outlined in further detail in Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.

Table 6.6: Summary of site-specific survey data.

Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
Offshore Fisheries Liaison Officer (OFLO) observations 2021	Commercial fisheries study area plus 10 nm	OFLO onboard the conventional geophysical and environmental survey vessel recorded observations of fishing vessels and fishing gear present.	NFFO	30 June to 18 September 2021	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.
Winter vessel traffic survey 2021	Morgan Array Area plus 10 nm	AIS, radar and visual observations collected as part of the 14 day marine traffic survey, required as part of the ongoing Navigational Risk Assessment (NRA).	NASH Maritime	21 November to 04 December 2021	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement; Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement; Volume 2, Annex 7.1: Navigational Risk Assessment of the Environmental Statement.
Summer vessel traffic survey 2022	Morgan Array Area plus 10 nm	AIS, radar and visual observations collected as part of the 14 day marine traffic survey required as part of the ongoing NRA.	NASH Maritime	15 to 29 July 2022	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement; volume 2, Chapter 7: Shipping and navigation of the Environmental Statement; Volume 2, Annex 7.1: Navigational Risk Assessment of the Environmental Statement.

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Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
OFLO observations 2022	Commercial fisheries study area plus 10 nm	OFLO onboard the conventional geophysical and environmental survey vessel recorded observations of fishing vessels and fishing gear present.	NFFO	01 April to 10 July 2022	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.
MarineSpace observations 2022	Commercial fisheries study area plus 10 nm	Fisheries monitoring using AIS data.	MarineSpace	10 July to 30 November 2022	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.
Spring vessel traffic survey 2023	Morgan Array Area plus 10 nm	AIS and radar.	NASH Maritime	04 May to 18 May 2023	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement; Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement; Volume 2; Annex 7.1: Navigational risk assessment of the Environmental Statement.
Summer 2023 vessel traffic survey	Morgan and Morecambe Offshore Wind Farms: Transmission Assets	AIS and radar.	NASH Maritime	03 August to 17 August 2023	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement; Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement; Volume 2; Annex 7.1: Navigational risk assessment of the Environmental Statement.

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Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
Morgan Generation Assets Winter top up vessel traffic survey	Morgan Array Area	AIS and radar.	NASH Maritime	11 November to 27 November 2023	Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement; Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement; Volume 2; Annex 7.1: Navigational risk assessment of the Environmental Statement.

6.4.4 Baseline environment

6.4.4.1 Characterisation of the baseline environment for commercial fisheries is based upon the Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement and has been undertaken using the data sources listed in section 6.4.2 alongside feedback from consultation (section 6.3). Limitations of the data have been discussed fully in the Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement.

Overview of landings data

6.4.4.2 Data compiled by both the MMO (MMO, 2023a) and EU STECF¹ (EU STECF, 2017) was reviewed for the most recently available 10 year period of landings (2012 to 2022 and 2006 to 2016 respectively). MMO and EU STECF datasets were filtered to show only landings from the commercial fisheries study area (ICES Rectangles 36E5, 36E6, 37E5 and 37E6). The Morgan Array Area will be located in 36E5, 36E6, 37E5 and 37E6 (Figure 6.1).

6.4.4.3 The MMO data indicate that over the period 2012 to 2022, shellfish was the most important species group in terms of landed weight and value for UK vessels (Figure 6.2 and Figure 6.3), with the highest landings from ICES Rectangle 36E5. Landings of demersal and pelagic species were considerably lower than shellfish.

6.4.4.4 As expected, for UK vessels, the largest proportion of vessels was from the >10 m class (Figure 6.3); these vessels were predominantly from England, the Isle of Man, Northern Ireland, Scotland and Wales. The smaller UK vessels were predominantly from the Isle of Man and England, reflecting the closer proximity of home ports to this

¹ EU STECF is a group of experts, appointed by the European Commission, that undertakes scientific work, provides scientific advice on fisheries management and implements a data collection framework.

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fleet, with relatively small recordings of landings for Welsh, Scottish and Northern Irish vessels.

6.4.4.5 Dredges accounted for approximately 54 % of total landings by UK vessels from the commercial fisheries study area. This indicates the importance of the queen and king scallop fisheries in the region. Demersal trawl/seine (targeting demersal dwelling species) were also of notable importance in the commercial fisheries study area and consisted mostly of vessels >10m in length.

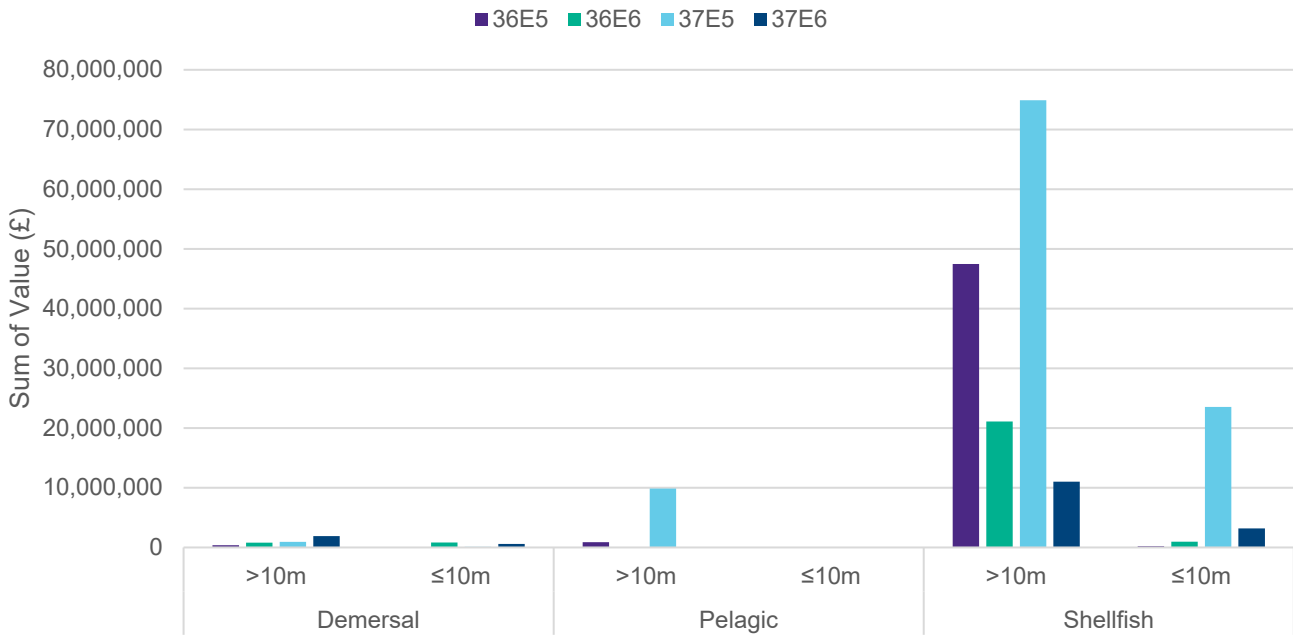


Figure 6.2: Sum of landed value (2012 to 2022) within the commercial fisheries study area, displayed by species group and vessel class (UK vessels)².

² MMO, 2023a

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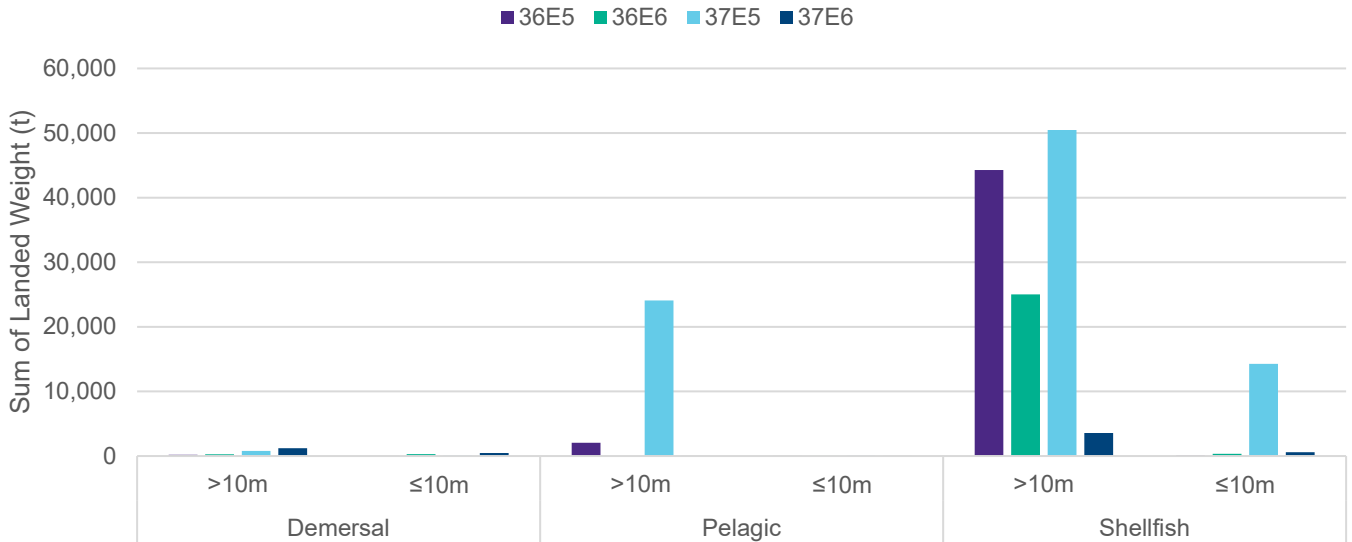


Figure 6.3: Sum of landed weight (2012 to 2022) within the commercial fisheries study area, displayed by species group and vessel class (UK vessels)³.

6.4.4.6

Due to the distance from their home ports and vessel capabilities, there are no non-UK vessels <15 m in length from Belgium and Ireland (Figure 6.4). The majority of non-UK vessels were utilising beam trawls and dredges. Key species were common sole, European plaice, thornback ray, rays and skates and brill. There was a large variety of species caught by the Belgian and Irish fleets and, given the understanding that both fleets almost exclusively use beam trawls and dredges, it is presumed other species may have been caught as by-catch during fishing for the main target species. Both beam trawls and dredge gear types exhibit poor selectivity and, hence, tend to have high by-catch rates.

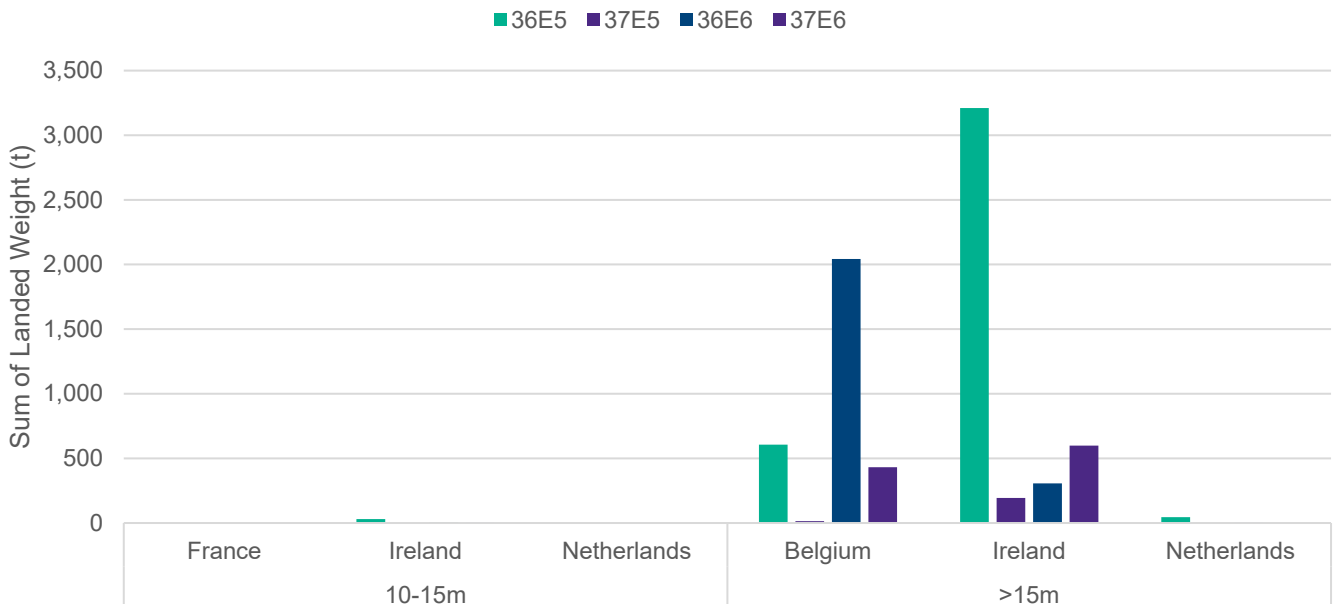


Figure 6.4: Sum of landed weight by vessel size class (2006-2016) within the commercial fisheries study area (non-UK vessels)⁴.

³ MMO, 2023a

⁴ EU STECF, 2017

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Seasonal temporal change

6.4.4.7 In terms of intra-annual variation, landings varied for all species/vessels over the period, with a clear seasonal pattern of highest weight/value of landings between March and November each year (Figure 6.5).

6.4.4.8 For the top five species landed by UK vessels within the commercial fisheries study area (Figure 6.5), the following were the key periods for highest weight and value:

- Queen scallop – July to September
- King scallop – November to May
- Herring – May to September
- Whelk – May to July
- Norway lobster – April to July.

6.4.4.9 For the non-UK fleet, based on the EU STECF data, the top five species landed within the commercial fisheries study area are king scallop, common sole, European plaice, Norway lobster and thornback ray. Based on data presented only by quarter, the periods January to March and April to June appear to be the most important in terms of landings, especially for species such as common sole and thornback ray. July to September was the least productive quarter, likely due to seasonal scallop closures in the area.

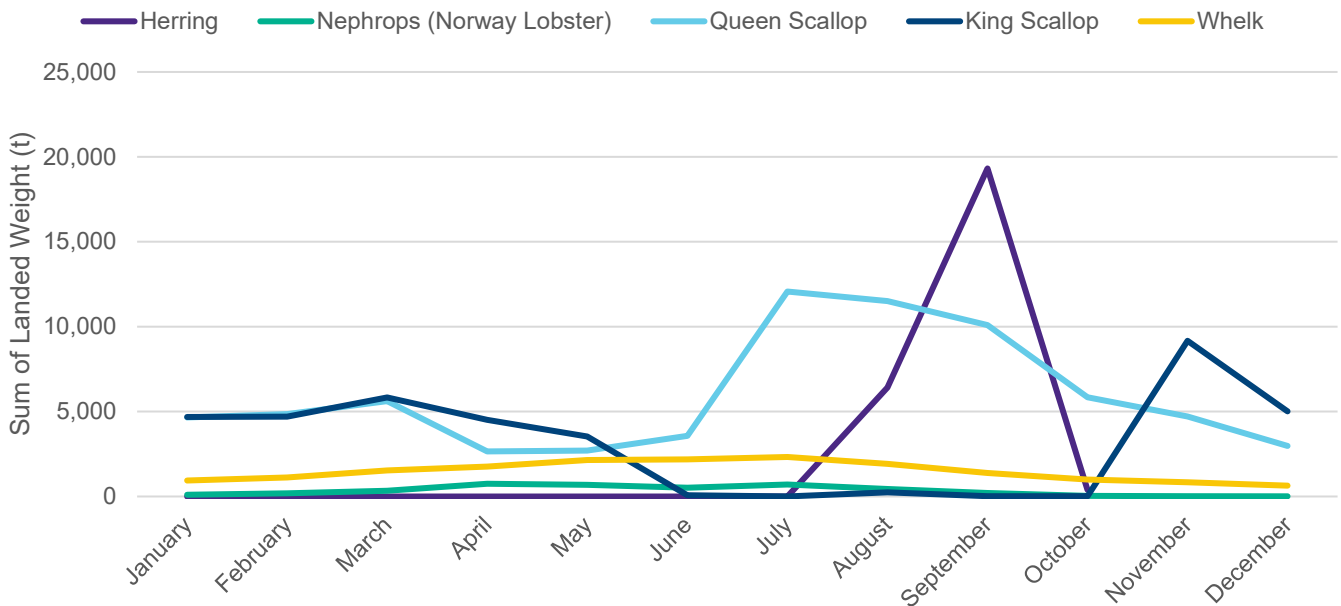


Figure 6.5: Seasonal trends in top five species by total landed weight (tonnes) from UK vessels across the commercial fisheries study area (2012 to 2022)⁵.

⁵ MMO, 2023a

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Annual temporal change

6.4.4.10 In terms of annual variation for UK vessels between 2012 to 2022, landings varied for all species/vessels over the period, with a considerably lower weight/value of queen scallop landings during 2017 to 2022 than between 2012 to 2017 (Figure 6.6). Landings of whelk generally increased between 2016 to 2020. Landings of king scallop, herring and lobster scallop fluctuated yearly.

6.4.4.11 For the non-UK fleet, the EU STECF data showed that between 2006 to 2016, the year 2006 appeared to be the most important in terms of landings across the commercial fisheries study area. Landings of king scallop were significantly higher between 2010 to 2016 than the previous years, which aligns with feedback from project-specific consultation regarding the cyclical nature of the fishery.

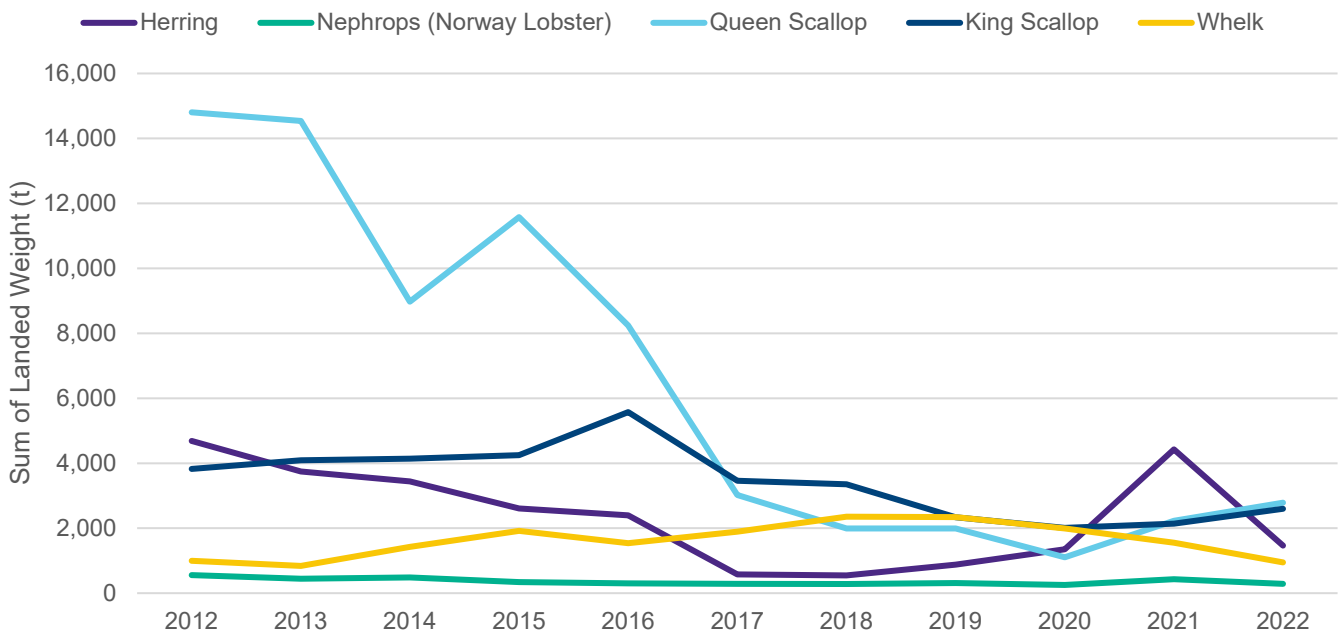


Figure 6.6: Annual trends in top five species by total landed weight (tonnes) from UK vessels across the commercial fisheries study area (2012 to 2022)⁶.

Spatial distribution of fishing activity/effort

6.4.4.12 The spatial distribution of fishing activity/effort in the commercial fisheries study area has been described within Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement. Based on review and analysis of multiple datasets as well as direct consultation with individual skippers and fisheries organisations; relevant datasets are listed in Table 6.5. The datasets show that fishing occurs within parts of the Morgan Array Area to varying degrees. A summary of the key regional fisheries is provided below.

⁶ MMO, 2023a

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Static gear

- 6.4.4.13 Analyses of the MMO VMS data (2016 to 2020) for static gear vessels (MMO, 2021a), split by ICES sub rectangle, show that the spatial distribution of UK static gear vessels ≥ 15 m varies yearly across the commercial fisheries study area.
- 6.4.4.14 UK static gear vessels ≥ 15 m were active across the commercial fisheries study area. Higher intensities of potting activity were generally observed between Barrow-in-Furness and the English-Welsh maritime boundary, and north of the Isle of Man. Within the Morgan Array Area, levels of potting were generally higher in the east (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.49). Feedback from project-specific consultation with fisheries stakeholders has suggested that this activity is mostly from whelk vessels.
- 6.4.4.15 Combined total crab and lobster pot haul, and whelk pot haul data, collated from the Isle of Man Government, is provided at MSAR square level (2010 to 2021), which only report on activity within ICES Rectangle 37E5 for all Manx registered vessels.
- 6.4.4.16 Isle of Man registered static gear vessels, targeting crab and lobster, were active across ICES Rectangle 37E5 at varying degrees. Higher intensities of crab and lobster pot haul effort were observed to the south and west of the Isle of Man, within the Manx 6 nm limit. Lower levels of activity can generally be observed to the west of the Isle of Man and beyond the Manx 6 nm limit. An overlap of crab and lobster pot haul effort can be observed with the Morgan Array Area, although this is at a relatively low level (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.63).
- 6.4.4.17 Isle of Man registered static gear vessels, targeting whelk, were active across ICES Rectangle 37E5 at varying degrees. Higher intensities of whelk pot haul effort were observed within the Manx 6 nm limit particularly in areas to the south east of the Isle of Man. Lower levels of activity can generally be observed in all areas of ICES Rectangle 37E5 beyond the Manx 6 nm limit. An overlap of whelk pot haul effort can be observed with the Morgan Array Area, although this is at a relatively low level (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.64).

Dredge gear

- 6.4.4.18 Within the commercial fisheries study area, landings using mechanical dredge accounted for approximately 54 % of total landings by UK vessels, indicating the relative importance of the scallop dredge fishery in the region. Of these UK vessels, the MMO landings data indicated notable importance of the dredge fishery to the Scottish, Isle of Man and Northern Irish fisheries, as their vessels deploying dredges accounted for the majority of their total landed weight. In terms of non-UK vessels, the Irish fleet accounted for the largest proportion of dredge vessels.
- 6.4.4.19 The dredge fishery targets scallops, with minimal landings of other commercial species. Landings by Isle of Man dredge vessels are highest from 37E5, with notable landings also from 36E5; landings by Scottish dredge vessels are highest from 36E5, with notable landings from 36E6 and 37E5; landings by Northern Irish dredge vessels were notable from 37E5, 36E5 and 36E6; landings by Irish dredge vessels were highest from 36E5. VMS data indicated that highest intensities of the dredge fishery were within the Isle of Man 12 nm limit, and within the west parts of the Morgan Array Area. This is supported by feedback from project-specific consultation which highlighted that the west corner of the Morgan Array Area is an important queen

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scallop fishing ground, whereas the east part of the Morgan Array Area is of lesser importance to the scallop fisheries.

- 6.4.4.20 Annual landed weight by the dredge fishery was highly variable, with considerably lower catches within the commercial fisheries study area between 2017 to 2020, compared with 2010 to 2016 (Figure 6.6). This reflects the somewhat cyclical nature of scallop fisheries, where particular grounds are more productive in certain years and are, therefore, targeted on a cyclical basis, as indicated by fisheries stakeholders in consultation workshops.
- 6.4.4.21 King scallop (dredge) and queen scallop (otter trawl/dredge) swept area (km²) data between 2017 to 2023, collated from the Isle of Man Government, provide an overview of the spatial extent of all licenced scallop fishing vessels within Manx territorial waters.
- 6.4.4.22 Dredge vessels targeting king scallop were active across the Manx Territorial Sea, at varying intensities. Highest intensities can generally be observed within the Isle of Man 12 nm limit and to the west of the Morgan Array Area; relatively high levels of activity overlapped with the northwestern part of the Morgan Array Area. Lowest levels of activity can be observed beyond the Isle of Man 12 nm limit. It is evident while analysing the data that dredge activity and intensity varies by year, which also corroborates information from fisheries stakeholders, suggesting that the fishery is cyclical over seven to eight year periods (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.61).
- 6.4.4.23 Activity by dredge/otter trawl deployed by vessels targeting queen scallop was generally highest in the south eastern section of ICES Rectangle 37E5, overlapping with the northwestern part of the Morgan Array Area (2018 to 2022). Other areas of relatively high activity can be observed within the Isle of Man Territorial Sea, particularly in areas to the north and south of the Isle of Man. Lowest levels of activity can be observed beyond the Isle of Man 12 nm limit. Activity fluctuated across the time period studied (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.62).

Demersal fishery – beam trawl

- 6.4.4.24 VMS data illustrating beam trawl (vessels >12 m) activity over the period 2009 to 2020, showed sporadic overlap with small areas in the east of the Morgan Array Area, at a relatively low intensity (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.50). There were two areas of higher intensity beam trawling activity within the commercial fisheries study area which did not overlap with the Morgan Array Area; these areas were observed to the south of the Isle of Man, and beyond the 12 nm limit of English waters.
- 6.4.4.25 Within the commercial fisheries study area, the landings data indicates that landings by vessels using beam trawl were predominantly undertaken by Belgian and southwest coast English fleets. The target species of this fishery are sole and plaice, which are principally taken from ICES Rectangles 36E6 and 36E5. This coincides with information provided from fisheries stakeholders within consultation, which has indicated that beam trawl vessels from the southwest of the UK are active in the Morgan Array Area during the Spring, with these vessels predominantly targeting sole and plaice. Belgian beam trawl vessels are active within the commercial fisheries study area, but do not fish where the Morgan Array Area is located. Beam trawl activity fluctuated across the time period studied.

Demersal fishery – otter trawl

- 6.4.4.26 Otter trawl vessels from Belgium, England, Isle of Man, Northern Ireland, Scotland and Wales were active within the commercial fisheries study area; although activity fluctuated across the time period studied. Feedback from consultation suggested that otter trawl vessels from the Isle of Man target queen scallop, generally between July and October.
- 6.4.4.27 VMS data illustrating activity by otter trawl vessels (>12m) from England, Isle of Man and Northern Ireland displays highest observed levels within in the west and northeast of the commercial fisheries study area, with an area of activity also located southeast of the Isle of Man (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.52). Activity within the Morgan Array Area was generally limited to the west part, which is likely due to vessels targeting scallop. The higher intensity area off the Cumbria coast shows the *Nephrops* grounds, although this does not overlap with the Morgan Array Area.
- 6.4.4.28 As discussed above in paragraph 6.4.4.23, queen scallop (otter trawl/dredge) swept area (km²) data between 2017 to 2023 indicate that activity was highest in the south eastern section of ICES Rectangle 37E5, overlapping with the northwestern part of the Morgan Array Area (2018 to 2022) (Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement, Figure 1.62).

6.4.5 Receptor groups

- 6.4.5.1 From the overview of the commercial fisheries baseline environment presented in the previous sections, it is clear to note that there is a range of UK and non-UK fleets targeting a number of different fisheries in the commercial fisheries study area. The diverse nature of these fleets and fisheries means that potential impacts on the Morgan Generation Assets will vary depending on the fleet concerned.
- 6.4.5.2 To ensure that potential impacts which may affect certain fleets/fisheries in different ways are fully assessed, a number of commercial fisheries receptor groups have been identified through review of data and feedback from stakeholder consultation. A total of seven main receptor groups have been defined. These have been categorised based on gear type, nature of fishing activity and nationality and are summarised in Table 6.7.
- 6.4.5.3 It is important to note that not all commercial fishing fleets active in the commercial fisheries study area will be affected by the Morgan Generation Assets. Inshore static gear vessels have been scoped out of this assessment, as it is not anticipated that they will be affected by the proposed development of the Morgan Generation Assets. They are not active within, or in the vicinity of, the Morgan Array Area, and the data shows very low levels of activity within the commercial fisheries study area. Norway lobster (*Nephrops*) vessels have been assessed within the displacement impact but scoped out for all other impacts. This receptor group shows relatively high levels of activity, northeast of the Morgan Array Area, so could be affected by vessels displaced by the Morgan Generation Assets. However, these vessels are not active within the Morgan Array Area, so will not be directly affected by any other impacts.

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Table 6.7: Key commercial fisheries receptor groups used in this assessment.

Receptor Group	Description
Offshore static gear vessels	Larger (>12 m) static gear vessels that are active offshore (beyond 12 nm) and within the Morgan Array Area. These are predominantly English vessels that mostly target whelk, as established by project specific consultation.
Beam trawl vessels	Beam trawl vessels that are active across the commercial fisheries study area. Vessels are predominantly from Belgium and the south west coast of England, mostly targeting sole and plaice as established by project specific consultation; however, the receptor group may include vessels from other UK jurisdictions and Ireland. Vessels from the south west coast of England are active within the Morgan Array Area, whereas Belgium beam trawl vessels are not.
Scallop vessels – Scottish west coast	West coast based Scottish vessels deploying dredges that are active across the commercial fisheries study area, targeting king and queen scallop. Key ports for this receptor group include Kirkcudbright and Annan. The west coast based Scottish scallopers are particularly active within the commercial fisheries study area and rely heavily upon the Morgan Array Area for the dredging of queen scallop.
Scallop vessels – Isle of Man	Vessels from the Isle of Man deploying dredges and otter trawls that are active across the commercial fisheries study area targeting king and queen scallop. Consultation with stakeholders has established that queen scallop targeted by Isle of Man vessels deploying dredges and otter trawls generally operate within the Manx Territorial Sea, while Isle of Man vessels deploying dredges target king scallop in both the Manx Territorial Waters and areas beyond in UK waters. Fishing techniques in the Isle of Man differ to the rest of the UK fleet due to the fisheries regulations set out by the Isle of Man Government and the main target species.
Other Scallop vessels	Vessels deploying dredges that are active across the commercial fisheries study area, targeting king and queen scallop. Vessels are predominantly from Northern Ireland and Ireland, as established by project specific consultation, but may also include more nomadic vessels from other UK jurisdictions.
Herring vessels	Vessels deploying pelagic trawls and seine nets that are active across the commercial fisheries study area, targeting herring. Vessels are predominantly from Ireland and Northern Ireland, as established by MMO and EU STECF landings data, and project-specific consultation.
Norway lobster (<i>Nephrops</i>) vessels	Vessels predominantly deploying demersal trawls/seine and otter trawls that are active across the commercial fisheries study area, targeting Norway lobster (<i>Nephrops</i>). Vessels are predominantly from England, Northern Ireland and Scotland, as established by MMO and EU STECF landings data, and project-specific consultation.

6.4.6 Future baseline scenario

6.4.6.1 The Infrastructure Planning (EIA) Regulations 2017 requires that the future baseline scenario is presented within the Environmental Statement. The Infrastructure Planning (EIA) Regulations 2017 state that the Environmental Statement must include: “*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*”. In the event that the Morgan Generation Assets is not developed further in the future, an assessment of potential future baseline conditions has been carried out and is described within this section.

6.4.6.2 The baseline environment for commercial fisheries is constantly evolving. The fishing industry is dynamic, with frequent and sometimes unpredictable changes which affect activity, for example, changes in fish abundance and distribution, climatic conditions, management regulations and fuel costs (DECC, 2016). A review by the Irish Sea

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Maritime Forum highlighted that 'Brexit', overfishing and spatial conflict are considered key future issues for the fishing industry (Salthouse, 2021). More recently, increased fuel prices and the Covid-19 pandemic are likely to impact fishing activity; for example, vessels with longer transit times may reduce their activity in the region, due to higher fuel prices.

6.4.6.3 The baseline was described using the most recent datasets available and across a 10 year time period, where possible. This time period was selected to account for variations within the different fisheries, for example the scallop fishery within the commercial fisheries study area is cyclical over seven to eight year periods.

6.4.6.4 At the time of writing, uncertainty remains with respect to impacts of the UK's withdrawal from the Common Fisheries Policy (CFP) and how fishing activity may be affected within the commercial fisheries study area. Under the new EU-UK Trade and Cooperation Agreement there is a five year transition period, whereby 25 % of the EU quota for British waters will be transferred to the UK fishing fleet, phased across the five years until 2025. As a result, the UK will receive higher quota shares for some stocks, as outlined in Table 6.8 for species within the Irish Sea. However, a large proportion of landings within the commercial fisheries study area are from non-quota shellfish species, however, and will not be affected by the quota changes.

Table 6.8: Quota share changes by 2026 for the UK, for species within the Irish Sea⁷.

Stock	2020 UK share of EU quota	2026 UK share of EU/UK quota or TAC	UK quota absolute increase
Herring	73.97 %	99.01 %	25 %
Plaice	41.15 %	51.11 %	10 %
Haddock	47.91 %	56.02 %	8 %
Whiting	38.70 %	61.00 %	22 %
Cod	28.79 %	44.80 %	16 %
Sole	21.01 %	23.30 %	2 %

6.4.6.5 Prior to the new trade agreement, a large percentage of fish caught in the region was sold to EU markets, so introduction of the Catch Certificate and other supporting documents, as well as changes to tariffs, could act as a considerable barrier to particular markets. Landings of species, such as whelk, which are exported to non-UK countries may increase as a result.

6.4.7 Data limitations

6.4.7.1 Limitations with data sources used have been discussed fully in Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement. The use of various datasets, combined with feedback from stakeholder consultation, has managed the limitations of the data; therefore, the limitations identified are not considered to affect the certainty/predictability of the impact assessment in section 6.8.

6.4.7.2 It should be noted that although smaller vessels are not captured within the MMO (<15 m vessels) and ICES (<12 m vessels) VMS data, information on their activity has been

⁷ ABPmer, 2021

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reviewed through feedback from stakeholder consultation and other supplementary data sources, such as information gathered via site specific surveys undertaken in 2021, 2022 and 2023.

6.4.7.3 The landings statistics datasets are only available by the ICES rectangle, so these only give an indication of commercial fisheries activity for a general area. Vessels ≤ 10 m are not required to complete logbooks, so may be under-represented within the landings statistics.

6.4.7.4 Data collected via site specific surveys, only capture fishing activity during a short time period and have, therefore, only been used to supplement the official datasets and corroborate feedback from consultation with fisheries stakeholders. However, the site-specific surveys are useful to provide context on fishing activity over the last few years, which the official datasets do not currently cover.

6.5 Impact assessment methodology

6.5.1 Overview

6.5.1.1 The commercial fisheries impact assessment has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the Environmental Statement. Specific to the commercial fisheries impact assessment, the following guidance documents have also been considered:

- FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison: FLOWW (Fishing Liaison with Offshore Wind and Wet Renewables Group) (FLOWW, 2014)
- FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds. FLOWW (Fishing Liaison with Offshore Wind and Wet Renewables Group) (FLOWW, 2015)
- Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (United Kingdom Fisheries Economics Network (UKFEN), 2012)
- Options and opportunities for marine fisheries mitigation associated with windfarms (Blyth-Skyrme, 2010)
- Fishing and Submarine Cables – Working Together (International Cable Protection Committee (ICPC), 2009)
- RenewableUK (2013) Cumulative impact assessment guidelines, guiding principles for cumulative impacts assessments in offshore windfarms
- Seafish Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (2012).

6.5.2 Impact assessment criteria

6.5.2.1 The process for determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the receptor sensitivity. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 5: EIA methodology of the Environmental Statement.

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6.5.2.2 The criteria for defining magnitude of impact in this chapter are outlined in Table 6.9 below. It should be noted that beneficial impacts as a result of the Morgan Generation Assets are also possible. In such a case, the same definitions would apply as in Table 6.9, albeit in reverse (e.g. the impact would affect an area from which a minor proportion (5-10 %) of a commercial fishing receptor's annual value of landings is caught and/or would lead to a 5-10 % increase in annual value of landings).

Table 6.9: Definition of terms relating to magnitude of impact.

Magnitude of impact	Definition
High	The effect would be permanent/irreplaceable change and is likely to occur.
	The impact would permanently affect an area from which the majority (>50 %) of a commercial fishing receptor's annual value of landings is caught and/or would lead to a >50 % reduction in annual value of landings.
Medium	The effect would be long-term (e.g. less than 35 years) though reversible and is likely to occur.
	The impact would affect an area from which a moderate proportion (11-50 %) of a commercial fishing receptor's annual value of landings is caught and/or would lead to a 11-50 % reduction in annual value of landings.
Low	The effect would be short to medium term (e.g. less than five years) through reversible and could possibly occur.
	The impact would affect an area from which a minor proportion (5-10 %) of a commercial fishing receptor's annual value of landings is caught and/or would lead to a 5-10 % reduction in annual value of landings.
Negligible	The effect would be short-term (e.g. less than two years), intermittent and reversible and unlikely to occur.
	The impact would affect an area from which a very small proportion (<5 %) of a commercial fishing receptor's annual value of landings is caught and/or would lead to a <5 % reduction in annual value of landings.

6.5.2.3 The criteria for defining sensitivity in this chapter are outlined in Table 6.10 below.

Table 6.10: Definition of terms relating to sensitivity of the receptor.

Sensitivity	Definition
High	Very low spatial adaptability due to limited operational range and/or very low ability to deploy more than one gear type.
	Very limited spatial tolerance due to dependence upon a single ground.
	Very low recoverability due to inability to mitigate loss of fishing area by operating in alternative areas.
Medium	Limited spatial adaptability due to extent of operational range and/or limited ability to deploy an alternative gear type.
	Limited spatial tolerance due to dependence upon a limited number of fishing grounds.
	Limited recoverability with some ability to mitigate loss of fishing area by operating in alternative areas.
Low	Moderate spatial adaptability due to extensive operational range and/or moderate ability to deploy an alternative gear type.
	Moderate spatial tolerance due to ability to fish numerous fishing grounds.
	Moderate recoverability due to ability to mitigate loss of fishing area by operating in a range of alternative areas of the Irish Sea.

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Sensitivity	Definition
Negligible	Category of fishing receptor with an extensive operational range and high method versatility. Vessel able to exploit a large number of fisheries.

6.5.2.4 The significance of the effect upon commercial fisheries is determined by correlating the magnitude of impact with the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 6.11. Where a range of significance of effect is presented, the final assessment for each effect is based upon expert judgement.

6.5.2.5 For the purposes of this assessment, any impacts with a significance level of minor or less are not significant in terms of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. As discussed, such impacts can be either adverse or beneficial.

6.5.2.6 Where impacts fall within a range of ‘minor or moderate’ within Table 6.11, the final assessment of significance in EIA terms has been made based on the understanding of the receptor.

Table 6.11: Matrix used for the assessment of the significance of effect.

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	Low	Medium	High
Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor	Minor or Moderate	Moderate or Major	Major

6.6 Key parameters for assessment

6.6.1 Maximum design scenario

6.6.1.1 The Maximum Design Scenarios (MDSs) identified in Table 6.12 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the Environmental Statement as well as the information available on other projects and plans. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g. different wind turbine layout), to that assessed here, be taken forward in the final design scheme.

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Table 6.12: MDS considered for the assessment of potential impacts on commercial fisheries.

^a C=construction, O=operations and maintenance, D=decommissioning.

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Loss or restricted access to fishing grounds	✓	✓	✓	<p>Construction phase</p> <p>Loss or restricted access to fishing grounds due to:</p> <ul style="list-style-type: none"> • Duration: up to four years, however, during this period, fishing activity will only be excluded from discrete spatial areas (i.e. only parts of the Morgan Array Area will be subject to temporary restrictions where construction is taking place) • During the construction phase the loss or restricted access to fishing grounds will be gradual, as the presence of infrastructure increases; reaching the MDS, outlined below, in the operations and maintenance phase. The MDS in terms of the presence of infrastructure would be on the completion of construction, during the operations and maintenance phase • Construction safety zones: 500 m safety zones around vessels installing wind turbines including foundations and Offshore Substation Platforms (OSPs) during their construction. 50 m safety zone around each item of infrastructure during the construction phase, where no construction works are taking place on that infrastructure (for example, where a wind turbine generator is incomplete or is in the process of being tested before commissioning). It is proposed that rolling advisory exclusion zones of 500 m will also be present around vessels installing inter-array cables and interconnector cables. The loss or restricted access to fishing grounds created by such exclusion zones will be gradual as the presence of infrastructure increases. Temporary restrictions to fishing activity and/or anchoring, will also be required in areas where full cable burial to target depth has not yet been achieved and/or surface-laid cable exists (prior to cover by external cable protection). In such areas of temporarily shallow-buried/surface-laid cable, the restricted areas will be monitored by Guard Vessels. 	Maximum duration and extent of fishing exclusion, and therefore the greatest potential to restrict access to fishing grounds.

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Potential impact	Phase ^a Maximum Design Scenario C O D	Justification
	<p>Seabed preparation:</p> <ul style="list-style-type: none"> • Sandwave and boulder clearance for wind turbines including foundations, OSPs, inter-array cables and the interconnector cables throughout the Morgan Array Area over a duration of approximately 12 months within the wider offshore construction programme • Existing cable removal: up to 46 km. <p>Reduction of access around infrastructure during construction:</p> <ul style="list-style-type: none"> • Wind turbine generators: <ul style="list-style-type: none"> - up to 96 wind turbine generators including foundations - minimum spacing 1,400 m between rows of wind turbines and 1,400 m between wind turbines in a row - maximum seabed footprint of up to 735,488 m² (inclusive of scour protection) • OSPs: up to four OSPs with a seabed footprint of up to 24,964 m² (inclusive of scour protection) • Inter-array cables: up to 390 km of inter-array cables, buried (where possible) to a minimum depth of 0.5 m • Inter-array cable protection: up to 39 km (10 % of total length) of inter-array cables may require cable protection (steel armour wire, rock dump or mattresses), up to a height of 3 m and a width of 10 m • Inter-array crossings: up to 10 crossings with concrete mattresses and rock berm, maximum dimensions – 4 m height x 80 m length x 36 m width • Interconnector cables: up to 60 km of interconnector cables, buried (where possible) to a minimum depth of 0.5 m • Interconnector cable protection: up to 12 km (20 % of total length) of interconnector cables may require cable protection (steel armour wire, rock dump or mattresses) up to a height of 3 m and a width of 10 m 	

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Potential impact	Phase ^a Maximum Design Scenario			Justification
	C	O	D	
				<ul style="list-style-type: none"> • Interconnector crossings: up to 10 crossings with concrete mattresses and rock berm, maximum dimensions – 3 m height x 50 m length x 20 m width • Up to a total of 69 construction vessels on site at any one time • Up to 1,929 installation vessel movements (return trips) during construction.
Loss or restricted access to fishing grounds	✓	✓	✓	<p>Operations and maintenance phase</p> <ul style="list-style-type: none"> • Operation duration: 35 years • Operational safety zones: 500 m around any vessel involved in major maintenance works • Cable repair/reburial activities: • Inter-array cables: <ul style="list-style-type: none"> - repair of up to 8 km of cable in one event every three years - reburial of up to 20 km of cable in one event every five years • Interconnector cables: <ul style="list-style-type: none"> - repair of up to 20 km of cable in each of three events every 10 years - reburial of up to 3 km of cable in one event every five years • Up to a total of 16 operations and maintenance vessels on site at any one time • Up to 719 operations and maintenance vessel movements (return trips) each year. <p>Decommissioning phase</p> <ul style="list-style-type: none"> • The duration of the decommissioning programme is anticipated to be no longer than as for construction, and thus, up to four years <p>The Morgan Generation Assets fisheries mitigation and management measures and how they may facilitate co-existence and co-location during the operations and maintenance phase are outlined within Table 6.14 and are committed to within the outline FLCP (Document Reference: J10).</p> <p>Fishing is assumed to continue within the Morgan Array Area, where possible, as outline in the assessment of impacts for each receptor group. The only exception will be any temporary (advisory) 500 m safety zones that will be implemented around any large vessels undertaking cable repair/remediation events.</p>

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Potential impact	Phase ^a Maximum Design Scenario			Justification
	C	O	D	
				<ul style="list-style-type: none"> During the decommissioning phase the loss or restricted access to fishing grounds would gradually decrease from the operations and maintenance MDS as structures above the seabed are removed and cut below the seabed.
Displacement of fishing activity into other areas	✓	✓	✓	<p>Construction phase Refer to 'Loss or restricted access to fishing grounds' section of this table.</p> <p>Operations and maintenance phase Refer to 'Loss or restricted access to fishing grounds' section of this table.</p> <p>Decommissioning phase Refer to 'Loss or restricted access to fishing grounds' section of this table.</p>
Interference with fishing activity	✓	✓	✓	<p>Construction phase</p> <ul style="list-style-type: none"> Duration: up to four years, however, during this period, fishing activity will only be excluded from discrete spatial areas (i.e. only parts of the Morgan Array Area will be subject to temporary restrictions where construction is taking place). Up to a total of 69 construction vessels on site at any one time Up to 1,929 installation vessel movements (return trips) during construction. <p>Operations and maintenance phase</p> <ul style="list-style-type: none"> Operation duration: 35 years Up to a total of 16 operations and maintenance vessels on site at any one time Up to 719 operations and maintenance vessel movements (return trips) each year. <p>Decommissioning phase</p>

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Potential impact	Phase ^a Maximum Design Scenario			Justification	
	C	O	D		
				<ul style="list-style-type: none"> The duration of the decommissioning programme is anticipated to be the same as for construction, and thus, up to four years During the decommissioning phase the changes would gradually decrease from the operations and maintenance MDS as the need for project-related vessels is reduced. 	
Temporary increase in steaming distances	✓	×	✓	<p>Construction phase As for ‘Loss or restricted access to fishing grounds’ – see above.</p> <p>Decommissioning phase As for ‘Loss or restricted access to fishing grounds’ – see above.</p>	Maximum potential disruption to established steaming routes.
Loss or damage to fishing gear due to snagging	✓	✓	✓	<p>Construction phase As for ‘Loss or restricted access to fishing grounds’ and ‘interference with fishing activity’ – see above.</p> <p>Operations and maintenance phase As for ‘Loss or restricted access to fishing grounds’ and ‘interference with fishing activity’ – see above.</p> <p>Decommissioning phase As for ‘Loss or restricted access to fishing grounds’ and ‘interference with fishing activity’ – see above.</p>	Maximum duration and extent of seabed obstructions and therefore the maximum potential for interactions between infrastructure and fishing gear.
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	As described in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Greatest disturbance to fish and shellfish species, and therefore the resulting effect to commercial fisheries.
Supply chain opportunities for local fishing vessels	✓	✓	✓	<p>Construction phase</p> <ul style="list-style-type: none"> Duration: up to four years, however, during this period, fishing activity will only be excluded from discrete spatial areas (i.e. only parts of the Morgan Array Area will be subject to temporary restrictions) 	Potential opportunities for local fishing vessels (potential beneficial impact for commercial fishing vessels).

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Potential impact	Phase ^a Maximum Design Scenario			Justification
	C	O	D	
			<ul style="list-style-type: none"> Likely number of guard vessels onsite at one time (array): one Potential provision of fishing vessel for visual checks of project infrastructure Potential provision of fishing vessel for scouting surveys Potential for OFLO duties. <p>Operations and maintenance phase</p> <ul style="list-style-type: none"> There may be opportunities for commercial fishing vessels to provide marine operation support during the operations and maintenance phase (35 years) of the Morgan Generation Assets, such as OFLO duties during period of major maintenance and guard vessel requirements. <p>Decommissioning phase</p> <ul style="list-style-type: none"> The duration of the decommissioning programme is anticipated to be no longer than as for construction, and thus, up to four years In the absence of detailed methodologies, the supply chain opportunities for local fishing vessels are considered the same as for the construction phase. 	
Increased risk of introduction and spread of invasive non-native species (INNS)	✓	✓	✓ This impact has been considered in Volume 2, Chapter 2: Benthic subtidal ecology of the Environmental Statement.	Maximum surface area created by offshore infrastructure and maximum number of vessel movements during construction, operations and maintenance and decommissioning phases.
Increased collision and allision risk to commercial fishing vessels	✓	✓	✓ This impact has been considered in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.	Greatest extent of the Morgan Generation Assets over the longest duration, with the maximum number of project vessel movements, therefore the highest potential for increases in the risk of collision and allision.

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6.6.1.2 The MDS when considering the impact on commercial fisheries relates to the maximum duration and extent of fishing exclusion, seabed obstructions and disturbance during construction, operations and maintenance and decommissioning phases, and the largest amount of material including, maximum number of wind turbines, OSPs and the longest cable route (i.e. inter array). This approach would combine scenarios, however, would represent the maximum design scenario as a conservative approach for the assessment of potential impacts.

6.6.2 Impacts scoped out of the assessment

6.6.2.1 On the basis of the baseline environment and the description of development outlined in Volume 1, Chapter 5: Project description of the Environmental Statement, an impact is proposed to be scoped out of the assessment for commercial fisheries. This impact is outlined, together with a justification for scoping it out, in Table 6.13.

Table 6.13: Impacts scoped out of the assessment for commercial fisheries.

Potential impact	Justification
Increased steaming distances during the operations and maintenance phase.	<p>Once the Morgan Generation Assets have been constructed, fishing vessels will be able to transit through the Morgan Array Area to/from adjacent fishing grounds. The presence of wind farm infrastructure during the operations and maintenance phase would not affect steaming distances.</p> <p>The Planning Inspectorate agreed in the Scoping Opinion that this matter can be scoped out on the basis that, once operational, fishing vessels will be able to transit through the Morgan Array Area</p>

6.7 Measures adopted as part of the Morgan Generation Assets

6.7.1.1 For the purposes of the EIA process, the term ‘measures adopted as part of the project’ is used to include the following measures (adapted from IEMA, 2016):

- Measures included as part of the project design. These include modifications to location or design, integrated into the application for consent. These measures are implemented through the consent itself; through the requirements of the DCO or the conditions within the deemed marine licence (s) (referred to as primary mitigation in IEMA, 2016)
- Measures required to meet legislative requirements, or actions that are considered to be standard practice used to manage commonly occurring environmental effects (referred to as tertiary mitigation in IEMA, 2016).

6.7.1.2 A number of measures (primary and tertiary) have been adopted as part of the Morgan Generation Assets to reduce the potential for impacts on commercial fisheries (see Table 6.14).

6.7.1.3 As there is a commitment to implementing these measures, they are considered inherently part of the design of the Morgan Generation Assets and have, therefore, been considered in the assessment presented in section 6.8 below (i.e. the determination of magnitude and, therefore, significance, assumes implementation of these measures).

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Table 6.14: Measures adopted as part of the Morgan Generation Assets.

Measures	Justification	How the measure will be secured
Primary measures: Measures included as part of the project design		
<p>Development of and adherence to a Construction Method Statement (CMS) which includes a Cable Specification and Installation Plan (CSIP), the CSIP will incorporate the Cable Burial Risk Assessment (CBRA) where cable protection shall be designed to minimise snagging hazards as far as possible, for example by minimising height above seabed, smooth and shallower profiles, grade used for rock placement, type of rock (e.g. smoother edges).</p>	<p>To ensure safety of fishing activity and to minimise the amount of fishing grounds lost, cable protection shall be designed to minimise snagging hazards as far as possible, for example by minimising height above seabed, smooth and shallower profiles, grade used for rock placement, type of rock (e.g., smoother edges).</p> <p>The use of cable protection will be minimised as far as practicable and only used where required. Cable protection will only be used where the minimum target burial depth (0.5 m) cannot be achieved, for example in areas of hard ground. This will be informed by outputs from the Cable Burial Risk Assessment (CBRA) completed by the installation contractor(s) prior to the commencement of installation.</p>	<p>CSIP as part of the CMS secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>Development of and adherence to an offshore CMS which includes a CSIP where the time delay between sequential cable installation operations (e.g. cable-lay and post-lay burial), shall be minimised to as short as reasonably practicable.</p>	<p>Time delay between sequential cable installation operations (e.g. cable-lay and post-lay burial), shall be minimised to as short as reasonably practicable, to minimise duration of disruption to commercial fishing activity in the inter-array cables and interconnector cables area.</p> <p>The Morgan Generation Assets are to issue weekly notice of operations which depict where cables have been laid and when they have been buried.</p>	<p>CSIP as part of the CMS secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>Development of, and adherence to, a Design Plan with infrastructure spacing at a minimum of 1,400 m apart.</p>	<p>The Applicant has increased the minimum spacing between infrastructure within the Morgan Array Area, increasing the spacing from 1,000 m between rows of wind turbines and 875 m between each wind turbine in a row to 1,400 m both within and between rows, in order to provide additional space for continued fishing and transit by commercial fisheries between and around the Morgan Array Area.</p>	<p>The Design Plan is secured within the deemed marine licences of the Draft DCO (document reference C1).</p>
<p>Development of and adherence to a Design Plan (DP) with roughly north to south alignment of wind turbine rows and will include two lines of orientation for navigation and Search and Rescue (SAR) access.</p>	<p>A Design Plan, including a plan of the Morgan Array Area, will be prepared and submitted to the MCA and Trinity House post-consent but before construction commences.</p> <p>The Applicant has committed to positioning wind turbine rows in a roughly north to south alignment, to allow for continued fishing within the Morgan Array Area.</p> <p>Project-specific consultation has established that scallop and static gear vessels tow and deploy their gear in a north to south alignment within the Morgan Array Area, which is the only orientation possible due to tides in the region.</p>	<p>The commitment is secured through the Outline Fisheries Liaison and Coexistence Plan (FLCP) (Document Reference: J10).</p> <p>The DP and the FLCP are secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>

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Measures	Justification	How the measure will be secured
Development of and adherence to a DP which includes implementation of a Scallop Mitigation Zone (SMZ) over an area of core scallop grounds within the Morgan Array Area.	To seek to design the array layout to increase potential for co-existence and co-location, the Applicant has made a commitment to maintaining an area free of wind turbines and offshore substation platforms (OSPs) over an area of core scallop grounds within the Morgan Array Area, termed the Scallop Mitigation Zone.	The commitment is secured through the Outline FLCP (Document Reference: J10). The DP and the FLCP are secured within the deemed marine licences of the Draft DCO (Document Reference: C1).
Tertiary measures: Measures required to meet legislative requirements or actions that are considered to be standard practice		
Development of and adherence to a FLCP, in accordance with the Outline FLCP that includes for investigating the establishment of a commercial fisheries working group.	A commercial fisheries working group can provide a forum for information sharing and discussion of key issues with commercial fisheries stakeholders and other developers in the region.	The commitment is secured through the Outline FLCP (Document Reference: J10). The FLCP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).
Development of and adherence to an Offshore EMP, which includes a FLCP, to include details of the appointment and responsibilities of a Company Fisheries Liaison Officer (CFLO).	To maintain effective communications between the Morgan Generation Assets and the commercial fishing industry.	The commitment is secured through the Outline FLCP (Document Reference: J10). Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).
Development of and adherence to a FLCP, in accordance with the Outline FLCP that includes for ongoing liaison with the fishing industry through the CFLO and FIR (Fisheries Industry Representative) and adhere to good practice guidance with regards to fisheries liaison.	To maintain effective communications between the Morgan Generation Assets and the commercial fishing industry.	The commitment is secured through the Outline FLCP (Document Reference: J10). The FLCP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).
Development of and adherence to a FLCP, in accordance with the Outline FLCP that includes for the use of Offshore Fisheries Liaison Officers (OFLOs) where required and appropriate.	OFLOs facilitate engagement with commercial fisheries stakeholders during specific Morgan Generation Assets works and promote co-existence by communicating the commitments and measures by the Morgan Generation Assets to coexist with the fishing industry and reduce impacts on commercial fisheries as far as practicably possible. Provision of detailed project information to fishermen to aid co-existence, such as site location for upload into fish plotters.	The commitment is secured through the Outline FLCP (Document Reference: J10). FLCP as part of an Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).
Notification of construction, maintenance and decommissioning activities will be issued via Notices to Mariners (NtMs), giving appropriate advance warning to fishing fleets.	To ensure that the fishing industry is fully informed in advance of any offshore activities, information is to be circulated via NtMs and Kingfisher Information Service of Seafish within time frames set out under the relevant condition of the deemed marine licences.	Notifications are secured as a condition in the deemed marine licences in the Draft DCO (Document Reference: C1).

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Measures	Justification	How the measure will be secured
Timely and efficient distribution of NtMs.	To ensure that the fishing industry is fully informed in advance of any offshore activities, at regular intervals.	Secured through a condition in the deemed marine licences (Document Reference: C1) and through the Outline FLCP (Document Reference: J10).
Use of advisory clearance distances and safety zones during construction and periods of major maintenance.	<p>To ensure navigational safety and minimise risk, 500 m safety zones will be implemented around wind turbines and OSPs during their construction.</p> <p>50 m safety zones will also be implemented around each item of infrastructure during the construction phase, where no construction works are taking place on that infrastructure (for example, where a wind turbine generator is incomplete or is in the process of being tested before commissioning).</p> <p>During the operations/maintenance phase, 500 m safety zones will also be implemented around any vessel involved in major maintenance works.</p> <p>Application and use of safety zones in accordance with the Safety Zone Statement (Document Reference J5).</p>	<p>The commitment to the use of advisory clearance distances and safety zones as set out in the Safety Zone Statement (Document Reference J5) is secured through the Outline FLCP (Document Reference: J10).</p> <p>An application for safety zones will be made under the Energy Act 2004.</p>
Development of and adherence to a FLCP, in accordance with the Outline FLCP that includes for the use of rolling advisory exclusion zones.	To ensure navigational safety, minimise risk of gear snagging and to avoid the entire Morgan Array Area being closed to fishing vessels during the construction phase, rolling advisory exclusion zones of 500 m will also be present around vessels installing inter-array cables and interconnector cables. As per the 'use of advisory clearance distances and safety zones during construction and periods of major maintenance' section of this table.	<p>The commitment is secured through the Outline FLCP (Document Reference: J10).</p> <p>FLCP as part of an Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
Development of and adherence to an Aids to Navigation Management Plan (ANMP) to ensure adequate navigational markers (including lighting), in accordance with the most recent relevant industry guidance and agreed prior to commencement of offshore construction.	<p>To ensure navigational safety and minimise risk of gear snagging, suitable Aid to Navigation (AtoN) lighting and marking of the Morgan Array Area shall be undertaken complying with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendations G1162 (IALA, 2021), to be finalised and approved in consultation with MCA and Trinity House through the preparation of an AtoN Management Plan.</p> <p>Fog horns to alert vessels to the position of structures when visibility is poor.</p> <p>Wind turbine informal naming/associated markings shall not interfere with formal AtoN's.</p> <p>AIS transponders to be placed on periphery corner wind turbines.</p>	ANMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).

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Measures	Justification	How the measure will be secured
<p>Development and adherence to a CMS, including CSIP that details cable protection management and scour protection management, to outline cable burial depth, cable protection and monitoring of inter array and interconnector cables to reduce snagging risk.</p>	<p>To ensure navigational safety and minimise risk of gear snagging a cable specification and installation plan will be prepared (in line with consent conditions) prior to installation of the Morgan Generation Assets. This will include a detailed cable laying plan, including geotechnical data, cable laying techniques, cable protection, monitoring of cables. This will be informed by a Cable Burial Risk Assessment, which will include details on minimum target burial depths. Information distribution will be aimed to be provided no less than three days for notification of buried cables becoming exposed on or above the seabed to the regional fisheries contact and 24 hours for notification of damage to the Morgan Generation Assets.</p>	<p>CSIP as part of the CMS is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>Development of and adherence to a FLCP, in accordance with the Outline FLCP that includes for annual reviews for the first five years of the operations and maintenance phase, to review Vessel Monitoring System (VMS) data and landings data to identify whether there are any changes to fishing activity within and around the Morgan Array Area and where there is change to discuss with commercial fisheries stakeholders.</p>	<p>Gathering data on fishing activity within and around the Morgan Array Area during the operations and maintenance phase of the Morgan Generation Assets in order to contribute to the evidence base for commercial fishing activity and offshore wind.</p>	<p>The commitment is secured through the Outline FLCP (Document Reference: J10). FLCP as part of an Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>Compliance with dropped objects procedures. All dropped objects must be reported to the MMO using the Dropped Object Procedure Form.</p>	<p>Compliance with dropped objects procedures which covers reporting and where necessary recovery of dropped objects to ensure navigational safety and minimise risk of gear becoming lost or damaged due to snagging.</p>	<p>Secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>Development of and adherence to a Decommissioning Programme.</p>	<p>To ensure navigational safety and minimise risk of gear snagging and to satisfy the requirements of the Energy Act 2004.</p>	<p>Decommissioning Programme secured through a requirement in the draft DCO (Document Reference C1).</p>

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Measures	Justification	How the measure will be secured
<p>Development of, and adherence to, an Offshore EMP, which includes a Marine Pollution Contingency Plan (MPCP).</p>	<p>Development of an Offshore EMP that details minimum environmental management requirements expected of the Applicant and all contractors and subcontractors, to ensure accidental pollution into the marine environment is minimised, through the development and adherence of a Marine Pollution Contingency Plan, for approval prior to commencement of construction.</p> <p>Measures will be adopted to ensure that the potential for release of pollutants from construction, and operations and maintenance, and decommissioning activities is minimised, which will include accidental spills planning, response and notification requirements.</p>	<p>MPCP as part of the Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>'As-laid' co-ordinates of the cable route shall be recorded and submitted to the UK Hydrographic Office (UKHO) and KIS-ORCA Service. 'As-laid' cables shall be marked on Admiralty Charts and fisherman's awareness charts (paper and electronic format).</p>	<p>To ensure navigational safety and minimise risk of gear snagging, 'as-laid' co-ordinates of the cable route shall be recorded and submitted to the UKHO and KIS-ORCA Service. 'As-laid' cables shall be marked on Admiralty Charts and fisherman's awareness charts (paper, electronic and plotter format).</p>	<p>The commitment is secured through the Outline FLCP (Document Reference: J10).</p> <p>FLCP as part of an Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>
<p>Development of, and adherence to, an Offshore EMP that includes a Fisheries liaison and co-existence plan (FLCP) that sets out use of guard vessels where required.</p>	<p>Where cable exposures exist during the operational and maintenance phase, which would result in significant risk, guard vessels will be used where appropriate until the risk has been mitigated by burial and/or other protection methods, ensuring navigational safety and minimising the potential risk of gear snagging.</p> <p>Guard vessels facilitate engagement with commercial fisheries stakeholders during specific project works, maximising awareness of temporary hazards and reducing potential for interactions between the commercial fishing activity and the Morgan Generation Assets.</p> <p>All efforts will be made to ensure that consideration is given to the use of regional fishing industry vessels for any guard duties.</p>	<p>The commitment is secured through the Outline FLCP (Document Reference: J10).</p> <p>FLCP as part of an Offshore EMP is secured within the deemed marine licences of the Draft DCO (Document Reference: C1).</p>

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6.8 Assessment of significant effects

6.8.1.1 The potential impacts on commercial fisheries of the construction, operations and maintenance, and decommissioning phases of the Morgan Generation Assets have been assessed. The potential impacts arising from these different phases of the Morgan Generation Assets are listed in Table 6.12, along with the MDS against which each potential impact has been assessed.

6.8.1.2 A description of the potential significance of effect on commercial fisheries receptors caused by each identified impact is provided below. Due to the seasonality of activities of the different fishing fleets, the impacts are presumed to occur during the peak activity periods for each receptor group.

6.8.1 Loss or restricted access to fishing grounds

6.8.1.1 The construction, operations and maintenance, and decommissioning phases of the Morgan Generation Assets may lead to loss or restricted access to fishing grounds.

6.8.1.2 The MDS is represented by the maximum number of advisory safety zones around infrastructure and installation vessels during construction and decommissioning, and by the maximum amount of infrastructure during the operations and maintenance phase plus any additional, temporary safety zones around vessels undertaking major maintenance works.

Construction phase

6.8.1.3 During construction of the Morgan Generation Assets, it is proposed that temporary 500 m safety zones will be present around vessels installing wind turbines including foundations and OSPs. It is proposed that rolling advisory exclusion zones of 500 m will also be present around vessels installing inter-array cables and interconnector cables. The loss or restricted access to fishing grounds created by such exclusion zones will be gradual as the presence of infrastructure increases. Temporary restrictions to fishing activity and/or anchoring, will also be required in areas where full cable burial to target depth has not yet been achieved and/or surface-laid cable exists (prior to cover by external cable protection). In such areas of temporarily shallow-buried/surface-laid cable, the restricted areas will be monitored by guard vessels (as outlined within Table 6.14 and secured within the outline FLCP (J10).

6.8.1.4 Construction of the Morgan Generation Assets will also involve seabed preparation activities, comprising of sandwave and boulder clearance for wind turbines including foundations, OSP, inter-array cables and interconnector cables throughout the Morgan Array Area.

6.8.1.5 A description of the significance of effect upon commercial fisheries receptors as a result of this potential impact is given below.

Magnitude of impact

Offshore static gear vessels

6.8.1.6 Offshore static gear vessels are active across the commercial fisheries study area, including the Morgan Array Area. Project-specific consultation has established that these are predominantly English vessels targeting crab and whelk. VMS data indicates that there is a large spatial extent of fishing effort by offshore static gear vessels (>15 m vessels) within the commercial fisheries study area. VMS data also indicates that within the Morgan Array Area, static gear activity (>15m vessels) was concentrated

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within the southeast part, between 2016 to 2020, with higher densities observed between 2018 to 2020.

6.8.1.7 This receptor group will be affected by construction works at the Morgan Array Area, with the construction phase having an anticipated duration of up to four years (including seabed preparation). However, during this period, fishing activity will only be excluded from discrete spatial areas (i.e. only discrete sections of the Morgan Array Area will be subject to temporary restrictions at any one time). Since any temporary advisory 500 m safety zones around vessels undertaking installation will be applied on a rolling basis, the area of exclusion is assessed as representing between 5-10 % of the annual value of landings for vessels in this receptor group.

6.8.1.8 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than four years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly, but be of low magnitude, as it is judged that construction would only affect an area from which a minor proportion of the receptor group's commercial annual value of landings is caught. The magnitude of impact for this receptor is therefore considered to be **low**.

Beam trawl vessels

6.8.1.9 Project-specific consultation established that approximately one English and approximately six Belgian beam trawl vessels operate within the commercial fisheries study area. Only the English beam trawl vessel operates within the Morgan Array Area itself. This is at a relatively low level and generally only within the northeast section of the Morgan Array Area and only during the Spring period. Whilst operating within the commercial fisheries study area, the Belgian beam trawl vessels mostly trawl east of the Morgan Array Area predominantly targeting sole and plaice. All of these vessels fish within the wider Irish Sea, and not only within the commercial fisheries study area, highlighting their nomadic nature.

6.8.1.10 This receptor group will be affected by construction works at the Morgan Array Area (duration of up to four years, including seabed preparation). Although this receptor group is active within the Morgan Array Area, fishing activity will only be excluded from discrete spatial areas (i.e. only discrete sections of the Morgan Array Area will be subject to temporary restrictions at any one time, via temporary 500m safety zones around major installation vessels). Loss of, or restricted access to, fishing grounds during the construction phase is, therefore, assessed to have a predicted loss of <5 % of this receptor's annual value of landings.

6.8.1.11 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged construction would only affect an area from which a very small proportion of the receptor group's commercial annual value of landings is caught. The magnitude of impact for this receptor is, therefore, deemed as **negligible**.

Scallop vessels – Scottish west coast

6.8.1.12 Landing statistics indicate that the commercial fisheries study area was particularly important to Scottish west coast scallopers during the period 2012 to 2022, with 11 scallop vessels based in Annan, Ballantrae and Kirkcudbright particularly active. Through close liaison with stakeholders (SFF, SWFPA and WCSP), project-specific consultation established that, although queen scallop populations are present throughout the Morgan Array Area, the west section of the Morgan Array Area is

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considered to be the most important ground; with August to December being particularly important months. These vessels also target king scallop within the Morgan Array Area, with November to May being a key period within the year.

- 6.8.1.13 This receptor group will be affected by construction works at the Morgan Array Area (duration of up to four years, including seabed preparation). During the construction phase, fishing activity will only be excluded from discrete spatial areas (i.e. only sections of the Morgan Array Area will be subject to temporary restrictions, via temporary 500 m safety and/or exclusion zones around major installation vessels). This limited area of exclusion for fishing activity is assessed as only resulting in a loss of between 5-10 % of the annual value of landings for vessels in this receptor group.
- 6.8.1.14 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly but be of low magnitude, as it is judged construction would only affect an area from which a minor proportion of the receptor group's commercial annual value of landings is caught. The magnitude of impact for this receptor is therefore deemed as **low**.

Scallop vessels – Isle of Man

- 6.8.1.15 Feedback from project-specific consultation has established that, at the time of writing, there are 55 vessels licenced to fish for king scallop in Isle of Man waters (29 of which are Isle of Man registered vessels). Of these, 36 can also fish for queen scallops (25 of which are Isle of Man registered vessels). Due to the size and capacity of the Manx vessels, it is expected that the majority of these vessels will not fish beyond the Manx 12 nm. The majority of these vessels have a licence for both king and queen scallop.
- 6.8.1.16 Fisheries monitoring has recorded 2 Manx vessels large enough to operate outside of the Manx Territorial Sea. Consultation with stakeholders has established that Isle of Man vessels that operate beyond the Manx 12 nm limit generally deploy Newhaven dredges to target king scallop. Landing statistics (2012 to 2022) indicate that Isle of Man scallop vessels almost exclusively operate out of ICES Rectangle 37E5, with effort in 36E5 recorded to a lesser degree. King scallop (dredge) swept area (km²) data (2017 to 2023) (inclusive of all dredge vessels licenced to fish for king scallop in Isle of Man waters), indicate that although highest levels of activity can generally be observed within the Isle of Man 12 nm limit and to the west of the Morgan Array Area, relatively high levels of activity can also be observed to overlap with the northwestern part of the Morgan Array Area.
- 6.8.1.17 This receptor group will be affected by construction works at the Morgan Array Area (duration of up to four years, including seabed preparation). When considering the above, and the fact that fishing activity for this receptor would only be excluded from discrete spatial areas during the construction phase (i.e. only sections of the Morgan Array Area will be subject to temporary 500 m safety/exclusion zone restrictions), loss or restricted access to fishing grounds is assessed as representing between 5-10 % of the annual value of landings for vessels within this receptor group.
- 6.8.1.18 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly but be of low magnitude, as it is judged construction would only affect an area from which a minor proportion of the receptor group's commercial annual value of landings is caught. The magnitude of impact for this receptor is deemed as **low**.

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Other scallop vessels

- 6.8.1.19 Feedback, via detailed consultation with fisheries stakeholders and analyses of official datasets indicates that this receptor group predominantly constitutes vessels from the Republic of Ireland and Northern Ireland, plus a small number of more nomadic vessels from Wales and southwest England. While landing statistics indicate the relative importance of scallop within the commercial fisheries study area, remote monitoring has established that these vessels are highly nomadic, often pass through the Morgan Array Area in transit to fish other areas of the Irish Sea, and target scallop across a relatively wide area offshore.
- 6.8.1.20 This receptor group will be affected by construction works at the Morgan Array Area (duration of up to four years, including seabed preparation). Fishing activity would only be excluded from discrete spatial areas during the construction phase. Loss or restricted access to fishing grounds during construction is, therefore, assessed as representing <5 % of the annual value of landings for this receptor group.
- 6.8.1.21 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged construction would only affect an area from which a very small proportion of the receptor group's commercial annual value of landings is caught. The magnitude of impact is, therefore, considered as **negligible**.

Herring vessels

- 6.8.1.22 Feedback from project-specific consultation has established that, at the time of writing, the herring fishery in the region is comprised of three pelagic trawlers from Northern Ireland and two from England. Landings statistics indicate that within the commercial fisheries study area, this receptor group almost exclusively operates within ICES Rectangle 37E5, in which a relatively small, northwest section of the Morgan Array Area is located. The Douglas Bank herring fishery, positioned within ICES Rectangle 37E5, overlaps with the northwest section of the Morgan Array Area; and is subject to annual closure between 21 September and 15 November. Landings statistics indicate that August and September are the most important months for the herring fishery.
- 6.8.1.23 This receptor group will be affected by construction works at the Morgan Array Area (duration of up to four years, including seabed preparation). During the construction phase, fishing activity will only be excluded from discrete spatial areas (i.e. only sections of the Morgan Array Area will be subject to temporary restrictions, via temporary 500 m safety and/or exclusion zones around major installation vessels). In light of this, the extent of the Morgan Array Area positioned within ICES Rectangle 37E5, and the relatively short time period in which this fishery is active (August to September) within the commercial fisheries study area, loss or restricted access to fishing grounds during construction is assessed as representing <5 % of the annual value of landings for this receptor group.
- 6.8.1.24 The impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than four years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged construction would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered to be **negligible**.

Sensitivity of the receptor

Offshore static gear vessels

6.8.1.25 This commercial fisheries receptor comprises larger offshore vessels (>12 m) that deploy static gear within a wider part of the Irish Sea than inshore static gear vessels. VMS data identified that these vessels have been observed within various areas of the commercial fisheries study area and are active within the southwest of the Morgan Array Area. This receptor group has the ability to fish a wider area than any areas they may be temporarily excluded from during construction works.

6.8.1.26 Offshore static gear vessels are deemed to be of high spatial adaptability, moderate spatial tolerance and moderate recoverability. The sensitivity of the receptor is, therefore, considered to be **low**.

Beam trawl vessels

6.8.1.27 This commercial fisheries receptor group generally constitutes larger beam trawl vessels (>12 m) from Belgium and the south coast of England that are active within the commercial fisheries study area. The baseline review process established that only the south west coast vessels operate within the Morgan Array Area at a relatively low level, and generally only within the northeast section during the Spring period. Despite effort within the northeast section being observed to a relatively low degree, this activity occurs relatively consistently throughout the study period (2009 to 2020). This receptor group has the ability to fish numerous grounds within the wider Irish Sea and beyond.

6.8.1.28 Beam trawl vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Scallop vessels – Scottish west coast

6.8.1.29 This commercial fisheries receptor group generally constitutes larger vessels (>12 m) from the Scottish west coast, deploying dredge gear and targeting queen and king scallop. Although vessels within this receptor group exhibit a relatively high operational range, they possess limited spatial tolerance, due to their high dependence upon the commercial fisheries study area for queen scallop dredging. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear.

6.8.1.30 Scottish west coast scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor is therefore, considered to be **medium**.

Scallop vessels – Isle of Man

6.8.1.31 Within the commercial fisheries study area, according to landing statistics during the study period (2012 to 2022), this receptor group almost exclusively operates out of ICES Rectangle 37E5 and 36E5, with relatively high levels of activity observed to overlap with the northwestern section of the Morgan Array Area. Dependence on the commercial fisheries study area can be observed (and confirmed via consultation) for Isle of Man vessels targeting queen scallop (while deploying dredges and otter trawls within Manx Territorial Waters) and king scallop (while deploying dredges within Manx Territorial Waters and areas beyond in UK waters). This receptor group, therefore, exhibits limited spatial adaptability and spatial tolerance. It has also been established that vessels within this receptor group possess a limited ability to deploy alternative gear.

6.8.1.32 It is noted, however, that the Isle of Man Government administers a robust Scallop Long-Term Management Plan (LTMP) within its territorial waters. The fishery is highly

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regulated and, whilst access is non-discriminatory by way of nationality or home port, eligibility to participate is determined on the basis of a number of factors including historic track record and vessel characteristics. At the time of writing, there are 55 vessels licenced to fish for king scallop in Isle of Man waters (29 of which are Isle of Man registered vessels). Of these, 36 can also fish for queen scallops (25 of which are Isle of Man registered vessels).

- 6.8.1.33 Isle of Man scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor is therefore, considered to be **medium**.

Other scallop vessels

- 6.8.1.34 As discussed, this receptor group comprises nomadic scallop vessels, that are often observed transiting through the Morgan Array Area to other parts of the wider Irish Sea. The receptor group exhibits an extensive operational range and is able to mitigate loss or restricted access to fishing grounds through its spatial tolerance.

- 6.8.1.35 Other scallop vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of this receptor is, therefore, considered **negligible**.

Herring vessels

- 6.8.1.36 As discussed, this receptor group comprises vessels from England and Northern Ireland, that target herring through deploying pelagic trawls and seines. Within the commercial fisheries study area, this fishery almost exclusively operates out of ICES Rectangle 37E5, in which a relatively small, northwest section of the Morgan Array Area is positioned. The fishery runs from August to September annually (Figure 6.5), while the herring start to aggregate prior to spawning (Duncan and Emmerson, 2018). This receptor group operates within the commercial fisheries study area for only a relatively short duration and is likely to operate across numerous other fishing grounds throughout the remainder of the year. The receptor group exhibits an extensive operational range and possesses an ability to target other pelagic species through deployment of alternative gear. This is likely to mitigate loss or restricted access to fishing grounds during construction of the Morgan Generation Assets.

- 6.8.1.37 Herring vessels are deemed to be of high spatial adaptability, moderate spatial tolerance, and high recoverability. The sensitivity of this receptor is, therefore, considered to be **low**.

Significance of the effect

- 6.8.1.38 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.15.

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Table 6.15: Magnitude, sensitivity and impact significance relating to loss or restricted access to fishing grounds during construction of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Low	Low	Negligible
Beam trawl vessels	Negligible	Negligible	Negligible
Scottish west coast scallop vessels	Low	Medium	Minor
Isle of man scallop vessels	Low	Medium	Minor
Other scallop vessels	Negligible	Negligible	Negligible
Herring vessels	Negligible	Low	Negligible

Operations and maintenance phase

6.8.1.39 During the operations and maintenance phase of the Morgan Generation Assets, commercial fishing activity may be affected via long-term loss or restricted access to fishing grounds, and the associated reduction in revenue due to the presence of project infrastructure for the lifetime of the Project. This impact is dependent on the location of the receptor's fishing grounds, and also the spatial extent of potential fishing grounds lost. Loss of fishing grounds/reduced access via repair/remediation events of project infrastructure during operations and maintenance and over the project life-time, are assessed separately in section 6.8.3.

Magnitude of impact

6.8.1.40 Existing UK legislation does not prohibit commercial fishing within operational offshore wind farms and for some sites that have fixed foundation options (e.g. jackets – three legged, jackets – four-legged, suction bucket three-legged jacket and suction bucket four-legged jacket and monopiles), commercial fishing has continued during this phase. For example, towed demersal fishing has occurred within the Walney 4 Extension Wind Farm since it has been operational, which could be partly attributed to layout of the wind turbines which facilitates vessels to safely fish within the boundary of the wind farm (Dunkley and Solandt, 2022).

6.8.1.41 A study investigating the impact of the Westernmost Rough Offshore Wind Farm on commercial crustacean stock within its array area found that offshore static gear vessels were able to fish between wind turbines (spacing of 1,000 m) and, therefore, continue their activity within the array during the operations and maintenance phase (Roach and Cohen, 2015). Post construction fish surveys undertaken on Westernmost Rough Offshore Wind Farm highlighted that landings per unit effort were consistent with pre-construction site investigation surveys and catches per unit effort of lobsters increased post-construction (Roach *et al.*, 2022).

6.8.1.42 Post construction fish surveys undertaken on the Barrow Offshore Wind Farm demonstrated that it is feasible to tow beam trawl gear between the wind turbines of the wind farm (Gray *et al.*, 2016). Remote monitoring of fishing activity has confirmed that mobile gear vessels fish within operational wind farms in the Irish Sea. Trial areas for the use of static commercial fishing gear within the Hywind Floating Offshore Wind Farm, based on safety parameters and a minimum distance of 200 m to a turbine and dynamic sections of the export/inter-array cables and 50 m away from all other subsea

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infrastructure, allowed the safe operation of the static gear and sufficient room to manoeuvre for a 30 m fishing vessel (Wright et al., 2023).

- 6.8.1.43 The potential maximum number of wind turbines within the Morgan Array Area is 96, while the minimum spacing between wind turbines is 1,400 m and the minimum spacing between rows of wind turbines is also 1,400 m. During project-specific consultation, information was provided by commercial fisheries stakeholders with regard to their preference of minimum spacing between wind turbines that would allow for continued fishing within the Morgan Array Area, as summarised within the magnitude section below. Differences in preference of wind turbine spacing by different fisheries operators are in part attributable to different attitudes to risk, as well as different operating requirements associated with gear width when actively fishing.
- 6.8.1.44 To reduce loss or restricted access to fishing grounds and to promote co-location and co-existence during the operations and maintenance phase, a SMZ is to be implemented over areas of core scallop grounds within the Morgan Array Area, while a roughly north – south alignment of wind turbines and array cables, where possible, has also been committed to (as discussed with commercial fisheries stakeholders via project-specific consultation). These commitments and the minimum extent of the SMZ are detailed and committed to within the Outline FLCP (Document Reference J10).
- 6.8.1.45 With respect to the inter array and interconnector cables within the Morgan Array Area, it is assumed that during the operations and maintenance phase, all cables will either be buried, or have external cable protection that will have sloped sides to minimise risk of snagging. Therefore, there will be no material loss of fishing grounds and fishing will be able to continue normally. The only exception with respect to the inter array and interconnector cables within the Morgan Array Area will be any temporary (advisory) 500 m safety zones, that will be implemented around any large vessels undertaking cable repair/remediation events.
- 6.8.1.46 Measures adopted as part of the Morgan Generation Assets, as outlined in Table 6.14, will minimise the impact of the loss, or restricted access to, fishing grounds during the operations and maintenance phase. A dedicated FLO will also be appointed to communicate timings and location of any maintenance works with the commercial fishing industry.
- 6.8.1.47 A number of fleets from the UK and other nationalities operate within the commercial fisheries study area. The impact is predicted to be of regional spatial extent, of relevance to international fishing fleets, and of long-term duration, as it will directly affect fleets across the 35-year design life of the Morgan Generation Assets.

Offshore static gear vessels

- 6.8.1.48 During project-specific consultation, this receptor group confirmed that they would fish within operational arrays, for example they fish within both Walney and Burbo Bank offshore wind farms. However, these static gear vessels lay gear in a north - south alignment within the Morgan Array Area, which is the only orientation possible due to tides in the region; if wind turbines were set out in this layout, this receptor group would be able to fish between a minimum spacing of 1,400 m between wind turbines and 1,400 m between wind turbines in a row. A study investigating the impact of the Westernmost Rough Offshore Wind Farm on commercial crustacean stock within its array area found that offshore static gear vessels were able to fish between wind turbines (spacing of 1,000 m, Dong Energy Power, 2009) and, therefore, continue their activity within the Array Area during the operations and maintenance phase (Roach and Cohen, 2015).

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- 6.8.1.49 This receptor group will lose access to discrete areas as a result of project infrastructure: up to a maximum of 96 wind turbines including foundations, with a seabed footprint of up to 735,488 m² (inclusive of scour protection); up to four OSPs with a seabed footprint of 24,964 m² (inclusive of scour protection). Due to the nature of the fishing gear, this receptor group is not expected to be affected by the cable protection and cable crossings within the Morgan Array Area.
- 6.8.1.50 As highlighted above (paragraph 6.8.1.48), fishing by this receptor group could continue between wind turbines with a minimum spacing of 1,400 m, if such wind turbines were set out in a north - south orientation that is compatible with the alignment of static gear deployment in the region (deployment is limited to such an alignment, due to tides in the region, as established via project-specific consultation). To reduce loss or restricted access to fishing grounds during the operations and maintenance phase and promote co-existence, the Applicant has committed to implementing such an orientation of wind turbines, where possible, within the Morgan Array Area, which is committed to within the Outline FLCP (Document Reference J10). Presuming fishing by this receptor group can continue within the Morgan Array Area, the loss or restricted access to fishing grounds is, therefore, assessed as representing <5 % of the annual value of landings for vessels in this receptor group.
- 6.8.1.51 In light of the above, the impact is predicted to be of local spatial extent, long term duration, intermittent, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that project infrastructure would only affect an area from which a very small proportion (<5 %) of the receptor group's commercial annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Beam trawl vessels

- 6.8.1.52 The presence of the Morgan Array Area is expected to restrict the baseline operation of this receptor group (this does not apply for Belgian beam trawl vessels which have confirmed they do not actively fish within the Morgan Array Area). Project-specific consultation established that the minimum spacing of wind turbines, outlined in the MDS table (minimum spacing of 1,400 m between wind turbines and 1,400 m between wind turbines in a row), would allow beam trawl vessels from the south west coast of England to continue trawling within the Morgan Array Area. Project-specific consultation also established that these vessels fish within the wider Irish Sea and not only within the Morgan Array Area. The baseline review process established that these vessels operate within the Morgan Array Area at a relatively low level, and generally only within the northeast section during the Spring period. It is important to note, however, that this activity within the Morgan Array Area has been observed at a relatively consistent level across the study period (2009 to 2020). Higher levels of fishing activity have been observed in areas outside the Morgan Array Area, to the east; and also to the southwest, south of the Isle of Man
- 6.8.1.53 Even though the minimum spacing between wind turbines is such that continued trawling should be possible, risk still exists from shallow burial of any east – west aligned inter array cables. The Morgan Generation Assets will seek to bury these cables to a depth that will enable trawling to take place over them, but in areas of shallow/non-burial, external cable protection may be required. Consideration will be given to cable protection, maximising the potential for co-existence.
- 6.8.1.54 This receptor group will lose access to discrete areas as a result of project infrastructure: up to a maximum of 96 wind turbines, with a seabed footprint of up to 735,488 m² (inclusive of scour protection); up to four OSPs with a seabed footprint of 24,964 m² (inclusive of scour protection). Due to the nature of the fishing gear (e.g.

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limited bottom contact with use of the SumWing), this receptor group is not expected to be affected by the cable protection and cable crossings within the Morgan Array Area.

- 6.8.1.55 Presuming that fishing by this receptor group could continue within the Morgan Array Area, the loss or restricted access to fishing grounds is, therefore, assessed as representing <5 % of the annual value of landings for vessels in this receptor group.
- 6.8.1.56 In light of the above, the impact is predicted to be of local spatial extent, long term duration, intermittent, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged project infrastructure would only affect an area from which a very small proportion (<5 %) of the receptor group's commercial annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Scallop vessels – Scottish west coast

- 6.8.1.57 The west section of the Morgan Array Area is located within established queen scallop grounds, on which this receptor group is highly reliant for its annual income (as described above for the construction phase). The presence of the Morgan Array Area is expected to restrict the operation of this scallop dredge fishery. Project-specific consultation established that the minimum spacing of wind turbines, outlined in the MDS table (minimum spacing of 1,400 m between wind turbines and 1,400 m between wind turbines in a row), is lower than the preferred distance between wind turbines outlined by the Scottish west coast scallopers (2,800 m to 3,700 m). These scallop vessels tow gear in a north - south alignment within the Morgan Array Area, which is the only orientation possible due to tides in the region. Stakeholders also confirmed that gear penetration varied between 0.05-0.25 m, so adequate burial of inter-array cables is important to allow these vessels to continue fishing within the Morgan Array Area; the MDS for burial depths of inter-array cables is 0.5 m.
- 6.8.1.58 Based on the minimum spacing of 1,400 m between wind turbines and 1,400 m between wind turbines in a row, and assuming that all E-W aligned inter-array cables are buried to the target depth of at least 0.5 m, fishing could continue within the Morgan Array Area for this receptor group but would be restricted. This receptor group will also lose access to discrete areas as a result of project infrastructure: up to a maximum of 96 wind turbines including foundations, a seabed footprint of up to 735,488 m² (inclusive of scour protection), up to four OSPs with a seabed footprint of 24,964 m² (inclusive of scour protection), up to 39 km of inter-array cable protection (up 3 m height); up to 10 inter-array crossings (up to 4 m height); up to 12 km of interconnector cable protection (up 3 m height) and up to 10 interconnector crossings (up to 3 m height).
- 6.8.1.59 The amount and location of external cable protection within the Morgan Array Area will be designed to increase potential for co-existence.
- 6.8.1.60 While taking into account the significant reliance upon the Morgan Array Area by this receptor group (potentially accounting for approximately 40 % of their total annual landings) to reduce the potential for project infrastructure to severely restrict fishing and to promote co-existence and co-location, the Applicant has committed to a Scallop Mitigation Zone (SMZ) that covers areas of core scallop grounds located within the western section of the Morgan Area Array. The alignment of the inter array cables is also to be orientated in a north – south orientation, as far as reasonably possible. This orientation of inter array cables and wind turbines within the Morgan Array Area is compatible with tows exhibited by vessels within this receptor group (as established via project-specific consultation feedback) and as such, dredging is expected to continue in the SMZ during the operations and maintenance phase of the Morgan

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Generation Assets, reducing the magnitude of impact. Such commitments, including the minimum extent of the SMZ is committed to within the Outline FLCP (Document Reference J10). Through allowing dredging to continue within areas of core scallop grounds of the SMZ, the operations and maintenance phase of the Morgan Generation Assets could lead to a reduction of 5-10 % in annual landings.

- 6.8.1.61 In light of the above, the impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, and be of low magnitude, as it is judged that it would affect an area from which a minor proportion (5-10 %) of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **low**.

Scallop vessels – Isle of Man

- 6.8.1.62 During project-specific consultation, this receptor group indicated that they would fish within operational wind farms, as the gear type used and vessel size facilitates sufficient manoeuvrability; therefore, they would be able to continue fishing within the Morgan Array Area with the minimum spacing of 1,400 m between wind turbines and 1,400 m between wind turbines in a row.
- 6.8.1.63 This receptor group will lose access to discrete areas as a result of project infrastructure: up to a maximum of 96 wind turbines including foundations, with a seabed footprint of up to 735,488 m² (inclusive of scour protection) and up to four OSPs with a seabed footprint of 24,964 m² (inclusive of scour protection). Due to the nature of the fishing gear, this receptor group is not expected to be affected by the cable protection and cable crossings within the Morgan Array Area.
- 6.8.1.64 As described in paragraph 6.8.1.15, the Applicant has committed to a SMZ that covers areas of core scallop grounds located within the western section of the Morgan Array Area, in a roughly north – south orientation (committed to within the Outline FLCP) (Document Reference J10). It is assumed, therefore, that fishing by this receptor group will, continue within the SMZ and other areas of the Morgan Array Area, mitigating the loss or restricted access to fishing grounds and promoting co-existence during the operations and maintenance phase. The area unsuitable for continued fishing is assessed as representing <5 % of the annual value of landings for vessels in this receptor group.
- 6.8.1.65 In light of the above, the impact is predicted to be of local spatial extent, long term duration, intermittent, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged construction would only affect an area from which a very small proportion (<5 %) of the receptor group's commercial annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Other scallop vessels

- 6.8.1.66 During project-specific consultation, this receptor group indicated that they would fish within operational wind farms and they would be able to continue fishing within the Morgan Array Area with the minimum spacing of 1,400 m between wind turbines and 1,400 m between wind turbines in a row, although they highlighted safety concerns due to restricted operations between wind turbines.
- 6.8.1.67 This receptor group will also lose access to discrete areas as a result of project infrastructure: up to a maximum of 96 wind turbines, a seabed footprint of up to 735,488 m² (inclusive of scour protection); up to four OSPs with a seabed footprint of 24,964 m² (inclusive of scour protection); up to 32.5 km of inter-array cable protection (up 3 m height); up to 67 inter-array crossings (up to 4 m height); up to 10 km of interconnector cable protection (up 3 m height) and up to 10 interconnector crossings

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(up to 3 m height). up to 72 km of export cable protection (up 3 m height) and up to 24 export cable crossings (up to 3 m height).

External cable protection within the Morgan Array Area will be designed to increase potential for co-existence.

6.8.1.68 The Applicant has committed to a SMZ that covers areas of core scallop grounds located within the western section of the Morgan Array Area, in a roughly north – south orientation. As it is assumed that fishing will continue within the SMZ and other areas of the Morgan Array Area during the operations and maintenance phase, the area unsuitable for continued dredging is assessed as representing <5 % of the annual value of landings for vessels in this receptor group.

6.8.1.69 In light of the above, the impact is predicted to be of local spatial extent, long term duration, intermittent, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged project infrastructure would only affect an area from which a very small proportion (<5 %) of the receptor group's commercial annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Herring Vessels

6.8.1.70 The presence of the Morgan Array Area is expected to restrict the baseline operation of this receptor group. During project-specific consultation, this receptor group indicated that they would be able to continue fishing within the Morgan Array Area. Therefore, during the operations and maintenance phase, the area unsuitable for continued fishing is assessed as only representing <5 % of the annual value of landings for vessels in this receptor group.

6.8.1.71 This receptor group will lose access to discrete areas as a result of project infrastructure: up to a maximum of 96 wind turbines including foundations, with a seabed footprint of up to 735,488 m² (inclusive of scour protection) and up to four OSPs with a seabed footprint of 24,964 m² (inclusive of scour protection).

6.8.1.72 Due to the nature of the fishing gear, this receptor group is not expected to be affected by the cable protection and cable crossings within the Morgan Array Area.

6.8.1.73 In light of the above, the impact is predicted to be of local spatial extent, long term duration, intermittent, and with high reversibility due to the temporary nature of any maintenance works. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged construction would only affect an area from which a very small proportion of the receptor group's commercial annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered to be **negligible**.

Sensitivity of receptor

6.8.1.74 The sensitivity of the commercial fisheries receptors is the same as that presented for the detailed assessment above for construction (paragraph 6.8.1.25 to 6.8.1.35). The following sections provide a summary of the sensitivity for each commercial fisheries receptor during the operations and maintenance phase.

Offshore static gear vessels

6.8.1.75 Offshore static gear vessels are deemed to be of high spatial adaptability, moderate spatial tolerance and moderate recoverability. The sensitivity of the receptor is, therefore, considered to be **low**.

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Beam trawl vessels

- 6.8.1.76 Beam trawl vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Scallop vessels – Scottish west coast

- 6.8.1.77 As previously discussed, this receptor group has limited spatial tolerance due to significant dependence upon the commercial fisheries study area for queen scallop dredging. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear.

- 6.8.1.78 Scottish west coast scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor is therefore, considered to be **medium**.

Scallop vessels – Isle of Man

- 6.8.1.79 Isle of Man scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of this receptor is, therefore, considered to be **medium**.

Other scallop vessels

- 6.8.1.1 As discussed, this receptor group comprises nomadic scallop vessels that are often observed transiting through the Morgan Array Area to other parts of the wider Irish Sea. The receptor group exhibits an extensive operational range and is able to reduce loss or restricted access to fishing grounds through their spatial tolerance.

- 6.8.1.2 Other scallop vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of this receptor is, therefore, considered **negligible**.

Herring vessels

- 6.8.1.3 As discussed, this receptor group operates within the commercial fisheries study area for only a relatively short duration (August to September) and is likely to operate across numerous other fishing grounds throughout the remaining year. The receptor group exhibits an extensive operational range and possesses an ability to target other pelagic species through deployment of alternative gear.

- 6.8.1.4 Herring vessels are deemed to be of high spatial adaptability, moderate spatial tolerance and high recoverability. The sensitivity of this receptor is, therefore, considered to be **low**.

Significance of effect

- 6.8.1.5 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.16.

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Table 6.16: Magnitude, sensitivity and impact significance relating to loss or restricted access to fishing grounds during the operations and maintenance phase of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Negligible	Negligible
Scallop vessels - Scottish west coast	Low	Medium	Minor
Scallop vessels - Isle of Man	Negligible	Medium	Negligible
Other scallop vessels	Negligible	Negligible	Negligible
Herring vessels	Negligible	Low	Negligible

Decommissioning phase

Magnitude of impact

6.8.1.6 The magnitude of impacts on the commercial fisheries receptors is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will not be greater than for the construction phase. This is summarised in Table 6.17.

Sensitivity of receptor

6.8.1.7 The sensitivity of the commercial fisheries receptors is the same as that presented for the detailed assessment above for construction (paragraph 6.8.1.25 to 6.8.1.35), as the impacts of the decommissioning phase will be not greater than for the construction phase. This is summarised in Table 6.17.

Significance of effect

6.8.1.8 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.17.

Table 6.17: Magnitude, sensitivity and impact significance relating to loss or restricted access to fishing grounds during decommissioning of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Low	Low	Negligible
Beam trawl vessels	Negligible	Negligible	Negligible
Scottish west coast scallop vessels	Low	Medium	Minor
Isle of man scallop vessels	Low	Medium	Minor
Other scallop vessels	Negligible	Negligible	Negligible
Herring vessels	Negligible	Low	Negligible

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6.8.2 Displacement of fishing activity into other areas

- 6.8.2.1 The construction, operations and maintenance, and decommissioning phases of the Morgan Generation Assets may lead to displacement of fishing activity into other areas, as a result of loss or restricted access to fishing grounds. This displacement can create potential adverse effects on existing fisheries in the areas that vessels are displaced into.
- 6.8.2.2 The MDS is represented by the maximum duration and extent of fishing exclusion around infrastructure and installation vessels during construction and decommissioning, and by the maximum amount of infrastructure during operations and maintenance. The MDS is summarised in Table 6.12 and is the same as for the “Loss or restricted access to fishing grounds” impact.

Construction phase

Magnitude of impact

Offshore static gear vessels

- 6.8.2.3 The potential impact on offshore static gear vessels from the displacement of mobile vessels deploying beam trawl and scallop dredges from the Morgan Array Area, into the areas where offshore static gear vessels set static gear (pots), could cause conflict between these different receptor groups. However, assuming that fishing will only be excluded within the 500 m safety zones around major installation vessels, and that such displacement will be temporary and limited to discrete spatial areas at any one time, the extent of displacement is judged to be negligible. Displacement of fishing activity during construction is, therefore, predicted to result in a loss of <5 % of this receptor’s annual value of landings.
- 6.8.2.4 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would only affect an area from which a very small proportion of the receptor group’s annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered as **negligible**.

Beam trawl vessels

- 6.8.2.5 The potential impact on beam trawl vessels from the displacement of scallop vessels deploying dredges and offshore static gear, from the Morgan Array Area, into the areas where beam trawl vessels are active, could cause conflict between these different receptor groups. During construction, fishing activity will only be excluded from discrete spatial areas (i.e. only sections of the Morgan Array Area will be subject to temporary restrictions around major installation vessels). Therefore, in light of the temporary nature of the works and the short to medium term duration (i.e. less than five years), the displacement of fishing activity during construction results in a predicted loss of <5 % of this receptor’s annual value of landings.
- 6.8.2.6 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would only affect an area from which a very small proportion of the receptor group’s annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

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Scallop vessels – Scottish west coast

- 6.8.2.7 Displacement of offshore static gear, beam trawl vessels and other scallop receptor gear from the Morgan Array Area into areas of Scottish west coast scallop activity could cause conflict between these different receptor groups. However, the extent of this displacement is judged to be limited due to fishing activity only being excluded from discrete spatial areas during the construction phase (i.e. around major installation vessels). The displacement of fishing activity during construction therefore results in a predicted loss of <5 % of this receptor's annual value of landings.
- 6.8.2.8 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Scallop vessels – Isle of Man

- 6.8.2.9 Displacement of other fishing vessels from the Morgan Array Area into areas where Isle of Man scallop vessels fish could cause conflict between these different receptor groups. However, displacement of non-UK vessels, such as Belgian beam trawl vessels or Irish scallop vessels, into the Manx Territorial Sea (within 12 nm) within ICES Rectangles 37E5 and 36E5 will not occur, as non-UK vessels do not have access to this area, under the London Fisheries Convention 1964. Displacement of Scottish west coast scallop vessels and other scallopers into the Manx Territorial Sea is also limited, as under the Isle of Man Scallop LTMP, access to king scallop dredging is limited to vessels under 221 kW, unless they possess Grandfather Rights. These Grandfather Rights will be terminated by November 2024 under the LTMP. Only vessels which possess a UK and Isle of Man fishing vessel licence with scallop entitlement, may fish for scallops within Manx Territorial waters. The fishery is highly regulated and, whilst access is non-discriminatory by way of nationality or home port, eligibility to participate is determined on the basis of a number of factors including historic track record and vessel characteristics. At the time of writing, there are 55 vessels licenced to fish for king scallop in Isle of Man waters (29 of which are Isle of Man registered vessels). Of these, 36 can also fish for queen scallops (25 of which are Isle of Man registered vessels)..
- 6.8.2.10 Displacement of other fishing vessels from the Morgan Array Area into areas where Isle of Man scallop vessels fish beyond the Manx 12 nm limit could cause conflict between these different receptor groups. However, the extent of this displacement is judged to be limited due to fishing activity only being excluded from discrete spatial areas during the construction phase (i.e. around major installation vessels). The displacement of fishing activity during construction therefore results in a predicted loss of <5 % of this receptor's annual value of landings.
- 6.8.2.11 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

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Other scallop vessels

- 6.8.2.12 Displacement of fishing activity into areas where other scallop vessels are active during construction is predicted to result in a loss of <5 % of this receptor's annual value of landings, due to the highly nomadic nature of this receptor group and exclusion being limited to discrete areas.
- 6.8.2.13 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered as **negligible**.

Herring vessels

- 6.8.2.14 Landing statistics indicate that the commercial fisheries study area was particularly important to vessels landing herring throughout the study period (2010 to 2020), with August and September being particularly important months. Landing statistics also indicate that within the commercial fisheries study area, this receptor group almost exclusively operates within ICES Rectangle 37E5, in which a relatively small, northwest section of the Morgan Array Area is positioned (an approximate total area within ICES Rectangle 37E5 of 11 %, excluding the Isle of Man).
- 6.8.2.15 The majority of ICES Rectangle 37E5 is positioned within the Manx Territorial Sea (within 12nm), with the baseline review process having established that this receptor group is predominantly active within this inshore region. Displacement of non-UK fishing vessels, such as Belgian beam trawls, from the Morgan Generation Assets into other inshore areas within ICES Rectangle 37E5, is unlikely as non-UK vessels do not have access to this area under the London Fisheries Convention 1964. Displacement of Scottish west coast scallop vessels, and other scallopers, into the Manx Territorial Sea is also limited, as under the Isle of Man Scallop LTMP, access to king scallop dredging is limited to vessels under 221kW, unless they possess Grandfather Rights. These Grandfather Rights will be terminated by November 2024 under the LTMP. Only vessels which possess a UK and Isle of Man fishing vessel licence with scallop entitlement, may fish for scallops within Manx Territorial waters. Conflict between the Isle of Man scallop vessels and herring vessels receptor groups is possible; although this is limited by differing key periods of activity between the king scallop and herring fishery (section 6.4.4), and the discrete spatial areas of exclusion during construction. The displacement of fishing activity during construction, therefore, results in a predicted loss of <5 % of this receptor's annual value of landings.
- 6.8.2.16 The impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than four years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered to be **negligible**.

Norway lobster (*Nephrops*) vessels

- 6.8.2.17 While landing statistics indicate the relative importance of *Nephrops* within the commercial fisheries study area, remote monitoring, project-specific feedback and analysis of VMS data has established that these vessels mainly target the *Nephrops* grounds off the Cumbria coast (NW IFCA, 2022). These grounds are largely located within the English inshore region (within the 12 nm boundary) and do not overlap with the Morgan Array Area. Vessels are predominantly from England, Northern Ireland

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and Scotland, as established by MMO and EU STECF landings data, and project-specific consultation.

- 6.8.2.18 The *Nephrops* grounds off the Cumbria coast are comprised of fine or silty mud that allow for *Nephrops* populations to thrive (NW IFCA, 2022). In contrast, king and queen scallop usually reside in firm sand, or fine or sandy gravel (MarLIN, 2022); thus, they are unlikely to be found in abundance within the *Nephrops* grounds of the Cumbria coast. This is also supported through analysis of VMS dredging data (2009 to 2020), where limited to no existing scallop dredging activity has been observed within the vicinity of the *Nephrops* grounds. Therefore, displacement of scallop dredging vessels from the Morgan Array Area into the *Nephrops* grounds is considered unlikely.
- 6.8.2.19 Similarly, beam trawls, targeting plaice, commonly occur over sandy sediment types, as opposed to muddy sediment, while commercial fishing of sole is usually limited to deeper offshore waters where sole tend to school in groups, which allow for catches on a commercial scale (NW IFCA, 2022). Non-UK vessels, such as the Belgian beam trawlers, do not have access to English inshore areas under the London Fisheries Convention 1964, with access, therefore, limiting displacement of this fishery into the *Nephrops* grounds.
- 6.8.2.20 Displacement of offshore static gear vessels from the Morgan Array Area into the *Nephrops* grounds of the Cumbria coast is considered possible. However, it is understood that a spatial ‘gentleman’s agreement’ exists between the different gear types in operation within the commercial fisheries study area, and it is assumed that this would continue during the construction phase of the Morgan Generation Assets. Therefore, it is anticipated that displacement of offshore static gear vessels from the Morgan Array Area into the *Nephrops* grounds is not likely to occur.
- 6.8.2.21 On the basis of the above, and the discrete spatial areas of exclusion during construction, the displacement of fishing activity during construction, therefore, results in a predicted loss of <5 % of this receptor’s annual value of landings.
- 6.8.2.22 The impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than four years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group’s annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered to be **negligible**.

Sensitivity of receptor

Offshore static gear vessels

- 6.8.2.23 Displacement of mobile vessels, such as those that deploy beam trawls and dredges, into the areas where the offshore static gear vessels set pots could cause displacement of fishing activity for this receptor group. However, this receptor group has the ability to fish a wider area than those areas they may be temporarily excluded from during construction works.
- 6.8.2.24 Offshore static gear vessels are deemed to be of high spatial adaptability, moderate spatial tolerance and moderate recoverability. The sensitivity of the receptor is, therefore, considered to be **low**.

Beam trawl vessels

- 6.8.2.25 Beam trawl vessels exhibit extensive operational ranges and they have the ability to fish numerous grounds within the wider Irish Sea. Some Belgian beam trawl vessels

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that have been recorded within the commercial fisheries study area, have also been observed to deploy alternative gear types.

- 6.8.2.26 Beam trawl vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Scallop vessels – Scottish west coast

- 6.8.2.27 As previously discussed, this receptor group has limited spatial tolerance due to significant dependence upon the commercial fisheries study area for queen scallop dredging. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear.

- 6.8.2.28 Scottish west coast scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor is therefore, considered to be **medium**.

Scallop vessels – Isle of Man

- 6.8.2.29 Within the commercial fisheries study area, according to landing statistics, this receptor group almost exclusively operated out of ICES Rectangles 37E5 and 36E5 throughout the study period (2012 to 2022). Dependence on the commercial fisheries study area can be observed (and confirmed via consultation) for Isle of Man vessels targeting queen scallop (while deploying dredges and otter trawls within Manx Territorial Waters) and king scallop (while deploying dredges within Manx Territorial Waters and areas beyond in UK waters).

- 6.8.2.30 Isle of Man scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor is, therefore, considered to be **medium**.

Other scallop vessels

- 6.8.2.31 As discussed, this receptor group comprises nomadic scallop vessels that are often observed transiting through the Morgan Array Area to other parts of the wider Irish Sea. The receptor group exhibits an extensive operational range and is able to reduce loss or restricted access to fishing grounds through their spatial tolerance.

- 6.8.2.32 Other scallop vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of this receptor is, therefore, considered **negligible**.

Herring vessels

- 6.8.2.33 As discussed, this receptor group operates within the commercial fisheries study area for only a relatively short duration (August to September) and is likely to operate across numerous other fishing grounds throughout the remaining year. The receptor group exhibits an extensive operational range and possesses an ability to target other pelagic species through deployment of alternative gear.

- 6.8.2.34 Herring vessels are deemed to be of high spatial adaptability, moderate spatial tolerance and high recoverability. The sensitivity of this receptor is, therefore, considered to be **low**.

Norway lobster (*Nephrops*) vessels

- 6.8.2.35 As discussed, this receptor group comprises vessels predominantly from England, Northern Ireland and Scotland, that deploy demersal trawls/seine and otter trawls to target *Nephrops*. The fishery predominantly targets the *Nephrops* grounds of the Cumbria coast (NW IFCA, 2022), which do not overlap with the Morgan Array Area.

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This receptor group possesses the ability to deploy alternative gear, that targets other demersal species.

- 6.8.2.36 *Nephrops* vessels are deemed to be of high spatial adaptability, high spatial tolerance and high recoverability. The sensitivity of this receptor is, therefore, considered to be **negligible**.

Significance of effect

- 6.8.2.37 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.18.

Table 6.18: Magnitude, sensitivity and impact significance relating to displacement of fishing activity into other areas during construction of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Negligible	Negligible
Scallop vessels - Scottish west coast	Negligible	Medium	Negligible
Scallop vessels – Isle of Man	Negligible	Medium	Negligible
Other scallop vessels	Negligible	Negligible	Negligible
Herring vessels	Negligible	Low	Negligible
Norway lobster (<i>Nephrops</i>) vessels	Negligible	Negligible	Negligible

Operations and maintenance phase

Magnitude of impact

Offshore static gear vessels

- 6.8.2.38 Displacement of mobile vessels deploying beam trawl and scallop dredges during the operations and maintenance phase from the Morgan Array Area, into the areas where offshore static gear vessels set pots, could cause conflict between these different receptor groups. However, it is noted that the other mobile gear receptor groups target a relatively large area in comparison to the Morgan Array Area. It is also currently understood that a spatial ‘gentleman’s agreement’ exists between the different gear types in operation in this area and it is assumed that this would continue during the operations and maintenance phase. Therefore, displacement of fishing activity during the operations and maintenance phase is predicted to result in a predicted loss of <5 % of this receptor’s annual value of landings.
- 6.8.2.39 In light of the above, the impact is predicted to be of local spatial extent, long term duration, intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group’s annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

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Beam trawl vessels

- 6.8.2.40 Project-specific consultation established that these vessels operate within the Morgan Array Area at a relatively low level, and generally only within the northeast section during the Spring period. While direct displacement caused by possible wind turbine layout within the Morgan Array Area is minimal, as a result of their spatial preferences, displacement of other offshore vessels during the operations and maintenance phase from the Morgan Array Area into areas where beam trawl vessels operate, could cause conflict between these different receptor groups. However, project-specific consultation established that this receptor group fishes within the wider Irish Sea, and not specifically within the Morgan Array Area, highlighting their nomadic nature and relatively high operational range. Therefore, displacement of fishing activity during operations and maintenance results in a predicted loss of <5 % of this receptor's annual value of landings.
- 6.8.2.41 In light of the above, the impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Scallop vessels – Scottish west coast

- 6.8.2.42 Displacement of offshore static gear, beam trawl vessels and other scallop receptor gear from the Morgan Array Area into areas of Scottish west coast scallop activity could cause conflict between these different receptor groups. However, it is noted that the other mobile gear receptor groups and offshore static gear vessels target a relatively large area in comparison to the Morgan Array Area. It is also currently understood that a spatial 'gentleman's agreement' exists between the different gear types in operation in this area and it is assumed that this would continue during the operations and maintenance phase. Therefore, displacement of fishing activity during the operations and maintenance phase results in a predicted loss of <5 % of this receptor's annual value of landings.
- 6.8.2.43 In light of the above, the impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Scallop vessels – Isle of Man

- 6.8.2.44 Displacement of other fishing vessels from the Morgan Array Area into areas where Isle of Man Scallop vessels fish could create conflict. However, as previously discussed, displacement of non-UK vessels, such as Belgian beam trawl vessels or Irish scallop vessels, into the Manx Territorial Sea (within 12 nm), within the 36E5 will not happen as non-UK vessels do not have access to this area, under the London Fisheries Convention 1964. Displacement of Scottish west coast scallop vessels and other scallopers into the Manx Territorial Sea is also limited, as under the Isle of Man Scallop LTMP, access to king scallop dredging is limited to vessels under 221 kW, unless they possess Grandfather Rights. These Grandfather Rights will be terminated by November 2024 under the LTMP. Only vessels which possess a UK and Isle of Man fishing vessel licence with scallop entitlement may fish for scallops within Manx Territorial waters. The fishery is highly regulated and, whilst access is non-discriminatory by way of nationality or home port, eligibility to participate is determined

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on the basis of a number of factors including historic track record and vessel characteristics. At the time of writing, there are 55 vessels licenced to fish for king scallop in Isle of Man waters (29 of which are Isle of Man registered vessels). Of these, 36 can also fish for queen scallops (25 of which are Isle of Man registered vessels).

- 6.8.2.45 Displacement of other fishing vessels from the Morgan Array Area into areas where Isle of Man scallop vessels fish beyond the Manx 12 nm limit could cause conflict between these different receptor groups. However, it is noted that the other mobile gear receptor groups and offshore static gear vessels target a relatively large area in comparison to the Morgan Array Area. It is also currently understood that a spatial 'gentleman's agreement' exists between the different gear types in operation in this area and it is assumed that this would continue during the operations and maintenance phase. Therefore, displacement of fishing activity during the operations and maintenance phase results in a predicted loss of <5 % of this receptor's annual value of landings.
- 6.8.2.46 In light of the above, the impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Other scallop vessels

- 6.8.2.47 Displacement, during the operations and maintenance phase, of fishing activity into areas where this receptor group is active, is predicted to result in a loss of <5 % of this receptor's annual value of landings, due to the nomadic nature and relatively high operational range of the receptor.
- 6.8.2.48 In light of the above, the impact (via cable repair/remediation events), is predicted to be of local spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that construction would only affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact is, therefore, considered to be **negligible**.

Herring vessels

- 6.8.2.49 Landing statistics indicate that within the commercial fisheries study area, this receptor group almost exclusively operate within ICES Rectangle 37E5, in which a relatively small, northwest section of the Morgan Array Area is positioned (an approximate total area within ICES Rectangle 37E5 of 10 %, excluding the Isle of Man); with August and September being particularly important months. The majority of ICES Rectangle 37E5 is positioned within the Manx Territorial Sea (within 12 nm), with the baseline review process having established that this receptor group is predominantly active within this inshore region.
- 6.8.2.50 Displacement of non-UK fishing vessels, such as Belgian beam trawls, from the Morgan Array Area into other inshore areas within ICES Rectangle 37E5, is unlikely, as non-UK vessels do not have access to this area under the London Fisheries Convention 1964. Displacement of Scottish west coast scallop vessels, and other scallopers, into the Manx Territorial Sea is also limited, as under the Isle of Man Scallop LTMP, access to king scallop dredging is limited to vessels under 221kW, unless they possess Grandfather Rights. These Grandfather Rights will be terminated by November 2024 under the LTMP. Only vessels which possess a UK and Isle of Man fishing vessel licence with scallop entitlement, may fish for scallops within Manx

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Territorial waters. Conflict between the Isle of Man scallop vessels, and herring vessels receptor groups is possible; although, this is limited by differing key periods of activity between the king scallop and herring fishery (section 6.4.4). The displacement of fishing activity during the operations and maintenance phase, therefore, results in a predicted loss of <5 % of this receptor groups annual value of landings.

6.8.2.51 The impact is predicted to be of local to regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered to be **negligible**.

Norway lobster (*Nephrops*) vessels

6.8.2.52 Remote monitoring, project-specific feedback and analysis of VMS data has established that this receptor group predominantly targets the *Nephrops* grounds off the Cumbria coast (NW IFCA, 2022). These grounds are located predominantly within the English inshore region (within the 12 nm boundary) and do not overlap with the Morgan Array Area.

6.8.2.53 As described during the construction phase of this impact, the *Nephrops* grounds of the Cumbria coast are comprised of fine or silty mud that is optimal for thriving *Nephrops* habitat (NW IFCA, 2022). In contrast, such sediment composition is suboptimal for king and queen scallop, and these are, therefore, unlikely to be found in abundance within the *Nephrops* grounds of the Cumbria coast. This is also supported through analysis of VMS dredging data (2009 to 2020), where limited to no existing scallop dredging activity has been observed within the vicinity of the *Nephrops* grounds. Therefore, displacement of scallop dredging vessels from the Morgan Array Area into the *Nephrops* grounds is considered unlikely.

6.8.2.54 Similarly, beam trawl targeted plaice are commonly found in sandy sediment types, as opposed to muddy sediment, and commercial fishing of sole is usually limited to deeper offshore waters, where sole tend to school in groups, which allows for catches on a commercial scale (NW IFCA, 2022). Non-UK vessels, such as the Belgian beam trawlers, do not have access to English inshore areas under the London Fisheries Convention 1964; therefore, limiting displacement of this fishery into the *Nephrops* grounds.

6.8.2.55 Displacement of offshore static gear vessels from the Morgan Array Area into the *Nephrops* grounds of the Cumbria coast is considered possible. However, it is currently understood that a spatial 'gentleman's agreement' exists between the different gear types in operation in this area, and it is assumed that this would continue during the operations and maintenance phase of the Morgan Generation Assets. Therefore, it is anticipated that displacement of offshore static gear vessels from the Morgan Array Area into the *Nephrops* groups is not likely to occur.

6.8.2.56 Therefore, the displacement of fishing activity during the operations and maintenance phase results in a predicted loss of <5 % of this receptor groups annual value of landings.

6.8.2.57 The impact is predicted to be of local to regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of negligible magnitude, as it is judged that it would affect an area from which a very small proportion of the receptor group's annual value of landings is caught. The magnitude of impact for this receptor is, therefore, considered to be **negligible**.

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Sensitivity of receptor

6.8.2.58 The sensitivity of the receptor groups remains the same as described for the construction phase of this impact and is summarised in Table 6.19.

Significance of effect

6.8.2.59 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.19.

Table 6.19: Magnitude, sensitivity and impact significance relating to displacement of fishing activity into other areas during the operations and maintenance phase of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Negligible	Negligible
Scallop vessels - Scottish west coast	Negligible	Medium	Negligible
Scallop vessels - Isle of Man	Negligible	Medium	Negligible
Other scallop vessels	Negligible	Negligible	Negligible
Herring vessels	Negligible	Low	Negligible
Norway lobster (<i>Nephrops</i>) vessels	Negligible	Negligible	Negligible

Decommissioning phase

Magnitude of impact

6.8.2.60 The magnitude of impacts on the commercial fisheries receptor groups remains commercial fisheries receptors is the same as that presented for the detailed assessment above for the construction phase, as the impacts of the decommissioning phase will not be greater than for the construction phase. This is summarised in Table 6.20.

Sensitivity of receptor

6.8.2.61 The sensitivity of the commercial fisheries receptors is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will be not greater than for the construction phase. This is summarised in Table 6.18.

Significance of effect

6.8.2.62 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.20.

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Table 6.20: Magnitude, sensitivity and impact significance relating to displacement of fishing activity into other areas during decommissioning of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Negligible	Negligible
Scallop vessels - Scottish west coast	Negligible	Medium	Negligible
Scallop vessels - Isle of Man	Negligible	Medium	Negligible
Other scallop vessels	Negligible	Negligible	Negligible
Herring vessels	Negligible	Low	Negligible
Norway lobster (<i>Nephrops</i>) vessels	Negligible	Negligible	Negligible

6.8.3 Interference with fishing activity

6.8.3.1 The construction, operations and maintenance and decommissioning phases of the Morgan Generation Assets may lead to interference with fishing activity, as a result of increased vessel traffic caused by vessels associated with the Morgan Generation Assets or changes to shipping routes.

6.8.3.2 The MDS is represented by the maximum amount of infrastructure and number of vessel transits which could result in the greatest potential for interference and is summarised in Table 6.12. Full consideration of effects on commercial fishing vessels while transiting, for example collision and allision, is discussed in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

Construction phase

6.8.3.3 During the construction of the Morgan Generation Assets (duration of up to four years), there will be a total of 69 construction vessels on site at any one time. There will be up to 1,929 installation vessel movements (return trips) during construction.

Magnitude of impact

6.8.3.4 Measures outlined in section 6.7 will minimise the impact of interference with fishing activity during construction of the Morgan Generation Assets. These include notifying the commercial fishing industry in advance of any offshore activities through Notices to Mariners, Kingfisher Bulletins and ongoing liaison by the CFLO and FIR.

6.8.3.5 Although construction vessel traffic will add to the existing level of shipping activity in the area, there are already moderate levels of vessel traffic that exist in the area and there is co-existence of fishing vessels with other marine traffic. Fishing vessels engaged in fishing must exhibit appropriate lighting; and have the right of way over most other marine traffic. Construction vessels in transit would also be fully compliant with the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS).

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- 6.8.3.6 For all commercial fisheries receptor groups, the impact is predicted to be of local spatial extent, short to medium term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptors directly. The magnitude of impact is, therefore, considered to be **low** for commercial fisheries receptor groups.

Sensitivity of receptor

- 6.8.3.7 For this impact, the sensitivity has been defined by the vulnerability of the receptor group to potential interference with their fishing activity.

Offshore static gear vessels

- 6.8.3.8 This commercial fisheries receptor comprises larger offshore vessels (>12 m) that deploy static gear and has high spatial adaptability due to the extent of its operational range. These vessels will only be affected by construction vessels within the Morgan Array Area. The marker buoys deployed by the offshore static gear vessels are vulnerable to potential interference by construction vessels, due to their poor visibility. The offshore static gear vessels are deemed to be of medium vulnerability. The sensitivity of the receptor is, therefore, considered to be **medium**.

Beam trawl vessels

- 6.8.3.9 This commercial fisheries receptor group is constituted generally of larger beam trawl vessels (>12 m) from the south west coast of England and Belgium (although noted that Belgian beam trawl vessels have confirmed they do not actively fish within the Morgan Array Area); these vessels exhibit high spatial adaptability, due to extensive operational ranges. It is expected that these vessels will be in a position to avoid the Morgan Generation Assets construction vessels. Construction vessels in transit would be fully compliant with COLREGS, so would not pose a risk to towed fishing gear or require fishing vessels engaged in fishing to alter their course. The beam trawl vessels are deemed to be of negligible vulnerability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Scallop vessels – Scottish west coast

- 6.8.3.10 This commercial fisheries receptor group is constituted generally of larger vessels (>12 m) from the Scottish west coast. It is expected that these vessels will be in a position to avoid the Morgan Generation Assets construction vessels. Construction vessels in transit would be fully compliant with COLREGS, so would not pose a risk to towed fishing gear or require fishing vessels engaged in fishing to alter their course. These scallop vessels are deemed to be of negligible vulnerability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Scallop vessels – Isle of Man

- 6.8.3.11 This commercial fisheries receptor group is constituted generally of larger vessels (>10 m) from the Isle of Man. It is expected that these vessels will be in a position to avoid the Morgan Generation Assets construction vessels. Construction vessels in transit would be fully compliant with COLREGS, so would not pose a risk to towed fishing gear or require fishing vessels engaged in fishing to alter their course. These scallop vessels are deemed to be of negligible vulnerability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Other scallop vessels

- 6.8.3.12 This receptor group comprises nomadic scallop vessels that are often observed transiting through the Morgan Array Area to other parts of the wider Irish Sea. This commercial fisheries receptor group is constituted generally of larger vessels (>12 m) from Ireland and Northern Ireland. It is expected that these vessels will be in a position

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to avoid the Morgan Generation Assets construction vessels. Construction vessels in transit would be fully compliant with COLREGS, so would not pose a risk to towed fishing gear or require fishing vessels engaged in fishing to alter their course. These scallop vessels are deemed to be of negligible vulnerability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Herring vessels

- 6.8.3.13 This receptor group is comprised generally of larger vessels (>10m) that deploy pelagic trawls and seine nets and operate within the commercial fisheries study area for only a relatively short duration throughout the year (August to September). These vessels exhibit an extensive operational range, are likely to operate out of numerous other fishing grounds throughout the remaining year and possess an ability to target other pelagic species through deployment of alternative gear. Construction vessels in transit would be fully compliant with COLREGS, so would not pose a risk to towed fishing gear or require fishing vessels engaged in fishing to alter their course. These herring vessels are deemed to be of negligible vulnerability. The sensitivity of the receptor is, therefore, considered to be **negligible**.

Significance of effect

- 6.8.3.14 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.21.

Table 6.21: Magnitude, sensitivity and impact significance relating to interference with fishing activity during construction of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Low	Medium	Minor
Beam trawl vessels	Low	Negligible	Negligible
Scallop vessels - Scottish west coast scallop vessels	Low	Negligible	Negligible
Scallop vessels - Isle of Man scallop vessels	Low	Negligible	Negligible
Other scallop vessels	Low	Negligible	Negligible
Herring vessels	Low	Negligible	Negligible

Operations and maintenance phase

- 6.8.3.15 During the operations and maintenance phase of the Morgan Generation Assets there will be a total of up to 16 operations and maintenance vessels on site at any one time. There will be up to 719 operations and maintenance vessel movements (return trips) during operational lifetime of 35-years.

Magnitude of impact

- 6.8.3.16 Measures outlined in section 6.7 will minimise the impact of interference with fishing activity during operations and maintenance of the Morgan Generation Assets. The commercial fishing industry will be fully informed in advance of any offshore activities through Notices to Mariners, Kingfisher Bulletins and ongoing liaison by the CFLO and FIR.

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- 6.8.3.17 Although operations and maintenance vessel traffic will add to the existing level of shipping activity in the area, there are already moderate levels of vessel traffic in the area, and there is co-existence of fishing vessels with other marine traffic. Fishing vessels engaged in fishing must exhibit appropriate lighting and have the right of way over most other marine traffic. Operation and maintenance vessels in transit would also be fully compliant with COLREGS.
- 6.8.3.18 With regard to any cable repair/remediation events undertaken by project vessels during the operations and maintenance phase across the Morgan Array Area, this would lead to some temporary, spatially limited impacts where vessels would be requested to avoid such areas for the duration of the works.
- 6.8.3.19 For all commercial fisheries receptor groups, the impact is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptors directly. The magnitude of impact is, therefore, considered to be **low** for all other commercial fisheries receptor groups, as summarised in Table 6.22.

Sensitivity of receptor

- 6.8.3.20 The sensitivity of the receptor groups remains the same as described for the construction phase of this impact and summarised in Table 6.22.

Significance of effect

- 6.8.3.21 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.22.

Table 6.22: Magnitude, sensitivity and impact significance relating to interference with fishing activity during the operations and maintenance phase of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Low	Medium	Minor
Beam trawl vessels	Low	Negligible	Negligible
Scallop vessels - Scottish west coast	Low	Negligible	Negligible
Scallop vessels - Isle of Man	Low	Negligible	Negligible
Other scallop vessels	Low	Negligible	Negligible
Herring vessels	Low	Negligible	Negligible

Decommissioning phase

- 6.8.3.22 During the decommissioning phase the changes would gradually decrease from the operations and maintenance MDS as the need for project-related vessels is reduced.

Magnitude of impact

- 6.8.3.23 The magnitude of impacts on the commercial fisheries receptors is the same as that presented for the detailed assessment above for the construction phase, as the impacts of the decommissioning phase will be not greater than for the construction phase. This is summarised in Table 6.23.

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Sensitivity of receptor

6.8.3.24 The sensitivity of the commercial fisheries receptors is the same as that presented for the detailed assessment above for the construction phase, as the impacts of the decommissioning phase will not be greater than for the construction phase. This is summarised in Table 6.23.

Significance of effect

6.8.3.25 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.23.

Table 6.23: Magnitude, sensitivity and impact significance relating to interference with fishing activity during decommissioning of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Low	Medium	Minor
Beam trawl vessels	Low	Negligible	Negligible
Scallop vessels - Scottish west coast	Low	Negligible	Negligible
Scallop vessels - Isle of Man	Low	Negligible	Negligible
Other scallop vessels	Low	Negligible	Negligible
Herring vessels	Low	Negligible	Negligible

6.8.4 Temporary increase in steaming distances

6.8.4.1 The construction and decommissioning phases of the Morgan Generation Assets may lead to increased steaming times and distances for commercial fishing vessels, which could increase operational costs. This impact has been scoped out for operations and maintenance phase of the Morgan Generation Assets (see section 6.6.2), as fishing vessels will be able to transit through to/from adjacent fishing grounds.

6.8.4.2 The MDS is represented by the maximum number of advisory safety zones around infrastructure and installation vessels during construction and decommissioning and is summarised in Table 6.12. Full consideration of effects on commercial fishing vessels while transiting, for example collision and allision, is discussed in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

Construction phase

6.8.4.3 There will be 500 m safety zones around vessels installing wind turbines including foundations and OSPs during their construction. There will also be a 50 m safety zone around each item of infrastructure during the construction phase when no construction works are taking place on that infrastructure (for example, where a wind turbine is incomplete or is in the process of being tested before commissioning). Rolling advisory safety zones of 500 m will be in place around vessels installing inter-array cables and interconnector cables.

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Magnitude of impact

- 6.8.4.4 Measures outlined in section 6.7 will minimise the impact of any increased steaming distances during construction. The commercial fishing industry will be fully informed in advance of any offshore activities through Notices to Mariners, Kingfisher Bulletins and ongoing liaison by the CFLO and FIR.
- 6.8.4.5 It is anticipated that transiting fishing vessels will only be required to take minor deviations, as impacts will be localised to the immediate area of construction and construction vessels, with the use of rolling construction zones.
- 6.8.4.6 The impact is predicted to be of local extent, short to medium term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is, therefore, considered to be **negligible** for all commercial fisheries receptor groups.

Sensitivity of receptor

- 6.8.4.7 All commercial fisheries receptor groups have operational ranges that are beyond that of the areas of construction, so have the ability to make deviations to transit routes. Providing that adequate notification is given, these fishing vessels will be in a position to avoid construction areas, with limited impact upon steaming times.
- 6.8.4.8 All other commercial fisheries receptor groups are deemed to be of low vulnerability, high spatial adaptability, high spatial tolerance and moderate recoverability to this impact. The sensitivity of all commercial fisheries receptors is, therefore, considered to be **low**.

Significance of effect

- 6.8.4.9 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.24.

Table 6.24: Magnitude, sensitivity and impact significance relating to temporary increase in steaming distances during construction of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Low	Negligible
Scallop vessels - Scottish west coast	Negligible	Low	Negligible
Scallop vessels - Isle of Man	Negligible	Low	Negligible
Other scallop vessels	Negligible	Low	Negligible
Herring vessels	Negligible	Low	Negligible

Decommissioning phase

Magnitude of impact

- 6.8.4.10 The magnitude of impact on commercial fisheries receptors is the same as that presented for the detailed assessment above for the construction phase, as increases

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in steaming distances during the decommissioning phase will not be greater than for the construction phase. The magnitude is therefore, considered to be **negligible** for all commercial fisheries receptor groups.

Sensitivity of receptor

6.8.4.11 The sensitivity of all commercial fisheries receptors is the same as that presented for the assessment above for the construction phase, as increases in steaming distances during the decommissioning phase will not be greater than for the construction phase. The sensitivity of all commercial fisheries receptors is therefore, considered to be **low**.

Significance of effect

6.8.4.12 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.25.

Table 6.25: Magnitude, sensitivity and impact significance relating to temporary increase in steaming distances during decommissioning of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Low	Negligible
Scallop vessels - Scottish west coast	Negligible	Low	Negligible
Scallop vessels - Isle of Man	Negligible	Low	Negligible
Other scallop vessels	Negligible	Low	Negligible
Herring vessels	Negligible	Low	Negligible

6.8.5 Loss or damage to fishing gear due to snagging

6.8.5.1 The construction, operations and maintenance and decommissioning of the Morgan Generation Assets may lead to loss or damage to fishing gear due to snagging. Snagging risks may occur as a result of infrastructure on the seabed, such as inter-array cables, interconnector cables and associated cable protection.

6.8.5.2 The MDS is represented by the maximum amount of infrastructure associated with the project and is summarised in Table 6.12. Safety risk for fishing vessels associated with potential gear snagging is assessed in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

Construction phase

6.8.5.3 The progressive installation of infrastructure during the construction phase of the Morgan Generation Assets would result in an increased potential for snagging risks to fishing vessels. These include risks associated with sub-surface infrastructure such as partially laid/surface-laid cables.

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Magnitude of impact

- 6.8.5.4 Measures outlined in section 6.7 will minimise the risks of snagging during construction. The commercial fishing industry will be fully informed of any potential snagging risks through Notices to Mariners, Kingfisher Bulletins and ongoing liaison by the CFLO and FIR. Use of advisory clearance distances and safety zones will minimise the risk of interaction between fishing vessels and project infrastructure, therefore reducing the risk of snagging. Where it is required, snagging risks such as surface-laid cable that has not yet had external cable protection applied or secondary burial works undertaken, will be marked by a guard vessel or navigational marker.

Offshore static gear vessels

- 6.8.5.5 This receptor group will be affected by construction works at the Morgan Array Area. As previously discussed for this receptor group, VMS data indicates relatively low levels of offshore static fishing gear in this area. Based on this, and on the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, it is considered likely that fishermen within this receptor group will operate appropriately (i.e. adhering to safety zones and advisory exclusion zones, and avoiding infrastructure under construction and cable protection at the defined location) given adequate notification of the locations of any snagging hazards; and are highly likely to avoid the infrastructure under construction and cable protection within the Morgan Array Area..

- 6.8.5.6 In light of the above, the impact is predicted to be of regional spatial extent, short to medium term duration (i.e. less than five years), intermittent and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore, considered to be **negligible**.

Beam trawl vessels

- 6.8.5.7 This receptor group will be affected by construction works within the Morgan Generation Assets. Project-specific consultation established that these vessels fish within the wider Irish Sea and not only within the commercial fisheries study area, highlighting their nomadic nature. The baseline review process established that these vessels operate within the Morgan Array Area at a relatively low level, and generally only within the northeast section during the Spring period. Based on this, and on the proposed measures adopted as part of the Morgan Generation Assets, and the commitments to follow standard protocols, it is considered likely that fishermen within this receptor group will operate appropriately (i.e. adhering to safety zones and advisory exclusion zones, and avoiding infrastructure under construction and cable protection at the defined location) given adequate notification of the locations of any snagging hazards; and are highly likely to avoid the infrastructure under construction and cable protection within the Morgan Array Area.

- 6.8.5.8 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore considered **negligible**.

Scallop vessels – Scottish west coast

- 6.8.5.9 This receptor group will be affected by construction works within the Morgan Generation Assets. Through close liaison with stakeholders (SFF, SWFPA and WCSP), project-specific consultation has established that Scottish west coast scallop vessels are active and rely heavily upon a west section of the Morgan Array Area for the dredging of queen scallop with August to December being particularly important

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months. These vessels also target king scallop within the Morgan Generation Assets with November to May being a key period within the year for this. However, based on the proposed measures adopted as part of the Morgan Generation Assets, and the commitments to follow standard protocols, it is considered likely that fishermen within this receptor group will operate appropriately (i.e. adhering to safety zones and advisory exclusion zones, and avoiding infrastructure under construction and cable protection at the defined location) given adequate notification of the locations of any snagging hazards; and are highly likely to avoid the infrastructure under construction and cable protection within the Morgan Array Area.

- 6.8.5.10 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore considered **negligible**.

Scallop vessels – Isle of Man

- 6.8.5.11 This receptor group will be affected by construction works within the Morgan Generation Assets. As previously discussed for this receptor group, landing statistics indicate that Isle of Man scallop vessels almost exclusively operate out of Rectangles 37E5 and 36E5, with effort in 36E5 recorded to a lesser degree. Fisheries monitoring has, to date, recorded 2 Manx vessels large enough to fish outside of the Manx 12nm. Based on this, and on the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, it is considered likely that fishermen within this receptor group will operate appropriately (i.e. adhering to safety zones and advisory exclusion zones, and avoiding infrastructure under construction and cable protection at the defined location) given adequate notification of the locations of any snagging hazards; and are highly likely to avoid the infrastructure under construction and cable protection within the Morgan Array Area.

- 6.8.5.12 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of impact is therefore considered **negligible**.

Other scallop vessels

- 6.8.5.13 This receptor group will be affected by construction works within the Morgan Generation Assets. While landing statistics indicate relative importance for scallop within the commercial fisheries study, remote monitoring has established that these vessels are highly nomadic, often pass through the Morgan Array Area in transit to fish other areas of the Irish Sea, and target scallop across a relatively wide area offshore. Based on this, and on the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, it is considered likely that fishermen within this receptor group will operate appropriately (i.e. adhering to safety zones and advisory exclusion zones, and avoiding infrastructure under construction and cable protection at the defined location) given adequate notification of the locations of any snagging hazards; and are highly likely to avoid the infrastructure under construction and cable protection within the Morgan Array Area.

- 6.8.5.14 The impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **negligible**.

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Herring vessels

- 6.8.5.15 This receptor group will be affected by construction works within the Morgan Generation Assets. As previously discussed, landing statistics indicate that this receptor group almost exclusively operates out of ICES Rectangle 37E5, in which a relatively small, northwest section of the Morgan Array Area is positioned. Landings are highest during August and September. Feedback from project-specific consultation has established that, at the time of writing, the fishery is constituted of three pelagic trawlers from Northern Ireland, and two from England. It is considered likely that fishermen within this receptor group will operate appropriately (i.e. adhering to safety zones and advisory exclusion zones, and avoiding infrastructure under construction at the defined location) given adequate notification of the locations of any snagging hazards; and are highly likely to avoid the infrastructure under construction within the Morgan Array Area
- 6.8.5.16 In light of the above, the impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than four years), intermittent and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of impact for this receptor group is, therefore, considered to be **negligible**.

Sensitivity of receptor

- 6.8.5.17 For this impact, the sensitivity has been defined by the vulnerability of the receptor group associated with snagging risks.

Offshore static gear vessels

- 6.8.5.18 This receptor group, comprising generally larger offshore vessels (>12 m), demonstrates high spatial adaptability and has the ability to fish a wider area than any areas that are subject to potential loss or damage to fishing gear due to snagging during construction works. The nature of static gear fishing, where gear is not towed and does not penetrate the seabed, means that the vulnerability of these receptor groups is low. It is acknowledged, however, that snagging still poses a risk to static gear vessels, for example when hauling gear. The sensitivity of the receptor is therefore, considered to be **low**.

Beam trawl vessels

- 6.8.5.19 This receptor group exhibits high spatial adaptability, due to extensive operational ranges and has the ability to fish numerous grounds within the wider Irish Sea and beyond; this receptor group therefore has the ability to fish a wider area than any areas that are subject to potential loss or damage to fishing gear due to snagging during construction works.
- 6.8.5.20 The nature of the gear deployed means that the vulnerability of this receptor group is medium, as the method of fishing by mobile gear vessels, means that vessels need to tow nets/trawls under significant power, and at defined speeds. The sensitivity of the receptor is therefore, considered to be **medium**.

Scallop vessels – Scottish west coast

- 6.8.5.21 Although vessels within this receptor group exhibit a relatively high operational range, they possess limited spatial tolerance due to their high dependence upon the commercial fisheries study area for queen scallop dredging, as previously discussed. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear.

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6.8.5.22 During consultation, this receptor group clarified that penetration of gear varied between 0.05-0.25 m. The nature and penetration depth of the gear deployed means that the vulnerability of this receptor group is high, and the method of fishing by scallop dredgers, means that vessels need to tow nets/trawls under significant power, and at defined speeds. The sensitivity of the receptor is considered to be **high**.

Scallop vessels – Isle of Man

6.8.5.23 This receptor group almost exclusively operates out of ICES Rectangles 37E5 and 36E5 and therefore, exhibits moderate spatial adaptability. Project-specific consultation indicates that vessels within this receptor group are dedicated scallop vessels, with limited ability to deploy alternative gear.

6.8.5.24 During consultation, fisheries stakeholders provided information on penetration depths of gear and requested a minimum burial depth of 1.5 m; penetration of gear depended on the gear type, with otter trawl gear and queen scallop dredge gear penetrating less than king scallop dredge gear. Vessels within this receptor group deploy both otter trawls and Newhaven dredges. The nature and penetration depth of Newhaven dredges means that the vulnerability of this receptor group is high, and the method of fishing by scallop dredgers, means that vessels need to tow nets/trawls under significant power, and at defined speeds.. The sensitivity of this receptor is considered to be **high**.

Other scallop vessels

6.8.5.25 As discussed, this receptor group comprises nomadic scallop vessels that are often observed transiting through the Morgan Array Area to other parts of the wider Irish Sea. The receptor group exhibits an extensive operational range and has the ability to fish a wider area than any areas that are subject to potential loss or damage to fishing gear due to snagging during construction works.

6.8.5.26 The nature of the gear deployed, means that the vulnerability of this receptor group is medium, as the method of fishing by mobile gear vessels, means that vessels need to tow nets/trawls under significant power, and at defined speeds. The sensitivity of this receptor is considered to be **medium**.

6.8.5.27 Herring vessels

6.8.5.28 As discussed, this receptor group comprises vessels that target herring from England and Northern Ireland, deploying pelagic trawls and seines. Within the commercial fisheries study area, this fishery almost exclusively operates out of ICES Rectangle 37E5, in which a relatively small, northwest section of the Morgan Array Area is positioned.

6.8.5.29 The nature of the gear deployed means that the vulnerability of this receptor group is negligible, as these vessels are mostly using pelagic trawls and seines which have no, or minimal, contact with the seabed. The sensitivity of the receptor is, therefore, considered to be **negligible**.

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Significance of effect

6.8.5.30 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.26.

Table 6.26: Magnitude, sensitivity and impact significance relating to loss or damage to fishing gear due to snagging during construction of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Medium	Negligible
Scallop vessels - Scottish west coast	Negligible	High	Minor
Scallop vessels - Isle of Man	Negligible	High	Minor
Other scallop vessels	Negligible	Medium	Negligible
Herring vessels	Negligible	Negligible	Negligible

Operations and maintenance phase

6.8.5.31 During the operations and maintenance phase of the Morgan Generation Assets, cables will be buried (where possible) to a minimum depth of 0.5 m, however there is the potential for inter-array cables and interconnector cables to become shallow-buried or exposed due to changes in seabed conditions.

6.8.5.32 Associated external cable protection could also present a snagging risk to fishing vessels: Up to 10 % of the inter-array cables (up to 39 km) may require external cable protection; and up to 20 % of the interconnectors (up to 12 km) may also require external cable protection. There will be a maximum of 10 inter-array cable crossings and up to 10 interconnector crossings, all of which will likely require external cable protection. Scour protection could also extend up to 21 m from each wind turbine structure to a height of 2.5 m above seabed level.

Magnitude of impact

6.8.5.33 Measures outlined in section 6.7 will minimise the risks of snagging during operations and maintenance.

6.8.5.34 Cables will be buried, where possible, to a minimum of 0.5 m to reduce the risk of snagging. If appropriate burial depth cannot be achieved, external cable protection may be required, the locations of which would be communicated to all commercial fisheries groups through Global Positioning System coordinates.

6.8.5.35 Cable protection shall be designed to minimise snagging hazards as far as possible, for example by minimising height above seabed, smooth and shallower profiles, grade used for rock placement, type of rock (e.g. smoother edges).

6.8.5.36 Project infrastructure, including the 'as-laid' coordinates of the inter-array cables and interconnector cables, shall be recorded and submitted to the United Kingdom Hydrographic Office (UKHO) and Kingfisher for inclusion on charts. The commercial fishing industry will be fully informed of any potential snagging risks through Notices to Mariners, Kingfisher Bulletins and ongoing liaison by the CFLO and FIR. Use of advisory clearance distances and safety zones during major maintenance periods will

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minimise the risk of interaction between fishing vessels and project infrastructure, therefore reducing the risk of snagging. Where it is deemed necessary, snagging risks will be marked by a guard vessel or navigational marker.

- 6.8.5.37 Based on the proposed measures adopted as part of the Morgan Generation Assets, and the commitments to follow standard protocols, it is anticipated that the magnitude for loss or damage to fishing gear due to snagging will be similar to that of the construction phase, as summarised in Table 6.27.

Sensitivity of receptor

- 6.8.5.38 The sensitivity of the receptor groups remains the same as described for the construction phase of this impact, as summarised in Table 6.27.

Significance of effect

- 6.8.5.1 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.27.

Table 6.27: Magnitude, sensitivity and impact significance relating to loss or damage to fishing gear due to snagging during the operations and maintenance phase of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Medium	Negligible
Scallop vessels - Scottish west coast	Negligible	High	Minor
Scallop vessels - Isle of Man	Negligible	High	Minor
Other scallop vessels	Negligible	Medium	Negligible
Herring vessels	Negligible	Negligible	Negligible

Decommissioning phase

Magnitude of impact

- 6.8.5.2 It is anticipated that the magnitude for loss or damage to fishing gear due to snagging will be the same, and likely less than for the construction phase, as summarised in Table 6.28.

Sensitivity of receptor

- 6.8.5.3 The sensitivity of all commercial fisheries receptors during decommissioning is deemed to be the same as for the construction phase, as summarised in Table 6.28.

Significance of effect

- 6.8.5.4 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.28.

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Table 6.28: Magnitude, sensitivity and impact significance relating to loss or damage to fishing gear due to snagging during decommissioning of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Low	Negligible
Beam trawl vessels	Negligible	Medium	Negligible
Scallop vessels - Scottish west coast	Negligible	High	Minor
Scallop vessels - Isle of Man	Negligible	High	Minor
Other scallop vessels	Negligible	Medium	Negligible
Herring vessels	Negligible	Negligible	Negligible

6.8.6 Potential impacts on commercially important fish and shellfish resources

6.8.6.1 The following potential impacts on fish and shellfish ecology via the construction, operations and maintenance, and decommissioning phases of the Morgan Generation Assets have been identified:

- Temporary habitat loss/disturbance
- Underwater sound impacting fish and shellfish receptors
- Increased suspended sediment concentrations (SSCs) and associated sediment deposition
- Long-term habitat loss
- Electromagnetic Fields (EMFs) from subsea electrical cabling
- Colonisation of hard structures
- Disturbance/remobilisation of sediment-bound contaminants
- Injury due to increased risk of collision with vessels.

6.8.6.2 These potential impacts on fish and shellfish ecology are assessed within Volume 2, Chapter 3: Fish and Shellfish Ecology of the Environmental Statement. The Morgan Generation Assets fish and shellfish ecology study area covers the east Irish Sea, extending from MHWS west from the Mull of Galloway in Scotland to the west tip of Anglesey, following the territorial waters/12 nm limit of the Isle of Man.

6.8.6.3 As discussed in Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement and Table 6.7, the following species are of commercial importance within the commercial fisheries study area and are, therefore, the focus of this assessment:

- Queen scallop
- King scallop
- Herring
- Lobster

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- Norway lobster (*Nephrops*)
- Sole
- Plaice
- Whelk.

6.8.6.4 Injury due to increased risk of collision with vessels has only been assessed for basking sharks and is therefore not considered within this commercial fisheries chapter (see Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement).

Construction phase

6.8.6.5 There is potential for the construction phase to have result in both adverse and/or beneficial effects on commercially important fish and shellfish populations. Adverse effects include behavioural changes or increases/declines in abundance, which could, therefore, potentially affect the commercial fisheries which target those species.

6.8.6.6 The fish and shellfish ecology assessment concluded that for all impacts during the construction phase of the Morgan Generation Assets, the effect will be of **minor adverse** significance for king and queen scallops, which is not significant in EIA terms. Therefore, no significant impact is predicted for the Scottish west coast, Isle of Man and other scallop vessels receptor groups.

6.8.6.7 The fish and shellfish ecology assessment concluded that for all impacts during the construction phase of the Morgan Generation Assets, the effect will be of **minor adverse** significance for European lobster and *Nephrops*, which is not significant in EIA terms. Therefore, no significant impact is predicted for the offshore static gear vessel receptor groups.

6.8.6.8 The fish and shellfish ecology assessment concluded that for underwater sound impacting fish and shellfish receptors during the construction phase of the Morgan Generation Assets, the effect will be of **moderate adverse** significance for herring, which is significant in EIA terms. Therefore, a significant impact is predicted for the herring vessels receptor group. This is due to the hearing sensitivity of herring, coupled with the presence of discrete high and low intensity spawning grounds within range of underwater sound levels which may give rise to behavioural effects. However, the fish and shellfish ecology assessment concluded that for all other impacts on herring during the construction phase of the Morgan Generation Assets, the effects will be of **minor adverse** significance and, therefore, no further significant impacts predicted for the herring vessels receptor group.

6.8.6.9 The fish and shellfish ecology assessment concluded that for all impacts during the construction phase of the Morgan Generation Assets, the effect will be of **minor adverse** significance for all other fish and shellfish ecology Important Ecological Features (IEFs), which is not significant in EIA terms. Therefore, no significant impact is predicted for the beam trawl vessels receptor groups, who predominantly target sole and plaice as well as other, demersal species.

Further mitigation and residual effect

6.8.6.10 The fish and shellfish ecology assessment concluded a significant effect to herring during the construction phase of the Morgan Generation Assets, as a result of underwater sound generated by piling during the herring spawning period (Volume 2, Chapter 3: Fish and Shellfish Ecology of the Environmental Statement). A significant impact is therefore predicted for the herring vessels receptor group. Further mitigation

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is proposed in the form of development of an outline Underwater Sound Management Strategy (Document Reference J13). This plan is proposed to be developed with stakeholder input post-consent and will be used to define appropriate measures to reduce the magnitude of effect to environmentally acceptable levels (in this case, negligible or low).

- 6.8.6.11 With the implementation of such a plan, the residual significance of effect to herring is anticipated to be minor adverse, which is not significant in EIA terms. Measures may include temporal and spatial planning of piling activities, and if required, will explore other measures such as noise abatement technology. An outline Underwater Sound Management Plan will be submitted with the Application (Document Reference J13), with the full document to be developed post-consent.

Operations and maintenance phase

- 6.8.6.12 There is potential for the operations and maintenance phase to result in adverse and/or beneficial effects on commercially important fish and shellfish populations. Adverse effects include behavioural changes or increases/declines in abundance, which could, therefore, potentially affect the commercial fisheries which target those species.
- 6.8.6.13 Overall, the fish and shellfish ecology assessment concluded that the significance of effect for temporary habitat loss/disturbance, increased SSCs and associated sediment deposition, long-term habitat loss and colonisation of hard structures during the operations and maintenance phase remains the same as described in the construction phase above. No significant impact for the Scottish west coast scallop vessels, Isle of Man scallop vessels, other scallop vessels, beam trawl vessels, and offshore static gear receptor groups is therefore predicted.
- 6.8.6.14 Overall, the fish and shellfish ecology assessment concluded that the significance of effect for disturbance/remobilisation of sediment-bound contaminants during the operations and maintenance phase remains mostly the same as described in the construction phase above for European lobster, *Nephrops*, herring, and all other fish and shellfish ecology IEFs. The following significance of effects are, therefore, concluded as **minor adverse**.
- 6.8.6.15 The fish and shellfish ecology assessment concluded that the significance of EMFs from subsea electrical cabling during the operations and maintenance phase is **minor adverse** for all species.
- 6.8.6.16 Therefore, no significant impacts are predicted for any commercial fisheries receptor groups during the operations and maintenance phase, as a result of impacts on commercially important fish and shellfish resources.

Decommissioning phase

- 6.8.6.17 The significance of effect for each commercially important species assessed within the fish and shellfish ecology assessment is expected to remain the same, if not less than, as described during the construction phase above for each impact. The potential impacts are, therefore, not expected to exceed **minor adverse** significance, which is not significant in EIA terms.
- 6.8.6.18 In light of the above, no significant impact is predicated for each of the six identified commercial fisheries receptor groups in Table 6.7 during the decommissioning phase.

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6.8.7 Supply chain opportunities for local fishing vessels

6.8.7.1 The construction, operations and maintenance and decommissioning of the Morgan Generation Assets may lead to supply chain opportunities for local fishing vessels. The MDS is summarised in Table 6.12.

Construction phase

6.8.7.2 During the construction phase (up to four years duration) of the Morgan Generation Assets, the following are areas of potential support that could be provided by local commercial fishing operators:

- Guard vessels
- Scouting surveys
- Visual checks of infrastructure
- OFLO duties.

Magnitude of impact

6.8.7.3 Due to this impact being beneficial, the definition for magnitude has been amended to align with the terms for beneficial impacts that are outlined in Table 5.4 of Volume 1, Chapter 5: EIA methodology of the Environmental Statement.

6.8.7.4 For all receptor groups, this impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than four years) and intermittent. It is predicted that the impact will affect the receptors directly, but only be of minor benefit, as it is judged that any such support by the receptor groups would create a value equivalent to between 5-10 % of the receptor group's annual value of landings. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

6.8.7.5 For this impact, the sensitivity has been defined by the likely potential that the receptor group has for providing support to the Morgan Generation Assets.

Offshore static gear vessels

6.8.7.6 These vessels have moderate suitability to provide marine operational support during the construction phase. This is based on the vessels being larger, and therefore having larger operational ranges and capacity to provide support, in addition to the assumption that vessels have the relevant workboat certifications for the vessel and crew. Multiple vessels from this receptor group have provided support as scout vessels during initial offshore surveys. The sensitivity of the receptor is therefore, considered to be **medium**.

Beam trawl vessels

6.8.7.7 These vessels do not have the suitability to provide marine operational support during the construction phase. Although these vessels are larger, and therefore have larger operational ranges, they are not suitable for providing support work due to poor stability without their derricks in operational position. The sensitivity of the receptor is therefore, considered to be **negligible**.

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Scallop vessels – Scottish west coast

6.8.7.8 These vessels have low suitability to provide marine operational support during the construction phase; these vessels may have to undergo modifications to enable safe use as support vessels. The sensitivity of the receptor is therefore, considered to be **low**.

Scallop vessels – Isle of Man

6.8.7.9 These vessels have moderate suitability to provide marine operational support during the construction phase. This is based on the vessel type and size which means they have the capacity to provide support; in addition to the assumption that vessels have the relevant workboat certifications for the vessel and crew. The sensitivity of the receptor is therefore, considered to be **medium**.

Other scallop vessels

6.8.7.10 These vessels have low suitability to provide marine operational support during the construction phase; these vessels may have to undergo modifications to enable safe use as support vessels. The sensitivity of the receptor is therefore, considered to be **low**.

Herring vessels

6.8.7.11 These vessels have moderate suitability to provide marine operational support during the construction phase. This is based on the vessel type and size, which means they have the capacity to provide support; in addition to the assumption that vessels have the relevant workboat certifications for the vessel and crew. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

6.8.7.12 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.29.

Table 6.29: Magnitude, sensitivity and impact significance relating to supply chain opportunities for local fishing vessels during construction of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Low	Medium	Minor
Beam trawl vessels	Low	Negligible	Negligible
Scallop vessels - Scottish west coast	Low	Low	Minor
Scallop vessels - Isle of Man	Low	Medium	Minor
Other scallop vessels	Low	Low	Minor
Herring vessels	Low	Medium	Minor

Operations and maintenance phase

6.8.7.13 During the operations and maintenance phase (35 years), there may be opportunities for commercial fishing vessels to provide marine operational support, such as OFLO duties and guard vessel requirements during periods of major maintenance.

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Magnitude of impact

- 6.8.7.14 Due to this impact being beneficial, the definition for magnitude has been amended to align with the terms for beneficial impacts, that are outlined in Table 5.4 of Volume 1, Chapter 5: EIA methodology.
- 6.8.7.15 The magnitude for all commercial fisheries receptor groups during the operations and maintenance phase is considered to be lower than during construction, as the supply chain opportunities are likely to be shorter term and more intermittent. It is predicted that the impact will affect the receptors directly, but only be of very minor benefit, as it is judged that any such support by these receptor groups would create a value equivalent to less than 5 % of the receptor groups' annual value of landings. The magnitude is therefore, considered to be **negligible**.

Sensitivity of receptor

- 6.8.7.16 For this impact, the sensitivity has been defined by the likely potential the receptor group has to provide support to the Morgan Generation Assets.
- 6.8.7.17 The sensitivity of the receptor groups remains the same as described for the construction phase of this impact, as summarised in Table 6.30.

Significance of effect

- 6.8.7.18 A summary of the impact magnitude, sensitivity of receptors and overall effect significance is provided in Table 6.30.

Table 6.30: Magnitude, sensitivity and impact significance relating to supply chain opportunities for local fishing vessels during the operations and maintenance phase of the Morgan Generation Assets.

Receptor Group	Magnitude	Sensitivity	Effect
Offshore static gear vessels	Negligible	Medium	Minor
Beam trawl vessels	Negligible	Negligible	Negligible
Scallop vessels - Scottish west coast	Negligible	Low	Negligible
Scallop vessels - Isle of Man	Negligible	Medium	Minor
Other scallop vessels	Negligible	Low	Negligible
Herring vessels	Negligible	Medium	Minor

Decommissioning phase

- 6.8.7.19 In the absence of detailed methodologies for the decommissioning phase the supply chain opportunities for local fishing vessels are considered the same as for the construction phase, as summarised in Table 6.29.

6.8.8 Potential impacts on commercial fisheries as a result of increased risk of introduction and spread of Invasive Non Native Species (INNS)

- 6.8.8.1 As assessed in Chapter 2: Benthic subtidal ecology of the Environmental Statement, no significant effects are likely to occur as a result of the risk of introduction and spread

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of INNS during the construction, operations and maintenance and decommissioning phases. This is due to the fact that only a small proportion of the Morgan Generation Assets benthic subtidal ecology study area that may be colonised. Furthermore, measures have been adopted to minimise the effects from introduction or spread of INNS. Therefore, as a result there will be no significant effects on commercial fisheries.

6.8.9 Future monitoring

6.8.9.1 Table 6.31 below outlines the proposed monitoring commitments for commercial fisheries.

Table 6.31: Monitoring commitments.

Environmental effect	Data gathering	Means of implementation
Loss or damage to fishing gear due to snagging on inter-array and/or interconnector cables.	Preparation of an Offshore Construction Method Statement post-consent with details of cable monitoring to reduce snagging risk.	Secured within the deemed marine licence(s) in the draft DCO.

6.9 Cumulative effects assessment (CEA) methodology

6.9.1 Methodology

6.9.1.1 The CEA takes into account the impact associated with the Morgan Generation Assets together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 5, Annex 5.1: CEA screening matrix of the Environmental Statement). Each project has been considered on a case by case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

6.9.1.2 The commercial fisheries CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the Environmental Statement. As part of the assessment, all projects and plans considered alongside the Morgan Generation Assets have been allocated into 'tiers' reflecting their current stage within the planning and development process, these are listed below.

6.9.1.3 A tiered approach to the assessment has been adopted, as follows:

- Tier 1
 - Under construction
 - Permitted application
 - Submitted application
 - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact
- Tier 2
 - Scoping Report has been submitted and is in the public domain
- Tier 3
 - Scoping Report has not been submitted and is not in the public domain
 - Identified in the relevant Development Plan

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- Identified in other plans and programmes
- 6.9.1.4 Planned Marine Protected Areas (MPAs) including Special Areas of Conservation (SACs), Special Areas of Protection (SPAs) and Marine Conservation Zones (MCZs) within the Morgan Generation Assets CEA commercial fisheries study area that are expected to be subject to new fisheries management measures over the lifetime of this project, via The Fisheries Act 2020. This tiered approach is adopted to provide a clear assessment of the Morgan Generation Assets alongside other projects, plans and activities. The specific projects, plans and activities scoped into the CEA, are outlined in Table 6.32 and displayed in Figure 11.7.
- 6.9.1.5 The range of potential cumulative impacts is identified in Table 6.33 and is a subset of those considered for the Morgan Generation Assets alone. Where the potential significant effect for the Morgan Generation Assets alone is assessed as negligible or where an impact is predicted to be highly localised, these will not generally be considered within the CEA, as there is not considered to be a potential for cumulative effects with other plans, projects or activities.
- 6.9.1.6 Given the operational ranges of the fishing fleets active in the region and considering feedback from consultation, the study area for the CEA for commercial fisheries remains the same as for the main assessment (ICES Rectangles 36E5, 36E6, 37E5 and 37E6) (Figure 6.1). This study area will ensure that relevant regional fishing grounds, for a range of different fishing fleets, are fully assessed as part of the CEA.
- 6.9.1.7 For the purposes of this assessment, projects and activities have not been included where they are considered to be included in the baseline, such as shipping routes, operational offshore wind farms, aggregate areas⁸, operational cables and pipelines, anchorages and existing restrictions within MPAs, as commercial fisheries receptors would already be adapted to them, and they do not have significant effects on commercial fisheries receptors.

⁸ Aggregate areas have been considered with regard to fish and shellfish ecology, as described in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.

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Table 6.32: List of other projects, plans and activities considered within the CEA.

Project/Plan	Status	Distance from the Morgan Array Area (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Morgan Generation Assets
Tier 1						
Mona Offshore Wind Project	Submitted Application	5.52	Proposed offshore wind farm. Maximum of 96 wind turbines. Area: 300 km ² .	2026	2030	Yes
Tier 2						
Morecambe Offshore Wind Farm Generation Assets	Pre-application	8.9	Proposed offshore wind farm. Maximum of 40 wind turbines and indicative minimum spacing between wind turbines of 990 m. Area: 125 km ² .	2026	2028	Yes
Moor Vannin Offshore Wind Farm (Isle of Man)	Pre-application	34.5	Proposed offshore wind farm. Maximum of 100 fixed wind turbines. Area: 253 km ² .	2030	2032	No
Tier 3						
West of Walney MCZ	Designated	32	Total area of 388 km ² . Protected for sea-pen and burrowing megafauna communities, and subtidal mud and sand.	n/a	n/a	No
West of Copeland MCZ	Designated	39	Total area of 158 km ² . Protected for subtidal coarse and mixed sediments and subtidal sand.	n/a	n/a	No
Fylde MCZ	Designated	29	Total area of 261 km ² . Protected for subtidal mud and sand.	n/a	n/a	No
Liverpool Bay SPA	Designated	17	Total area of 2,528 km ² . Protected for a range of bird species.	n/a	n/a	No
Shell Flat and Lune Deep SAC	Designated	29	Total area of 106 km ² . Protected for reefs feature large subtidal sand	n/a	n/a	No

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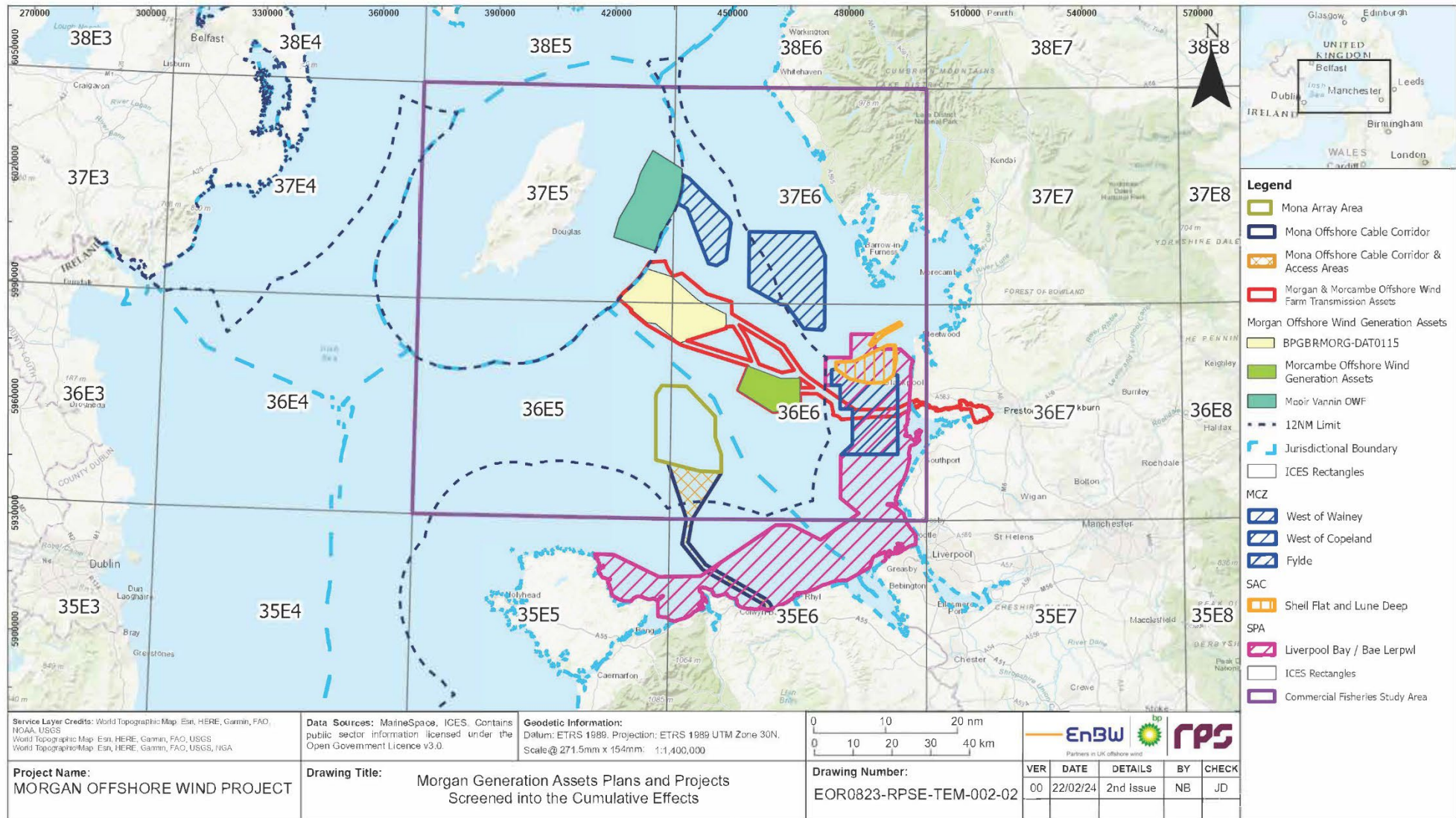


Figure 6.7: Other plans and projects screened into the cumulative effects assessment.

6.9.2 Maximum design scenario

6.9.2.1 The MDSs identified in Table 6.33 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The scenarios presented and assessed in this section have been selected from the Project Design Envelope as provided in Volume 1, Chapter 5: Project description of the Environmental Statement. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g. different infrastructure layout), to that assessed here, be taken forward in the final design scheme.

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Table 6.33: MDS considered for the assessment of potential cumulative effects on commercial fisheries.

^a C=construction, O=operations and maintenance, D=decommissioning.

Potential cumulative effect	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Loss or restricted access to fishing grounds	✓	✓	✓	<p>MDS as described for Morgan Generation Assets (Table 6.12) assessed cumulatively with the following other projects/plans:</p> <p>Tier 1 Mona Offshore Wind Project.</p> <p>Tier 2</p> <ul style="list-style-type: none"> • Morecambe Offshore Wind Farm Generation Assets • Mooir Vannin Offshore Wind Farm (Isle of Man). <p>Tier 3 Five MPAs:</p> <ul style="list-style-type: none"> • West of Walney MCZ • West of Copeland MCZ • Fylde MCZ • Liverpool Bay SPA • Shell Flat and Lune Deep SAC. 	Outcome of the CEA will be highest when the greatest number of other schemes, resulting in a loss or restricted access to fishing ground, are considered within the cumulative commercial fisheries study area.
Interference with fishing activity	✓	✓	✓	<p>MDS as described for the Morgan Generation Assets (Table 6.12) assessed cumulatively with the following other projects/plans:</p> <p>Tier 1 Mona Offshore Wind Project</p> <p>Tier 2</p> <ul style="list-style-type: none"> • Morecambe Offshore Wind Farm Generation Assets • Mooir Vannin Offshore Wind Farm (Isle of Man). <p>Tier 3 Five MPAs:</p> <ul style="list-style-type: none"> • West of Walney MCZ 	

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Potential cumulative effect	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> • West of Copeland MCZ • Fylde MCZ • Liverpool Bay SPA • Shell Flat and Lune Deep SAC. 	
Loss or damage to fishing gear due to snagging	✓	✓	✓	<p>MDS as described for the Morgan Generation Assets (Table 6.12) assessed cumulatively with the following other projects/plans:</p> <p>Tier 1 Mona Offshore Wind Project.</p> <p>Tier 2</p> <ul style="list-style-type: none"> • Morecambe Offshore Wind Farm Generation Assets • Moir Vannin Offshore Wind Farm (Isle of Man). <p>Tier 3 Five MPAs:</p> <ul style="list-style-type: none"> • West of Walney MCZ • West of Copeland MCZ • Fylde MCZ • Liverpool Bay SPA • Shell Flat and Lune Deep SAC. 	Outcome of the CEA will be highest when the greatest number of other schemes, resulting in loss or damage to fishing gear due to snagging, are considered within the cumulative commercial fisheries study area.
Potential impacts on commercially important fish and shellfish stocks	✓	✓	✓	As described in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Outcome of the CEA will be highest when the greatest number of other schemes, resulting in potential impacts on commercially important fish and shellfish stocks, are considered within the cumulative commercial fisheries study area.

6.10 Cumulative effects assessment

6.10.1.1 A description of the significance of cumulative effects upon commercial fisheries receptors, arising from each identified impact is given below.

6.10.1.2 The CEA is presented in a series of tables (one for each potential cumulative impact), and considers the following:

- Scenario 1: Morgan Generation Assets together with the Morgan and Morecambe Offshore Wind Farms: Transmission Assets (hereafter referred to as the Transmission Assets)
- Scenario 2: Morgan Generation Assets together with the Morecambe Offshore Windfarm Generation Assets (hereafter referred to as the Morecambe Generation Assets) and the Transmission Assets
- Scenario 3: Morgan Generation Assets together with the Transmission Assets plus relevant Tier 1, Tier 2 and Tier 3 projects.

6.10.1.3 The likelihood of any significant effects on commercial fisheries occurring would largely depend on the operational practices of each particular fleet, the location and extent of their grounds relative to other developments and the timings of the construction, operations and decommissioning phases. Effects and receptor groups are only discussed where there is the potential for a cumulative effect to arise.

6.10.1 Loss or restricted access to fishing grounds

6.10.1.1 For loss or restricted access to fishing grounds, the potential significant effect for the Morgan Generation Assets alone, across all phases, is assessed as negligible for all receptor groups other than the Scottish west coast scallop vessels (assessed as minor adverse across all phases) and the Isle of Man scallop vessels (assessed as minor adverse during the construction and decommissioning phases and negligible during the operations and maintenance phase). Therefore, only the Scottish west coast scallop vessels (during all phases) and the Isle of Man scallop vessels (during the construction and decommissioning phases only) have been considered within the CEA for this impact, as there is not considered to be a potential for cumulative effects with other plans, projects or activities for the other receptor groups.

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Table 6.34: Cumulative effects assessment for loss or restricted access to fishing grounds for Scottish west coast scallop vessels and Isle of Man scallop vessels.

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
Construction			
Magnitude of impact	<p>The cumulative effects assessment for Scenario 1 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets. <p>Project-specific consultation with commercial fisheries stakeholders established that although queen scallop populations are present throughout the Morgan Array Area, the west section of the Morgan Array Area is considered to be the most important ground; with August to December being particularly important months. These vessels also target king scallop within the Morgan Array Area, with November to May being a key period within the year.</p> <p>The construction phase of the Morgan Generation Assets and the Transmission Assets, together, has an anticipated duration of up to four years. During this period of construction, it is anticipated that the Scottish west coast scallop vessels and Isle of Man scallop vessels (that deploy dredges, target king scallop and fish beyond the Isle of Man 12 nm limit) will temporarily lose access to fishing grounds. However, while these receptor groups are active within the Morgan Array Area, activity is undertaken to a far lesser extent throughout other areas of the</p>	<p>The cumulative effects assessment for Scenario 2 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Generation Assets • Transmission Assets. <p>The construction phase for the Morgan Generation Assets, Morecambe Generation Assets and the Transmission Assets, together, has an anticipated duration of up to four years and a total area of approximately 1,738 km². During this period of construction, it is anticipated that the Scottish west coast scallop vessels and Isle of Man scallop vessels (that deploy dredges, target king scallop and fish beyond the Isle of Man 12 nm limit) will temporarily lose access to fishing grounds. It is noted, however, that the dredge fishery is considered a low value fishery within the region of the Morecambe Generation Assets (Morecambe Offshore Windfarm Limited, 2023), which is located 8.9 km away from the Morgan Array Area. During the construction phase of the Morgan Generation Assets and the Transmission Assets, fishing activity will only be excluded from discrete spatial areas (i.e. only sections of the Morgan Array Area and Transmission Assets Red Line Boundary will be subject to temporary restrictions, via temporary 500 m safety and/or exclusion</p>	<p>Tier 1</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 1 project listed in Table 6.33. <p>Cumulative impact with the Mona Offshore Wind Project will occur where there is a temporal overlap of construction works with the scallop fishery that is targeted by this receptor group, predominantly within the central part of the Mona Array Area and western part of the Morgan Array Area. The construction phase of the Mona Offshore Wind Project is expected to have a low magnitude of impact on both the Scottish west coast scallop vessels and the Isle of Man scallop vessels (Mona Offshore Wind Limited, 2024). Loss or restricted access as a result of the Mona Offshore Wind Project, Morgan Generation Assets and the Transmission Assets construction phases together, will not result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works and the likelihood that there will be rolling safety zones during the construction phases of these wind farms, which will minimise loss of area to these receptor groups.</p>

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<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
<p>Transmission Assets Red Line Boundary (Transmission Assets, 2023).</p> <p>The total area of the Morgan Generation Assets and the Transmission Assets Red Line Boundary is approximately 1,613 km². However, during the construction phase, fishing activity will only be excluded from discrete spatial areas (i.e. only sections of the Morgan Array Area and Transmission Assets Red Line Boundary will be subject to temporary restrictions, via temporary 500 m safety and/or exclusion zones around major installation vessels) (Transmission Assets, 2023).</p> <p>Loss or restricted access as a result of the Morgan Generation Assets combined with the Transmission Assets during the construction phases is, therefore, not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>The cumulative effect for both the Scottish scallop vessels and the Isle of Man scallop vessels is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent and with high reversibility. It is predicted that the impact will affect the receptors directly but be of low magnitude, as it is judged construction would only affect an area from which a minor proportion of the receptor group's commercial annual value of landings is caught. The magnitude of cumulative impact for these receptor is therefore deemed as low.</p>	<p>zones around major installation vessels) (Transmission Assets, 2023).</p> <p>Loss or restricted access as a result of the Morgan Generation Assets combined with the Morecambe Generation Assets and the Transmission Assets, during the construction phases, is, therefore, not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>The cumulative effect for both the Scottish scallop vessels and the Isle of Man scallop vessels is predicted to be of local spatial extent, short to medium term duration, intermittent and with high reversibility. It is predicted that the impact will affect the receptors directly but be of low magnitude, as it is judged construction would only affect an area from which a minor proportion of the receptor group's commercial annual value of landings is caught. The magnitude of cumulative impact for these receptors is therefore, considered to be low.</p>	<p>The cumulative effect for both the Scottish scallop vessels and the Isle of Man scallop vessels is predicted to be of regional spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility. It is predicted that the impact will affect the receptors directly. The magnitude of cumulative impact for these receptors is, therefore, considered to be low.</p> <p>Tier 2</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 2 projects and plans listed in Table 6.33. <p>It is anticipated that the Scottish west coast scallop vessels and Isle of Man scallop vessels receptor groups will lose access to fishing grounds during the construction phases of the Morecambe Generation Assets, and the Transmission Assets. These receptor groups are less active within areas south of the Morgan Array Area, such as within the Morecambe Offshore Wind Farm Generation Assets Array Area and the Transmission Assets Red Line Boundary. The MDS for this receptor group would be loss of access to key fishing grounds as a result of the construction areas of the Morgan Generation Assets, Morecambe Offshore Windfarm Project Generation Assets and the Transmission</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>Assets simultaneously, the total area from the two array areas alone is approximately 447 km². However, it is likely that there will be rolling safety zones during the construction phases of these wind farms, which will minimise loss of area to these receptor groups.</p> <p>It is not anticipated that these receptor group will lose access to fishing grounds during the construction phase of the Mooir Vannin Offshore Windfarm, as the offshore construction phase of Mooir Vannin Offshore Windfarm (Q1 2030 starts after the completion of the construction phase for the Morgan Generation Assets, Morecambe Offshore Windfarm Project Generation Assets and the Transmission Assets (Ørsted, 2023). There is, therefore, no temporal overlap of constructions works. It is also noted that the Mooir Vannin Offshore Windfarm is to be located within Manx territorial waters (Ørsted, 2023). Under the Isle of Man Scallop LTMP, access to king scallop dredging is limited to vessels under 221 kW, unless they possess Grandfather Rights. These Grandfather Rights will be terminated by November 2024 under the LTMP. Only vessels which possess a UK and Isle of Man fishing vessel licence with scallop entitlement may fish for scallops within Manx Territorial waters. The fishery is highly regulated and, whilst access is non-discriminatory by way of nationality or home port, eligibility to participate is determined on the basis of a number of factors including historic track record and vessel characteristics. At the time of writing, there are 55 vessels</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>licenced to fish for king scallop in Isle of Man waters (29 of which are Isle of Man registered vessels). Of these, 36 can also fish for queen scallops (25 of which are Isle of Man registered vessels). Project-specific consultation has established that the Scottish west coast scallop vessels do not operate within Manx Territorial waters. Daily catch rates are also in place for queen scallop in Manx Territorial Waters and although some vessels within this receptor group may hold a valid licence to fish, they often may choose not to.</p> <p>Loss or restricted access as a result of the Morgan Generation Assets, Mooir Vannin Offshore Windfarm, Mona Offshore Wind Project, Morecambe Generation Assets and the Transmission Assets construction phases is not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>The cumulative effect for both the Scottish scallop vessels and the Isle of Man scallop vessels is predicted to be of regional spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of the works. It is predicted that the impact will affect the receptors directly, but be of low magnitude, as it is judged that it would affect an area from which a minor proportion of the receptor group's annual value of landings is caught. The magnitude of cumulative impact for these receptors is therefore, considered to be low.</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>Tier 3</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 3 designated sites listed in Table 6.33. <p>The CEA considers MPAs where new management measures, focussed on commercial fishing activity, are proposed to be implemented by the MMO to protect designated features within MPAs. Any such measures may contribute to loss or restricted access to fishing grounds for commercial fisheries in the Morgan Generation Assets CEA commercial fisheries study area. Such management measures (typically invoked via Byelaws) implemented before 2022, i.e. the bottom towed gear prohibition byelaw within the West of Walney MCZ implemented in 2019, are considered part of the commercial fisheries baseline and hence not considered within the CEA.</p> <p>The objective of MPAs is to maintain the integrity of the sites and the identified features within them. In addition to protected sites, the North West Inshore Fisheries and Conservation Authority have implemented a range of Byelaws that limit fishing activity within the 6 nm boundary of English waters (i.e. number of dredges deployed and size limit of vessels). Existing byelaws within the 6 nm boundary of English waters are considered</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>part of the commercial fisheries baseline and hence not considered within the CEA. At the time of writing, it is uncertain as to whether additional management measures will be implemented with regard to commercial fisheries operating within the 6 nm boundary of English waters.</p> <p>The Fisheries Act 2020 introduced new powers allowing for the MMO to make byelaws to manage commercial fishing activities for the conservation of marine flora, fauna and habitats in English waters (including between 6 nm and 12 nm, and beyond 12 nm). The MMO is using these powers to introduce fisheries management to protect 41 MPAs by the end of 2024 (MMO, 2024a). This work is taking place over four stages:</p> <ul style="list-style-type: none"> • Stage one: Public consultation on draft byelaws for four MPAs were undertaken in 2021 and then implemented in June 2022, none of which overlap with the Morgan Generation Assets CEA commercial fisheries study area • Stage two: Focussed on the impacts of bottom towed fishing gear on all rock and reef MPA features within 13 MPAs, none of which overlap with the Morgan Generation Assets CEA commercial fisheries study area. Following formal consultation by the MMO, management measures are being finalised and where appropriate introduced into the 13 MPAs • Stage three: Covers the remaining impacts of fishing on the 41 MPAs with seabed

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			<p>features not already covered in stage one or stage two, four of which overlap with the Morgan Generation Assets CEA commercial fisheries study area. Management options are to be considered no later than end of 2024. MPAs in stage three and overlap with the Morgan Generation Assets CEA commercial fisheries study area include:</p> <ul style="list-style-type: none"> – Shell Flat and Lune Deep SAC (106 km²) designated for reefs feature large subtidal sand – West of Copeland MCZ (158 km²) designated for subtidal coarse and mixed sediments and sand – West of Walney MCZ (388 km²) designated for sea-pen and burrowing megafauna communities and subtidal mud and sand – Flyde MCZ (261 km²) designated for subtidal mud and sand. <ul style="list-style-type: none"> • Stage four: Covers the impacts of fishing on MPAs with highly mobile species features (harbour porpoise or marine birds), with management options to be considered by the end of 2024. The Liverpool Bay SPA (designated for seabirds) is in stage four and overlaps with the Morgan Generation Assets CEA commercial fisheries study area. <p>The MMO has drafted a summary report focused on stage three. This report summarises the relevant evidence available for commercial fishing gear impacts on certain MPAs. More specifically, the report provides an</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>overview of the analysis undertaken for the impacts of fishing using anchored nets and lines, bottom towed gear, and traps on features of MPAs in English waters.</p> <p>The summary report concluded that bottom towed gears have the potential to incur a significant negative impact on all MPA designated features in stage three, while anchored nets and traps were considered unlikely to have a significant negative impact (MMO, 2024b). It can therefore be assumed (as it is highly likely) that all bottom towed fishing gear (i.e. dredges) that operate with seabed contact will be subject to some form of limitation within the aforementioned SACs and MCZs in stage 3 that lie within the Morgan Generation Assets CEA commercial fisheries study area. Management options are to be considered by the MMO no later than end of 2024. It is noted, however, that the West of Walney MCZ already contains a bottom towed gear prohibition byelaw (implemented in 2019), which is considered to be part of the commercial fisheries baseline, i.e. not assessed within this CEA.</p> <p>Analysis of VMS data presented within Volume 2, Annex 6.1: Commercial fisheries technical report of the Environmental Statement concluded that fishing activity undertaken within the commercial fisheries study area by the Scottish west coast scallop vessels is highest within offshore waters (beyond 12 m), such as within the Morgan Array Area and in areas to the south west. While fishing activity by the Isle of Man scallop vessels is highest</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>within Manx Territorial Waters and UK offshore waters (beyond 12 m). All the aforementioned SACs and MCZs are either mostly, or entirely located within English waters located between 12 and 6 nm from the coast, with the exemption of the Shell Flat and Lune Deep SAC which is located offshore (beyond 12 nm).</p> <p>Based on the limited risk bottom towed gear presents for protected areas designated for seabirds, additional management measures are considered unlikely within such sites. Therefore, for the Liverpool Bay SPA, which is designated for seabirds, no cumulative impact on the commercial fisheries receptors is anticipated.</p> <p>Based on the relatively low level of Scottish west coast scallop vessels and Isle of Man scallop vessels activity within the boundaries of the four MPAs listed above, and the commitment by the Applicant to implement the measures outlined in Table 6.14, the cumulative loss or restricted access to fishing grounds from project-only impacts and these potential future fishery management measures, is assessed as resulting in a 5-10% reduction in the annual value of landings for vessels in this receptor group.</p> <p>Given the concentrated area of activity within the western section of the Morgan Array Area and the limited activity observed within the protected areas, this cumulative loss of area, across all phases, is therefore considered to affect an area from which a minor proportion (5-10 %) of these commercial fisheries receptor's annual value of landings is caught.</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			The magnitude of cumulative impact for the Scottish west coast scallop vessels and the Isle of man scallop vessels is, therefore, considered to be low .
Sensitivity of receptor	<p>The Scottish west coast scallop vessels receptor group has limited spatial tolerance due to dependence upon the study area for queen scallop dredging. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear. Scottish west coast scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor to cumulative impacts is considered to be medium.</p> <p>Dependence on the commercial fisheries study area can be observed (and confirmed via consultation) for Isle of Man vessels targeting queen scallop (while deploying dredges and otter trawls within Manx Territorial Waters) and king scallop (while deploying dredges within Manx Territorial Waters and areas beyond in UK waters). Isle of Man scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor to cumulative impacts is considered to be medium .</p>		
Significance of effect	Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium for both the Scottish west coast scallop vessels and the Isle of Man scallop vessels. The cumulative effect will, therefore, be of minor adverse significance for these receptors, which is not significant in EIA terms.	Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium for both the Scottish west coast scallop vessels and the Isle of Man scallop vessels. The cumulative effect will, therefore, be of minor adverse significance for these receptors, which is not significant in EIA terms.	<p>Tier 1</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium for both the Scottish west coast scallop vessels and the Isle of Man scallop vessels. The cumulative effect will, therefore, be of minor adverse significance for these receptors, which is not significant in EIA terms.</p> <p>Tier 2</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium for both the Scottish west coast scallop vessels and the Isle of Man scallop vessels. The cumulative effect will, therefore, be of minor adverse significance for these receptors, which is not significant in EIA terms.</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			<p>Tier 3</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium for both the Scottish west coast scallop vessels and the Isle of Man scallop vessels. The cumulative effect will, therefore, be of minor adverse significance for these receptors, which is not significant in EIA terms.</p>

Operations and maintenance

<p>Magnitude of impact</p>	<p>The cumulative effects assessment for Scenario 1 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets. <p>While taking into account the significant reliance upon the Morgan Array Area by this receptor group (potentially accounting for approximately 40 % of their total annual landings) to reduce the potential for project infrastructure to severely restrict fishing and to promote co-existence and co-location, the Applicant has committed to a SMZ that covers areas of core scallop grounds located within the western section of the Morgan Area Array, in a roughly north – south orientation. The alignment of the inter array cables is also to be orientated in a north – south orientation, as far as reasonably possible. This orientation of inter array cables and wind turbines within the Morgan Array Area is compatible with tows exhibited by vessels within this receptor group (as established via project-specific consultation feedback) and as such, dredging is expected</p>	<p>The cumulative effects assessment for Scenario 2 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Generation Assets • Transmission Assets. <p>The Array Area of the Morecambe Generation Assets is located to the north and east of well-established scallop grounds. Although some seasonal activity is known to occur across the Morecambe Generation Assets, the dredge fishery is considered to be a low value fishery within this area (Morecambe Offshore Windfarm Limited, 2023).</p> <p>The design of the Morecambe Generation Assets infrastructure layout i.e. minimum spacing of 990 m between wind turbines in a row, 1,760 m between inter rows of wind turbines and up to 40 wind turbines), is expected to allow some levels of dredge activity to resume within the Morecambe Generation Assets Array Area (Morecambe Offshore Windfarm Limited, 2023).</p>	<p>Tier 1</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 1 project listed in Table 6.33. <p>This receptor group has indicated that they may be able to continue fishing within the Morgan Array Area and the Mona Array Area, but fishing activity could be restricted. The total area from the two array areas alone is approximately 600 km². In order to reduce loss or restricted access to fishing grounds and promote co-location and co-existence during the operations and maintenance phase, the Morgan Generation Assets and the Mona Offshore Wind Project have committed to, within the respective outline FLCP (Table 6.14, Document Reference J10) (Document Reference J13, Mona Offshore Wind Limited, 2024), implementing SMZs over areas of core</p>
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MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
<p>to continue in the SMZ during the operations and maintenance phase of the Morgan Generation Assets, reducing the magnitude of impact. Such commitments, including the minimum extent of the SMZ is committed to within the Outline FLCP (Document Reference J10).</p> <p>Stakeholders via consultation have confirmed that gear penetration varied between 0.05-0.25 m for vessels within the Scottish west coast receptor group, so adequate burial of cables is important to allow these vessels to continue fishing within the area of the Transmission Assets Red Line Boundary; the MDS of both the Transmission Assets Red Line Boundary for burial depths of cables, is 0.5 m. Due to the nature of the gear (i.e. robust bottom contact with the use of Newhaven dredges for king scallop and skid dredges for queen scallop, it is expected that this receptor group will lose access to discrete areas as a result of where external cable protection is required within the Transmission Assets Red Line Boundary. However, such external cable protection will be designed to increase potential for co-existence; up to 122 km of export cable protection (up to 3 m height and a width of 10 m); up to 48 export cable crossings (up to 3 m height). It is also noted, however, that this receptor group is less active within areas south of the Morgan Array Area, such as within the Transmission Assets Red Line Boundary (as established during consultation).</p> <p>Loss or restricted access as a result of the Morgan Generation Assets combined with the</p>	<p>To reduce the potential for project infrastructure to severely restrict fishing and to promote co-existence and co-location, the Applicant has committed to a SMZ that covers areas of core scallop grounds located within the western section of the Morgan Area Array, in a roughly north – south orientation. The alignment of the inter array cables is also to be orientated in a north – south orientation, as far as reasonably possible. This orientation of inter array cables and wind turbines within the Morgan Array Area is compatible with tows exhibited by vessels within this receptor group (as established via project-specific consultation feedback) and as such, dredging is expected to continue in the SMZ during the operations and maintenance phase of the Morgan Generation Assets, reducing the magnitude of impact. Such commitments, including the minimum extent of the SMZ is committed to within the Outline FLCP (Document Reference J10).</p> <p>Due to the nature of the gear (i.e. robust bottom contact with the use of Newhaven dredges for king scallop and skid dredges for queen scallop, it is expected that this receptor group will lose access to discrete areas as a result of where external cable protection is required within the Transmission Assets Red Line Boundary. However, such external cable protection will be designed to increase potential for co-existence; up to 122 km of export cable protection (up to 3 m height and a width of 10 m); up to 48 export cable crossings (up to 3 m height). It is also noted, however,</p>	<p>scallop grounds (as discussed with stakeholders via consultation).</p> <p>Due to the nature of the gear (i.e. robust bottom contact with the use of Newhaven dredges for king scallop and skid dredges for queen scallop, it is expected that this receptor group will lose access to discrete areas as a result of where external cable protection is required within the Transmission Assets Red Line Boundary. However, such external cable protection will be designed to increase potential for co-existence; up to 122 km of export cable protection (up to 3 m height and a width of 10 m); up to 48 export cable crossings (up to 3 m height). It is also noted, however, that this receptor group is less active within areas south of the Morgan Array Area, such as within the Transmission Assets Red Line Boundary (as established during consultation).</p> <p>Loss or restricted access as a result of the Morgan Generation Assets combined with the Mona Offshore Wind Project and the Transmission Assets, during the operations and maintenance phases, is, therefore, not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>In light of the above, the cumulative impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of low magnitude, as it is judged that it would affect an area from which a minor proportion of the</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
<p>Transmission Assets during the operations and maintenance phases is, therefore, not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>In light of the above, the cumulative impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of low magnitude, as it is judged that it would affect an area from which a minor proportion of the receptor group’s annual value of landings is caught. The magnitude of cumulative impact is therefore, considered to be low.</p>	<p>that this receptor group is less active within areas south of the Morgan Array Area, such as within the Transmission Assets Red Line Boundary (as established during consultation).</p> <p>Loss or restricted access as a result of the Morgan Generation Assets combined with the Morecambe Generation Assets and the Transmission Assets, during the operations and maintenance phases, is, therefore, not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>In light of the above, the cumulative impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will affect the receptor directly, but be of low magnitude, as it is judged that it would affect an area from which a minor proportion of the receptor group’s annual value of landings is caught. The magnitude of cumulative impact is therefore, considered to be low.</p>	<p>receptor group’s annual value of landings is caught. The magnitude of cumulative impact is therefore, considered to be low.</p> <p>Tier 2</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 2 plans and projects listed in Table 6.33. <p>This receptor group has indicated that they may be able to continue fishing within the array areas of the Morgan Generation Assets and the Morecambe Generation Assets, but fishing activity could be restricted. The total area from the two array areas alone is approximately 447 km². This receptor group is less active within areas south of the Morgan Array Area, such as within the Morecambe Offshore Wind Farm Generation Assets Array Area and the Morgan and Morecambe Offshore Wind Transmission Assets Red Line Boundary.</p> <p>In order to reduce loss or restricted access to fishing grounds and promote co-location and co-existence during the operations and maintenance phase, the Morgan Generation Assets have committed to, within the respective outline FLCP (Document Reference J10), implementing a SMZ over areas of core scallop grounds (as discussed with stakeholders via project-specific consultation).</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			<p>The Mooir Vannin Offshore Windfarm is to be located within Manx Territorial Waters (Ørsted, 2023). Only vessels that possess a UK and Isle of Man fishing vessel licence with scallop entitlement may fish for scallops within Manx Territorial waters. The fishery is highly regulated and, whilst access is non-discriminatory by way of nationality or home port, eligibility to participate is determined on the basis of a number of factors including historic track record and vessel characteristics. At the time of writing, there are 55 vessels licenced to fish for king scallop in Isle of Man waters (29 of which are Isle of Man registered vessels). Of these, 36 can also fish for queen scallops (25 of which are Isle of Man registered vessels). Daily catch rates are also in place for queen scallop in Manx Territorial Waters and although some vessels within this receptor group may hold a valid licence to fish, they often may choose not to. While this receptor group has not indicated whether they may, or may not, be able to fish within the array area of the Mooir Vannin Offshore Windfarm once operational, the regulations currently in place limit the extent of this receptor groups activity.</p> <p>The cumulative loss of area is, therefore, determined to affect an area from which a small proportion (5-10 %) of this commercial fisheries receptor’s annual value of landings is caught.</p> <p>In light of the above, the cumulative impact is predicted to be of regional spatial extent, long term duration, continuous, and with low reversibility. It is predicted that the impact will</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			<p>affect the receptor directly, but be of low magnitude, as it is judged that it would affect an area from which a minor proportion of the receptor group's annual value of landings is caught. The magnitude of cumulative impact is therefore, considered to be low.</p> <p>Tier 3 The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 3 designated sites listed in Table 6.33. <p>The magnitude of impact for this receptor groups remains the same as described for the construction phase of this impact.</p>
Sensitivity of receptor	The Scottish west coast scallop vessels receptor group has limited spatial tolerance due to dependence upon the study area for queen scallop dredging. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear. Scottish west coast scallop vessels are deemed to be of limited spatial adaptability, limited spatial tolerance and limited recoverability. The sensitivity of the receptor to cumulative impacts is considered to be medium .		
Significance of effect	Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.	Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.	<p>Tier 1 Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 2 Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity</p>

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			<p>of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 3</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p>

Decommissioning

Magnitude of impact	The magnitude of impacts on the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will not be greater than for the construction phase.
Sensitivity of receptor	The sensitivity of the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will not be greater than for the construction phase.
Significance of effect	The significance of effect of the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is the same as that presented for the detailed assessment above for construction, as the magnitude of impact and sensitivity of the receptor during the decommissioning phase will not be greater than for the construction phase.

6.10.2 Interference with fishing activity

- 6.10.2.1 For interference with fishing activity, the potential significant effect for the Morgan Generation Assets alone, across all phases, is assessed as negligible for all receptor groups other than the offshore static gear vessels. Only the offshore static gear vessels have been considered within the CEA for this impact, as there is not considered to be a potential for cumulative effects with other plans, projects or activities for the other receptor groups.

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Table 6.35: Cumulative effects assessment for interference with fishing activity for offshore static gear vessels.

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
Construction			
Magnitude of impact	<p>The cumulative effects assessment for Scenario 1 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets. <p>The Planning Inspectorate agreed to scope out the potential impact interference with fishing activity within the Transmission Assets commercial fisheries EIA, on the grounds that any cable installation, maintenance and decommissioning activities will be temporary, and construction, maintenance and decommissioning activities associated with the OSPs and any offshore booster station would be temporary and limited in spatial extent (Transmission Assets, 2023).</p> <p>The magnitude of impact during the construction phases of the Morgan Generation Assets and the Transmission Assets is, therefore, not anticipated to exceed the assessment undertaken for the Generation Assets in isolation (section 6.8.3). The cumulative impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be low.</p>	<p>The cumulative effects assessment for Scenario 2 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Generation Assets • Transmission Assets. <p>It is anticipated that this receptor group will experience cumulative interference with fishing activity during the construction phases of the Morgan Generation Assets and the Morecambe Generation Assets.</p> <p>The MDS for this receptor group would, therefore, be interference with fishing activity over a combined area from the Morgan Generation Assets and the Morecambe Generation Assets at one time; total area from the two array areas alone is approximately 425 km², which equates to approximately <10 % of the cumulative commercial fisheries study area. There will be rolling safety zones during the construction phases of the Morgan Generation Assets, which will minimise interference with fishing activity with this receptor group. There is potential for an increase in interference with fishing activity, however this receptor group has a high spatial adaptability and ability to fish numerous grounds.</p> <p>The cumulative impact is predicted to be of local spatial extent, short to medium term</p>	<p>Tier 1</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 1 project listed in Table 6.33. <p>The location of construction works for the Mona Offshore Wind Project will overlap with the offshore static gear vessels fishing grounds, however they typically target grounds that cover a large part of the commercial fisheries study area so the likelihood of any cumulative interference with fishing activity is low. The Mona Offshore Wind Project is expected to have a low magnitude of cumulative impact on these vessels (Mona Offshore Wind Limited, 2024).</p> <p>In light of the above, the cumulative impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due to the temporary nature of any maintenance works. It is predicted that the impact will affect the receptor directly. The magnitude of cumulative impact is, therefore, considered to be low.</p>

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	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
		<p>duration (i.e. less than five years), intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be low.</p>	<p>Tier 2</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 2 projects and plans listed in Table 6.33. <p>It is anticipated that this receptor group will experience cumulative interference with fishing activity during the construction phases of the Morgan Generation Assets and the Morecambe Offshore Windfarm Project Generation Assets. However, it is not anticipated that this receptor group will experience cumulative interference with fishing activity during the construction phase of the Moor Vannin Offshore Windfarm, as the offshore construction phase of Moor Vannin Offshore Windfarm (Q1 2032) starts after project end date for Morgan Generation Assets, Mona Offshore Wind Project and the Morecambe Offshore Windfarm Project Generation Assets (Ørsted, 2023).</p> <p>The MDS for this receptor group would, therefore, be interference with fishing activity over a combined area from the Morgan Generation Assets and the Morecambe Offshore Windfarm Project Generation Assets at one time; total area from the two array areas alone is approximately 447 km², which equates to approximately <10 % of the cumulative commercial fisheries study area. However, there will be rolling safety zones</p>

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	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>during the construction phases of the Morgan Generation Assets, which will minimise interference with fishing activity with this receptor group. There is potential for an increase in interference with fishing activity, however this receptor group has a high spatial adaptability and ability to fish numerous grounds.</p> <p>In light of the above, the cumulative impact is predicted to be of local spatial extent, short to medium term duration (i.e. less than five years), intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be low.</p> <p>Tier 3</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 3 designated sites listed in Table 6.33. <p>As all projects/plans within Tier 3 are designated sites, cumulative interference with fishing activity as a result of increased vessel traffic or changes to shipping routes will not exceed the cumulative assessment undertaken for the Morgan Generation assets and the Transmission Assets alone (Scenario 1).</p>

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	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			The magnitude is therefore, considered to be low .
Sensitivity of receptor	This commercial fisheries receptor comprises larger offshore vessels (>12 m) that deploy static gear and has high spatial adaptability due to the extent of its operational range. These vessels will be affected by construction vessels within the Morgan Array Area. The marker buoys deployed by the offshore static gear vessels are vulnerable to potential interference by construction vessels, due to their poor visibility. The offshore static gear vessels are deemed to be of medium vulnerability. The sensitivity of the receptor is therefore, considered to be medium .		
Significance of effect	Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.	Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.	<p>Tier 1</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 2</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 3</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p>

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<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
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Operations and maintenance

<p>Magnitude of impact</p>	<p>The cumulative effects assessment for Scenario 1 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets. <p>The magnitude of impact during the operations and maintenance phases of the Morgan Generation Assets and the Transmission Assets is not anticipated to exceed the assessment undertaken for the Generation Assets in isolation (section 6.8.3).</p> <p>The cumulative impact is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptors directly. The magnitude of impact is, therefore, considered to be low.</p>	<p>The cumulative effects assessment for Scenario 2 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Generation Assets • Transmission Assets. <p>It is presumed that this receptor group will continue to fish within the array areas of the Morgan Generation Assets and Morecambe Generation Assets. Although operations and maintenance vessel traffic will add to the existing level of shipping activity in the area, there are already moderate levels of vessel traffic in the area and there is co-existence of fishing vessels with other marine traffic.</p> <p>The cumulative impact is predicted to be of local to regional spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of cumulative impact is, therefore, considered to be low.</p>	<p>Tier 1</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 1 project listed in Table 6.33. <p>It is presumed that this receptor group will continue to fish within the array areas of the Morgan Generation Assets and the Mona Offshore Wind Project (Mona Offshore Wind Limited, 2024). Therefore, cumulative interference with fishing activity could be experienced by this receptor group as a result of operations and maintenance vessels.</p> <p>Although operations and maintenance vessel traffic will add to the existing level of shipping activity in the area, there are already moderate levels of vessel traffic in the area and there is co-existence of fishing vessels with other marine traffic.</p> <p>The cumulative impact is predicted to be of local to regional spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of cumulative impact is, therefore, considered to be low.</p>
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	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>Tier 2</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 2 projects and plans listed in Table 6.33. <p>It is presumed that this receptor group will continue to fish within the Morgan Generation Assets and that of the Moir Vannin Offshore Windfarm and the Morecambe Generation Assets. Although operations and maintenance vessel traffic will add to the existing level of shipping activity in the area, there are already moderate levels of vessel traffic in the area, and there is co-existence of fishing vessels with other marine traffic. Interference with fishing as a result of the Moir Vannin Offshore Windfarm, Morecambe, Morgan and Mona Offshore Wind Projects construction phases is not anticipated to result in a reduction of more than 10 % of the annual value of landings, due to the temporary and intermittent nature of the works.</p> <p>The cumulative impact is predicted to be of local to regional spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptor directly. The magnitude of cumulative impact is, therefore, considered to be low.</p>

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	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			<p>Tier 3</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 3 designated sites listed in Table 6.33. <p>The magnitude of impact for this receptor groups remains the same as described for the construction phase of this impact.</p>
Sensitivity of receptor	<p>This commercial fisheries receptor comprises larger offshore vessels (>12 m) that deploy static gear and has high spatial adaptability due to the extent of its operational range. These vessels will be affected by construction vessels within the Morgan Array Area. The marker buoys deployed by the offshore static gear vessels are vulnerable to potential interference by construction vessels, due to their poor visibility. The offshore static gear vessels are deemed to be of medium vulnerability. The sensitivity of the receptor is therefore, considered to be medium.</p>		
Significance of effect	<p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms</p>	<p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms</p>	<p>Tier 1</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 2</p> <p>Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p>

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	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
			Tier 3 Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Decommissioning

Magnitude of impact	The magnitude of impacts on this commercial fisheries receptor is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will not be greater than for the construction phase.
Sensitivity of receptor	The sensitivity of the commercial fisheries receptor is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will not be greater than for the construction phase.
Significance of effect	The significance of effect of the commercial fisheries receptor is the same as that presented for the detailed assessment above for construction, as the magnitude of impact and sensitivity of the receptor during the decommissioning phase will not be greater than for the construction phase.

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6.10.3 Loss or damage of fishing gear due to snagging

- 6.10.3.1 For loss or damage of fishing gear due to snagging, the potential significant effect for the Morgan Generation Assets alone, across all phases, is assessed as negligible for all receptor groups other than the Scottish west coast scallop vessels and Isle of Man scallop vessels. Therefore, only the Scottish west coast scallop vessels and Isle of Man scallop vessels have been considered within the CEA for this impact, as there is not considered to be a potential for cumulative effects with other plans, projects or activities for the other receptor groups.

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Table 6.36: Cumulative effects assessment for loss or damage of fishing gear due to snagging for Scottish west coast scallop vessels and Isle of Man scallop vessels.

	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
Construction			
Magnitude of impact	<p>The cumulative effects assessment for Scenario 1 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets. <p>Given the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, in addition to the safety aspects that would be applied by all other projects, the cumulative impacts would remain as assessed for the Morgan Generation Assets alone.</p> <p>The cumulative impact for the Scottish west coast scallop vessels and Isle of Man scallop vessels is predicted to be of local spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptors directly. The magnitude of cumulative impact for these receptors is, therefore, considered to be negligible.</p>	<p>The cumulative effects assessment for Scenario 2 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Generation Assets • Transmission Assets. <p>Given the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, in addition to the safety aspects that would be applied by all other projects, the cumulative impacts would remain as assessed for the Morgan Generation Assets alone.</p> <p>The cumulative impact for the Scottish west coast scallop vessels and Isle of Man scallop vessels is predicted to be of local spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptors directly. The magnitude of cumulative impact for these receptors is, therefore, considered to be negligible.</p>	<p>Tier 1</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 1 project listed in Table 6.33. <p>Given the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, in addition to the safety aspects and commitments that would be applied the Mona Offshore Wind Project (Mona Offshore Wind Limited, 2024), the cumulative impacts would remain as assessed for the Morgan Generation Assets alone.</p> <p>The cumulative impact for the Scottish west coast scallop vessels and Isle of Man scallop vessels is predicted to be of local spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptors directly. The magnitude of cumulative impact for these receptors is, therefore, considered to be negligible.</p>

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	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<p>Tier 2</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets • Tier 2 projects and plans listed in Table 6.33. <p>Given the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, in addition to the safety aspects that would be applied by all other projects, the cumulative impacts would remain as assessed for the Morgan Generation Assets alone.</p> <p>The cumulative impact for the Scottish west coast scallop vessels and Isle of Man scallop vessels is predicted to be of local spatial extent, long term duration, intermittent, and with high reversibility due the temporary nature of the works. It is predicted that the impact will affect the receptors directly. The magnitude of cumulative impact for these receptors is, therefore, considered to be negligible.</p> <p>Tier 3</p> <p>The cumulative effects assessment for Scenario 3 considers the following:</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Transmission Assets

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	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
			<ul style="list-style-type: none"> • Tier 3 designated sites listed in Table 6.33. <p>As all projects/plans within Tier 3 are designated sites, cumulative loss or damage to fishing gear due to snagging will not exceed the cumulative assessment undertaken for the Morgan Generation Assets and the Transmission Assets alone (Scenario 1). Snagging risks may occur as a result of infrastructure on the seabed, such as inter-array cables, offshore export cables and associated cable protection.</p> <p>The magnitude of cumulative impact for the Scottish west coast scallop vessels and Isle of Man scallop vessels is, therefore, considered to be negligible.</p>
<p>Sensitivity of receptor</p>	<p>Although vessels within this receptor group exhibit a relatively high operational range, they possess limited spatial tolerance due to their high dependence upon the commercial fisheries study area for queen scallop dredging. The Scottish west coast scallop vessels also have a limited ability to deploy alternative gear. During consultation, this receptor group clarified that penetration of gear varied between 0.05-0.25 m. The nature of the gear deployed means that the vulnerability of this receptor group is high, and the method of fishing by scallop dredgers, means that vessels need to tow nets/trawls under significant power, and at defined speeds. The sensitivity of the receptor is, therefore, considered to be high.</p> <p>During consultation, the Isle of Man scallop vessels receptor provided information on penetration depths of gear and requested a minimum burial depth of 1.5 m; penetration of gear depended on the gear type, with otter trawl gear and queen scallop dredge gear penetrating less than king scallop dredge gear. Vessels within this receptor group deploy both otter trawls and Newhaven dredges. The nature and penetration depth of Newhaven dredges means that the vulnerability of this receptor group is high, and the method of fishing by scallop dredgers, means that vessels need to tow nets/trawls under significant power, and at defined speeds. The sensitivity of this receptor is considered to be high.</p>		

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	<p>Scenario 1 Morgan Generation Assets + Transmission Assets</p>	<p>Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets</p>	<p>Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects</p>
<p>Significance of effect</p>	<p>Overall, the magnitude of the cumulative impact is deemed to be negligible and the sensitivity of the receptor is considered to be high for both the Scottish west coast scallop vessels and Isle of Man scallop vessels. The cumulative effect for these receptors will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p>	<p>Overall, the magnitude of the cumulative impact is deemed to be negligible and the sensitivity of the receptor is considered to be high for both the Scottish west coast scallop vessels and Isle of Man scallop vessels. The cumulative effect for these receptors will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p>	<p>Tier 1</p> <p>Overall, the magnitude of the cumulative impact is deemed to be negligible and the sensitivity of the receptor is considered to be high for both the Scottish west coast scallop vessels and Isle of Man scallop vessels. The cumulative effect for these receptors will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 2</p> <p>Overall, the magnitude of the cumulative impact is deemed to be negligible and the sensitivity of the receptor is considered to be high for both the Scottish west coast scallop vessels and Isle of Man scallop vessels. The cumulative effect for these receptors will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p> <p>Tier 3</p> <p>Overall, the magnitude of the cumulative impact is deemed to be negligible and the sensitivity of the receptor is considered to be high for both the Scottish west coast scallop vessels and Isle of Man scallop vessels. The cumulative effect for these receptors will, therefore, be of minor adverse significance, which is not significant in EIA terms.</p>

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	Scenario 1 Morgan Generation Assets + Transmission Assets	Scenario 2: Morgan Generation Assets + Morecambe Generation Assets + Transmission Assets	Scenario 3: Morgan Generation Assets + Transmission Assets + Tier 1, Tier 2, Tier 3 projects
Magnitude of impact	Given the proposed measures adopted as part of the Morgan Generation Assets and the commitments to follow standard protocols, in addition to the safety aspects that would be applied by all other projects, the cumulative magnitude of impact for both the Scottish west coast scallop vessels and Isle of Man scallop vessels would remain as assessed for the Morgan Generation Assets alone. The magnitude of cumulative impact for these receptors is, therefore, considered to be negligible .		
Sensitivity of receptor	The sensitivity of both the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is the same as that presented for the detailed assessment above for construction.		
Significance of effect	Overall, the magnitude of the cumulative impact for both the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is deemed to be negligible and the sensitivity of the receptor is considered to be high. The cumulative significance of effect for these receptors will, therefore, be of minor adverse significance, which is not significant in EIA terms.		
Decommissioning			
Magnitude of impact	The cumulative magnitude of impact for both the Scottish west coast scallop vessels and Isle of Man scallop vessels is the same as that presented for the detailed assessment above for construction, as the impacts of the decommissioning phase will not be greater than for the construction phase.		
Sensitivity of receptor	The sensitivity of both the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is the same as that presented for the detailed assessment above for construction		
Significance of effect	The significance of effect of both the Scottish west coast scallop vessels and Isle of Man scallop vessels receptors is the same as that presented for the detailed assessment above for construction, as the magnitude of impact and sensitivity of these receptors during the decommissioning phase will not be greater than for the construction phase.		

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6.10.4 Potential impacts on commercially important fish and shellfish resources

6.10.4.1 The following potential cumulative impacts on fish and shellfish ecology via the construction, operations and maintenance, and decommissioning phases of the Morgan Generation Assets have been identified, which are relevant to commercial fish species:

- Temporary habitat loss/disturbance
- Underwater sound impacting fish and shellfish receptors
- Increased SSCs and associated sediment deposition
- Long-term habitat loss
- Colonisation of hard structures
- EMFs from subsea electrical cabling
- Disturbance/remobilisation of sediment-bound contaminants.

6.10.4.2 These potential cumulative impacts on fish and shellfish ecology are assessed within Volume 2, Chapter 3: Fish and Shellfish Ecology of the Environmental Statement.

6.10.4.3 The fish and shellfish ecology cumulative assessment concluded that overall, there will be no significant cumulative effects from the Morgan Generation Assets alongside other projects/plans, with the exception of underwater sound impacts, of **moderate adverse** significance, to herring during the construction phase and only during their spawning season (Volume 2, Chapter 3: Fish and Shellfish Ecology of the Environmental Statement). Therefore, a significant impact is predicted for the herring vessels receptor group.

6.10.4.4 However, as discussed for the Morgan Generation Assets alone (section 6.8.6), the project has committed to the development of an Underwater Sound Management Strategy to reduce sound levels associated with significant impacts to environmentally acceptable level. This Strategy will be developed and agreed with stakeholders post-consent. Residual effects following implementation of the Strategy are expected to be of minor adverse significance, which is not significant in EIA terms.

6.10.5 Future monitoring

6.10.5.1 Table 6.37 below outlines the monitoring commitments for commercial fisheries.

Table 6.37: Monitoring commitments.

Environmental effect	Monitoring commitment	Means of implementation
Loss or damage to fishing gear due to snagging on inter-array and/or interconnector cables.	Preparation of an Offshore Construction Method Statement post-consent with details of cable monitoring to reduce snagging risk.	Secured within the deemed marine licence(s) in the draft DCO.

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6.11 Transboundary Effects

6.11.1.1 A screening of transboundary effects has been carried out and any potential for significant transboundary effects with regard to commercial fisheries from the Morgan Generation Assets upon the interests of other states has been assessed as part of this Environmental Statement. The potential transboundary impacts assessed within Volume 5, Annex 5.2: Transboundary screening of the Environmental Statement, are summarised below. Potential impacts on both UK and foreign commercial fishing fleets have been considered as part of this impact assessment (section 6.8); it was predicted that there will be no significant effects on Irish and Belgian vessels which operate within the commercial fisheries study area. Transboundary impacts outside UK waters are as follows:

- Potential effects on commercially important fish and shellfish resources will be restricted to the Morgan Array Area and immediate surrounding areas, with the exception of underwater noise and the impacts of increased SSCs and associated sediment deposition. Effects of underwater noise on fish and shellfish receptors, and therefore commercial fisheries receptors, are not predicted to extend beyond UK and Isle of Man waters. The identified tidal excursion of 20 km means that any increased SSC is likely to settle out before crossing any international boundaries, suggesting this impact is unlikely to have any significant transboundary effect on fish and shellfish stocks and therefore commercial fisheries receptors. The potential transboundary impact of effects on commercially important fish and shellfish stocks is concluded to be not significant in EIA terms.
- Potential impacts on both UK and foreign commercial fishing fleets have been considered as part of this impact assessment (section 6.8); it was predicted that there will be no significant effects on Irish and Belgian vessels, which operate within the commercial fisheries study area. Transboundary effects on commercial fishing fleets from Belgium and Ireland, in terms of displacement from the Morgan Array Area into alternative grounds, are unlikely, given that activity by these fleets have been observed at relatively low levels across the Morgan Array Area. The potential transboundary impact of effects on displacement of non-UK commercial fishing vessels is concluded to be not significant in EIA terms.

6.12 Inter-related effects

6.12.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the proposal on the same receptor. These are considered to be:

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Morgan Generation Assets (construction, operations and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor, than if just assessed in isolation in these three phases (e.g. subsea noise effects from piling, operational wind turbines, vessels and decommissioning)
- Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on commercial fisheries, such as direct habitat loss or disturbance, sediment plumes, scour, jack-up vessel use etc., may interact to produce a different, or greater effects on this receptor than when the effects are considered

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in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.

- 6.12.1.2 A description of the likely interactive effects arising from the Morgan Generation Assets on commercial fisheries is provided in Volume 2, Chapter 15: Inter-related effects of the Environmental Statement.

Project lifetime effects

- 6.12.1.3 It is not anticipated that effects on commercial fishing vessels across all phases of the Morgan Generation Assets will interact in such a way to result in combined effects of greater significance than the assessment of each individual phase.

Receptor-led effects

- 6.12.1.4 Spatial and temporal interactions between different impacts have the potential to exist:
- Inter-related effects may arise from a combination of supply chain benefits for local fishing vessels and reduction in loss or restricted access to fishing grounds; this is because fishing vessels are likely to be providing marine operational support during periods of construction or major maintenance works which would have resulted in a loss or restricted access to fishing grounds if the vessel had not been providing support to the Morgan Generation Assets. This means that the benefit to the local fishing vessels, as a result of the supply chain opportunities is acting more as an alleviation of potential losses than an additional benefit. It is therefore predicted that any potential inter-related effect will reduce the beneficial significance of supply chain opportunities, which would result in a negligible beneficial significance.
 - There is potential for an inter-related effect from the combination of the loss or restricted access to fishing grounds and the consequent displacement of fishing activity into other areas. This could result in increased gear conflict and pressure on other fishing grounds. During construction, offshore static gear vessels may be required to relocate pots from areas of activity, which could increase intensity of activity in other areas or cause conflict with mobile gear species (e.g. scallop vessels). However, with successful implementation of the measures outlined in section 6.7 and 6.8, and the temporary nature of the works, it is not predicted that there will be any inter-related effect of greater significance than those already assessed in isolation.
 - During the operations and maintenance phase of the Morgan Generation Assets, there will be no complete exclusions to mobile or static vessels, however some mobile gear vessels may not fish within the Morgan Array Area due to risks associated with the minimum spacing of wind turbines; this could result in conflict with static gear vessels or other mobile gear vessels and increase pressure on other fishing grounds. With consideration of the measures outlined in section 6.7 and 6.8, it is anticipated that the appropriately mitigated loss of access will reduce displacement and, therefore, any inter-related effect will not be of greater significance than those assessed in isolation (**negligible to minor adverse** significance).
 - Impacts on commercially important fish and shellfish species from direct habitat loss or disturbance, sediment plumes etc are assessed in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.

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- Increased collision and allision risk to commercial fishing vessels has been considered in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

6.13 Summary of impacts, mitigation measures and monitoring

- 6.13.1.1 Information on commercial fisheries within the commercial fisheries study area was collected through a review of official datasets; additional information and knowledge obtained through consultation with fisheries groups; and site-specific surveys.
- 6.13.1.2 Table 6.38 presents a summary of the potential impacts, measures adopted as part of the Morgan Generation Assets and residual effects in respect to commercial fisheries. The impacts assessed include loss or restricted access to fishing grounds, displacement of fishing activity, interference with fishing activity, temporary increase in steaming distances, loss of damage to fishing gear due to snagging, potential impacts on commercially important fish stocks, and supply chain opportunities for local fishing vessels. Overall, it is concluded that there will be no significant effects arising from the Morgan Generation Assets during the construction, operations/maintenance or decommissioning phases in relation to commercial fisheries following the implementation of embedded and further mitigation measures
- 6.13.1.3 Table 6.39 presents a summary of the potential cumulative impacts, mitigation measures and residual effects. The cumulative impacts assessed include loss or restricted access to fishing grounds, interference with fishing activity, loss of damage to fishing gear due to snagging, and potential impacts on commercially important fish stocks. Overall, it is concluded that there will be no significant cumulative effects on commercial fisheries from the Morgan Generation Assets alongside other projects/plans following the implementation of embedded and further mitigation measures
- 6.13.1.4 The following potential transboundary impacts have been identified in regard to effects of the Morgan Generation Assets and concluded not significant in EIA terms:
- Potential effects on commercially important fish and shellfish resources
 - Displacement of fishing vessels.

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Table 6.38: Summary of potential environmental effects, mitigation and monitoring.

^a C=construction, O=operations and maintenance, D=decommissioning.

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
Loss or restricted access to fishing grounds	✓	✓	✓	<p>Development and adherence to an Offshore EMP, which includes a FLCP.</p> <p>Notification of construction, maintenance and decommissioning activities will be issued via NTMs.</p> <p>Use of advisory clearance distances (around cable installation vessels) and safety zones (OSP/WTG) during construction and periods of maintenance.</p> <p>Development of and adherence to a CMS which includes a CSIP. The CSIP will incorporate the CBRA.</p> <p>Development and adherence to a DP with roughly north to south alignment of wind turbine rows and will include two lines of orientation for navigation and SAR access.</p> <p>Layout Principles will be agreed with the MMO, in consultation with the MCA and Trinity House,</p>	<p>Offshore static gear vessels</p> <p>C: Low</p> <p>O: Negligible</p> <p>D: Low</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Low</p> <p>O: Low</p> <p>D: Low</p> <p>Scallop vessels – Isle of Man</p> <p>C: Low</p> <p>O: Negligible</p> <p>D: Low</p> <p>Other scallop vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible</p>	<p>Offshore static gear vessels</p> <p>C: Low</p> <p>O: Low</p> <p>D: Low</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Medium</p> <p>O: Medium</p> <p>D: Medium</p> <p>Scallop vessels – Isle of Man</p> <p>C: Medium</p> <p>O: Medium</p> <p>D: Medium</p> <p>Other scallop vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Herring vessels</p> <p>C: Low</p>	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Minor</p> <p>O: Minor</p> <p>D: Minor</p> <p>Scallop vessels – Isle of Man</p> <p>C: Minor</p> <p>O: Negligible</p> <p>D: Minor</p> <p>Other scallop vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible</p>	None.	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Minor</p> <p>O: Minor</p> <p>D: Minor</p> <p>Scallop vessels – Isle of Man</p> <p>C: Minor</p> <p>O: Negligible</p> <p>D: Minor</p> <p>Other scallop vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible</p>	None proposed.

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
				<p>to include infrastructure spacings at a minimum of 1,400 m apart.</p> <p>Annual reviews for first five years of operations and maintenance phase within the Morgan Array Area.</p> <p>Implementation of a Scallop Mitigation Zone (SMZ) over an area of core scallop grounds within the Morgan Array Area.</p> <p>Development of and adherence to an ANMP.</p> <p>'As-laid' co-ordinates of cables within the Morgan Array Area shall be recorded and submitted to the UKHO and KIS-ORCA Service.</p>	<p>O: Negligible</p> <p>D: Negligible</p>	<p>O: Low</p> <p>D: Low</p>	<p>O: Negligible</p> <p>D: Negligible</p>		<p>O: Negligible</p> <p>D: Negligible</p>	
Displacement of fishing activity into other areas	✓	✓	✓	<p>Development and adherence to an Offshore EMP, which includes a FLCP.</p> <p>Notification of construction, maintenance and decommissioning activities will be issued via NtMs.</p> <p>Use of advisory clearance distances (around cable installation vessels) and safety</p>	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>	<p>Offshore static gear vessels</p> <p>C: Low</p> <p>O: Low</p> <p>D: Low</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>	None	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>	None proposed.

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Description of impact	Phase ^a C O D	Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
		<p>zones (OSP/WTG) during construction and periods of maintenance.</p> <p>Development of and adherence to a CMS which includes a CSIP. The CSIP will incorporate the CBRA.</p> <p>Development and adherence to a DP with roughly north to south alignment of wind turbine rows and will include two lines of orientation for navigation and SAR access.</p> <p>Layout Principles will be agreed with the MMO, in consultation with the MCA and Trinity House, to include infrastructure spacings at a minimum of 1,400 m apart.</p> <p>Annual reviews for first five years of operations and maintenance phase within the Morgan Array Area.</p> <p>Implementation of a Scallop Mitigation Zone (SMZ) over an area of core scallop grounds within the Morgan Array Area.</p> <p>Development of and adherence to an ANMP.</p>	<p>Scallop vessels – Scottish west coast</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p><i>Nephrops</i> vessels</p> <p>C: Negligible O: Negligible D: Negligible</p>	<p>Scallop vessels – Scottish west coast</p> <p>C: Medium O: Medium D: Medium</p> <p>Scallop vessels – Isle of Man</p> <p>C: Medium O: Medium D: Medium</p> <p>Other scallop vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels</p> <p>C: Low O: Low D: Low</p> <p><i>Nephrops</i> vessels</p> <p>C: Negligible O: Negligible D: Negligible</p>	<p>Scallop vessels – Scottish west coast</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p><i>Nephrops</i> vessels</p> <p>C: Negligible O: Negligible D: Negligible</p>		<p>Scallop vessels – Scottish west coast</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible O: Negligible D: Negligible</p> <p><i>Nephrops</i> vessels</p> <p>C: Negligible O: Negligible D: Negligible</p>	

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
				'As-laid' co-ordinates of cables within the Morgan Array Area shall be recorded and submitted to the UKHO and KIS-ORCA Service.						
Interference with fishing activity	✓	✓	✓	<p>Ongoing liaison with the fishing industry through the CFLO and FIR and adherence to good practice guidance with regards to fisheries liaison.</p> <p>Development and adherence to an Offshore EMP, which includes a FLCP.</p> <p>Notification of construction, maintenance and decommissioning activities will be issued via NtMs..</p> <p>Use of advisory clearance distances (around cable installation vessels) and safety zones (OSP/WTG) during construction and periods of maintenance.</p> <p>Development of and adherence to an ANMP.</p> <p>Development of and adherence to a CMS which includes a CSIP.</p>	<p>Offshore static gear vessels C: Low O: Low D: Low</p> <p>Beam trawl vessels C: Low O: Low D: Low</p> <p>Scallop vessels – Scottish west coast C: Low O: Low D: Low</p> <p>Scallop vessels – Isle of Man C: Low O: Low D: Low</p> <p>Other scallop vessels C: Low O: Low</p>	<p>Offshore static gear vessels C: Medium O: Medium D: Medium</p> <p>Beam trawl vessels C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels C: Negligible O: Negligible</p>	<p>Offshore static gear vessels C: Minor O: Minor D: Minor</p> <p>Beam trawl vessels C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels C: Negligible O: Negligible</p>	None	<p>Offshore static gear vessels C: Minor O: Minor D: Minor</p> <p>Beam trawl vessels C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels C: Negligible O: Negligible</p>	None proposed.

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
				<p>The CSIP will incorporate the CBRA.</p> <p>Development and adherence to a DP with roughly north to south alignment of wind turbine rows and will include two lines of orientation for navigation and SAR access.</p> <p>'As-laid' co-ordinates of cables within the Morgan Array Area shall be recorded and submitted to the UKHO and KIS-ORCA Service.</p> <p>Implementation of a Scallop Mitigation Zone (SMZ) over an area of core scallop grounds within the Morgan Array Area.</p>	<p>D: Low</p> <p>Herring vessels</p> <p>C: Low</p> <p>O: Low</p> <p>D: Low</p>	<p>D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>	<p>D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>		<p>D: Negligible</p> <p>Herring vessels</p> <p>C: Negligible</p> <p>O: Negligible</p> <p>D: Negligible</p>	
Temporary increase in steaming distances	✓	✗	✓	<p>Ongoing liaison with the fishing industry through the CFLO and FIR and adherence to good practice guidance with regards to fisheries liaison.</p> <p>Development and adherence to an Offshore EMP, which includes a FLCP.</p> <p>Notification of construction, maintenance and</p>	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Negligible</p>	<p>Offshore static gear vessels</p> <p>C: Low</p> <p>D: Low</p> <p>Beam trawl vessels</p> <p>C: Low</p> <p>D: Low</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Low</p>	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Negligible</p>	None.	<p>Offshore static gear vessels</p> <p>C: Negligible</p> <p>D: Negligible</p> <p>Beam trawl vessels</p> <p>C: Negligible</p> <p>D: Negligible</p> <p>Scallop vessels – Scottish west coast</p> <p>C: Negligible</p>	None proposed.

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Description of impact	Phase ^a C O D	Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
		<p>decommissioning activities will be issued via NtMs..</p> <p>Use of advisory clearance distances (around cable installation vessels) and safety zones (OSP/WTG) during construction and periods of maintenance.</p> <p>Development of and adherence to an ANMP.</p> <p>Development of and adherence to a CMS which includes a CSIP. The CSIP will incorporate the CBRA.</p> <p>Development and adherence to a DP with roughly north to south alignment of wind turbine rows and will include two lines of orientation for navigation and SAR access.</p> <p>'As-laid' co-ordinates of cables within the Morgan Array Area shall be recorded and submitted to the UKHO and KIS-ORCA Service.</p> <p>Implementation of a Scallop Mitigation Zone (SMZ) over an area of core scallop grounds</p>	<p>D: Negligible Scallop vessels – Isle of Man</p> <p>C: Negligible D: Negligible Other scallop vessels</p> <p>C: Negligible D: Negligible Herring vessels</p> <p>C: Negligible D: Negligible</p>	<p>D: Low Scallop vessels – Isle of Man</p> <p>C: Low D: Low Other scallop vessels</p> <p>C: Low D: Low Herring vessels</p> <p>C: Low D: Low</p>	<p>D: Negligible Scallop vessels – Isle of Man</p> <p>C: Negligible D: Negligible Other scallop vessels</p> <p>C: Negligible D: Negligible Herring vessels</p> <p>C: Negligible D: Negligible</p>		<p>D: Negligible Scallop vessels – Isle of Man</p> <p>C: Negligible D: Negligible Other scallop vessels</p> <p>C: Negligible D: Negligible Herring vessels</p> <p>C: Negligible D: Negligible</p>	

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
				within the Morgan Array Area.						
Loss or damage to fishing gear due to snagging	✓	✓	✓	<p>Ongoing liaison with the fishing industry through the CFLO and FIR and adherence to good practice guidance with regards to fisheries liaison.</p> <p>Development and adherence to an Offshore EMP, which includes a FLCP.</p> <p>Notification of construction, maintenance and decommissioning activities will be issued via NtMs..</p> <p>Use of advisory clearance distances (around cable installation vessels) and safety zones (OSP/WTG) during construction and periods of maintenance.</p> <p>Development of and adherence to an ANMP.</p> <p>Development of and adherence to a CMS which includes a CSIP. The CSIP will incorporate the CBRA.</p> <p>Development and adherence to a DP with roughly north to south</p>	<p>Offshore static gear vessels C: Negligible O: Negligible D: Negligible</p> <p>Beam trawl vessels C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Isle of Man C: Negligible O: Negligible D: Negligible</p> <p>Other scallop vessels C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels C: Negligible</p>	<p>Offshore static gear vessels C: Low O: Low D: Low</p> <p>Beam trawl vessels C: Medium O: Medium D: Medium</p> <p>Scallop vessels – Scottish west coast C: High O: High D: High</p> <p>Scallop vessels – Isle of Man C: High O: High D: High</p> <p>Other scallop vessels C: Medium O: Medium D: Medium</p> <p>Herring vessels C: Negligible</p>	<p>Offshore static gear vessels C: Negligible O: Negligible D: Negligible</p> <p>Beam trawl vessels C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor</p> <p>Scallop vessels – Isle of Man C: Minor O: Minor D: Minor</p> <p>Other scallop vessels C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels C: Negligible</p>	None.	<p>Offshore static gear vessels C: Negligible O: Negligible D: Negligible</p> <p>Beam trawl vessels C: Negligible O: Negligible D: Negligible</p> <p>Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor</p> <p>Scallop vessels – Isle of Man C: Minor O: Minor D: Minor</p> <p>Other scallop vessels C: Negligible O: Negligible D: Negligible</p> <p>Herring vessels C: Negligible</p>	Preparation of an Offshore CMS post-consent with details of cable monitoring to reduce loss or damage to fishing gear due to snagging.

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
				<p>alignment of wind turbine rows and will include two lines of orientation for navigation and SAR access.</p> <p>'As-laid' co-ordinates of cables within the Morgan Array Area shall be recorded and submitted to the UKHO and KIS-ORCA Service.</p> <p>Implementation of a Scallop Mitigation Zone (SMZ) over an area of core scallop grounds within the Morgan Array Area.</p>	O: Negligible D: Negligible	O: Negligible D: Negligible	O: Negligible D: Negligible		O: Negligible D: Negligible	
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	See Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Medium	Low - High	Minor - Moderate	Underwater Sound Management Strategy post-consent to define appropriate measures to reduce the magnitude of impact to environmentally acceptable levels, and thus reduce the impact.	Minor	None proposed.
Supply chain opportunities for	✓	✓	✓	Development and adherence to an Offshore EMP that	Offshore static gear vessels C: Low	Offshore static gear vessels C: Medium	Offshore static gear vessels C: Minor	None	Offshore static gear vessels C: Minor	None proposed.

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
	C	O	D							
local fishing vessels				includes a FLCP which that sets out use of guard vessels where required.	O: Negligible D: Low Beam trawl vessels C: Low O: Negligible D: Low Scallop vessels – Scottish west coast C: Low O: Negligible D: Low Scallop vessels – Isle of Man C: Low O: Negligible D: Low Other scallop vessels C: Low O: Negligible D: Low Herring vessels C: Low O: Negligible D: Low	O: Medium D: Medium Beam trawl vessels C: Negligible O: Negligible D: Negligible Scallop vessels – Scottish west coast C: Low O: Low D: Low Scallop vessels – Isle of Man C: Medium O: Medium D: Medium Other scallop vessels C: Low O: Low D: Low Herring vessels C: Medium O: Medium D: Medium	O: Minor D: Minor Beam trawl vessels C: Negligible O: Negligible D: Negligible Scallop vessels – Scottish west coast C: Minor O: Negligible D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor Other scallop vessels C: Minor O: Negligible D: Minor Herring vessels C: Minor O: Minor D: Minor		O: Minor D: Minor Beam trawl vessels C: Negligible O: Negligible D: Negligible Scallop vessels – Scottish west coast C: Minor O: Negligible D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor Other scallop vessels C: Minor O: Negligible D: Minor Herring vessels C: Minor O: Minor D: Minor	
Potential impacts on commercial fisheries as a	✓	✓	✓	Development and adherence to an	Low	Negligible – High	Negligible – Minor	None	Negligible – Minor	None

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Description of impact	Phase ^a C O D			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Future monitoring
result of increased risk of introduction and spread of INNS				Offshore EMP, which includes a MPCP.						

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Table 6.39: Summary of potential cumulative environmental effects, mitigation and monitoring.

^a C=construction, O=operations and maintenance, D=decommissioning

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Scenario 1										
Loss or restricted access to fishing grounds	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Low O: Low D: Low Scallop vessels – Isle of Man C: Low O: Low D: Low	Scallop vessels – Scottish west coast C: Medium O: Medium D: Medium Scallop vessels – Isle of Man C: Medium O: Medium D: Medium	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None proposed.
Interference with fishing activity	✓	✓	✓	Same as described for the same impact in Table 6.38.	Offshore static gear vessels C: Low O: Low D: Low	Offshore static gear vessels C: Medium O: Medium D: Medium	Offshore static gear vessels C: Minor O: Minor D: Minor	None.	Offshore static gear vessels C: Minor O: Minor D: Minor	None proposed.
Loss or damage to fishing gear due to Loss or damage to fishing gear due to snagging	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible Scallop vessels – Isle of Man C: Negligible O: Negligible	Scallop vessels – Scottish west coast C: High O: High D: High Scallop vessels – Isle of Man C: High O: High	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor	Preparation of an Offshore CMS post-consent with details of cable monitoring to reduce loss or damage to fishing gear due to snagging.

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	See Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Negligible - Medium	Low – High	Minor - Moderate	Underwater Sound Management Strategy post-consent to define appropriate measures to reduce the magnitude of impact to environmentally acceptable levels, and thus reduce the impact.	Minor	None proposed.
Scenario 2										
Loss or restricted access to fishing grounds	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Low O: Low D: Low Scallop vessels – Isle of Man C: Low O: Low D: Low	Scallop vessels – Scottish west coast C: Medium O: Medium D: Medium Scallop vessels – Isle of Man C: Medium O: Medium D: Medium	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None proposed.

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Interference with fishing activity	✓	✓	✓	Same as described for the same impact in Table 6.38.	Offshore static gear vessels C: Low O: Low D: Low	Offshore static gear vessels C: Medium O: Medium D: Medium	Offshore static gear vessels C: Minor O: Minor D: Minor	None.	Offshore static gear vessels C: Minor O: Minor D: Minor	None proposed.
Loss or damage to fishing gear due to snagging	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible Scallop vessels – Isle of Man C: Negligible O: Negligible D: Negligible	Scallop vessels – Scottish west coast C: High O: High D: High Scallop vessels – Isle of Man C: High O: High D: High	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	Preparation of an Offshore CMS post-consent with details of cable monitoring to reduce loss or damage to fishing gear due to snagging.
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	See Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Negligible - Medium	Low – High	Minor - Moderate	Underwater Sound Management Strategy post-consent to define appropriate measures to reduce the magnitude of impact to environmentally acceptable levels, and	Minor	None proposed.

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
								thus reduce the impact.		

Scenario 3

Tier 1

Loss or restricted access to fishing grounds	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Low O: Low D: Low Scallop vessels – Isle of Man C: Low O: Low D: Low	Scallop vessels – Scottish west coast C: Medium O: Medium D: Medium Scallop vessels – Isle of Man C: Medium O: Medium D: Medium	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None proposed.
Interference with fishing activity	✓	✓	✓	Same as described for the same impact in Table 6.38.	Offshore static gear vessels C: Low O: Low D: Low	Offshore static gear vessels C: Medium O: Medium D: Medium	Offshore static gear vessels C: Minor O: Minor D: Minor	None.	Offshore static gear vessels C: Minor O: Minor D: Minor	None proposed.
Loss or damage to fishing gear due to snagging	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible Scallop vessels – Isle of Man C: Negligible O: Negligible	Scallop vessels – Scottish west coast C: High O: High D: High Scallop vessels – Isle of Man C: High O: High	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor	Preparation of an Offshore CMS post-consent with details of cable monitoring to reduce loss or damage to fishing gear due to snagging.

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
					D: Negligible	D: High	D: Minor		D: Minor	
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	See Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Negligible - Medium	Low – High	Minor - Moderate	Underwater Sound Management Strategy post-consent to define appropriate measures to reduce the magnitude of impact to environmentally acceptable levels, and thus reduce the impact.	Minor	None proposed.
Tier 2										
Loss or restricted access to fishing grounds	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Low O: Low D: Low Scallop vessels – Isle of Man C: Low O: Low D: Low	Scallop vessels – Scottish west coast C: Medium O: Medium D: Medium Scallop vessels – Isle of Man C: Medium O: Medium D: Medium	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None proposed.

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Interference with fishing activity	✓	✓	✓	Same as described for the same impact in Table 6.38.	Offshore static gear vessels C: Low O: Low D: Low	Offshore static gear vessels C: Medium O: Medium D: Medium	Offshore static gear vessels C: Minor O: Minor D: Minor	None.	Offshore static gear vessels C: Minor O: Minor D: Minor	None
Loss or damage to fishing gear due to snagging	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible Scallop vessels – Isle of Man C: Negligible O: Negligible D: Negligible	Scallop vessels – Scottish west coast C: High O: High D: High Scallop vessels – Isle of Man C: High O: High D: High	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	Preparation of an Offshore CMS post-consent with details of cable monitoring to reduce loss or damage to fishing gear due to snagging.
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	See Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Negligible - Medium	Low – High	Minor - Moderate	Underwater Sound Management Strategy post-consent to define appropriate measures to reduce the magnitude of impact to environmentally acceptable levels, and	Minor	None proposed

MORGAN OFFSHORE WIND PROJECT GENERATION ASSETS

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
								thus reduce the impact.		
Tier 3										
Loss or restricted access to fishing grounds	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Low O: Low D: Low Scallop vessels – Isle of Man C: Low O: Low D: Low	Scallop vessels – Scottish west coast C: Medium O: Medium D: Medium Scallop vessels – Isle of Man C: Medium O: Medium D: Medium	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor D: Minor	None proposed.
Interference with fishing activity	✓	✓	✓	Same as described for the same impact in Table 6.38.	Offshore static gear vessels C: Low O: Low D: Low	Offshore static gear vessels C: Medium O: Medium D: Medium	Offshore static gear vessels C: Minor O: Minor D: Minor	None.	Offshore static gear vessels C: Minor O: Minor D: Minor	None proposed.
Loss or damage to fishing gear due to snagging	✓	✓	✓	Same as described for the same impact in Table 6.38.	Scallop vessels – Scottish west coast C: Negligible O: Negligible D: Negligible Scallop vessels – Isle of Man C: Negligible O: Negligible	Scallop vessels – Scottish west coast C: High O: High D: High Scallop vessels – Isle of Man C: High O: High	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor	None.	Scallop vessels – Scottish west coast C: Minor O: Minor D: Minor Scallop vessels – Isle of Man C: Minor O: Minor	Preparation of an Offshore CMS post-consent with details of cable monitoring to reduce loss or damage to fishing gear due to snagging.

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
					D: Negligible	D: High	D: Minor		D: Minor	
Potential impacts on commercially important fish and shellfish resources	✓	✓	✓	See Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.	Negligible - Medium	Low – High	Minor - Moderate	Underwater Sound Management Strategy post-consent to define appropriate measures to reduce the magnitude of impact to environmentally acceptable levels, and thus reduce the impact.	Minor	None proposed.

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