XLINKS MOROCCO-UK POWER PROJECT

Preliminary Environmental Information Report

Volume 3, Chapter 3: Commercial Fisheries

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Glossary

Term	Meaning
Applicant	Xlinks 1 Limited.
Beam trawl	A method of bottom trawling with a net that is held open by a beam, which is generally a heavy steel tube supported by steel trawl heads at each end. Tickler chains or chain mats, attached between the beam and the ground rope of the net, are used to disturb fish and crustaceans that rise up and fall back into the attached net.
Bycatch	Catch which is retained and sold but is not the target species for the fishery.
Demersal	Living on or near the seabed.
First sales value	The value at which fish and shellfish are offered for sale for the first time. First sale is considered to have taken place when the legal ownership of the fish or fisheries products changes from the vessel landing the fish to another business, person or legal entity.
Fish stock	Any natural population of fish which an isolated and self-perpetuating group of the same species.
Fishery	A group of vessel voyages which target the same species or use the same gear.
Fishing ground	An area of water or seabed targeted by fishing activity.
Fleet	A physical group of vessels sharing similar characteristics (e.g., nationality).
Flyseine	Flyseining, also known as flyshooting or demersal seining, is a fishing method involving use of long weighted ropes to herd fish into the mouth of the trawl net to target demersal species which live or feed on or near the seabed.
Gear type	The method / equipment used for fishing.
Hooked gear	Fishing gears using hooks include longlines and handlines. Longlining involves setting of a long length of line with baited hooks attached at regular intervals; this rig is set on the seabed or in midwater with a marker buoy at either end and allowed to fish for a set period. Handlining involves fishing using a rod and line or a hand-held line.
ICES statistical rectangles	ICES standardise the division of sea areas to enable statistical analysis of data. Each ICES statistical rectangle is ’30 min latitude by 1 degree longitude’ in size (approximately 30 x 30 nautical miles). A number of rectangles are amalgamated to create ICES statistical areas.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the Transition Joint Bay inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Landings	Quantitative description of amount of fish returned to port for sale, in terms of value or weight.
Nets	Nets refers to a wall of netting that hangs in the water column, typically made of monofilament or multifilament nylon. Net mesh size and position in the water column vary depending upon the target species. Nets are deployed and left to soak before being hauled. In the context of this document, ‘nets’ includes both anchored (fixed to seabed) and suspended (drift, moves with tide or current) nets.
Offshore Cable Corridor	The proposed corridor within which the offshore cables are proposed to be located, which is situated within the United Kingdom Exclusive Economic Zone.
Offshore Cables	The cables, situated within the UK Exclusive Economic Zone, which would bring electricity from its generation source to the landfall.
Offshore Infrastructure Area	The area within the Proposed Development Order Limits up to Mean Low Water Springs within which the offshore infrastructure is proposed to be located.

Term	Meaning
Otter trawl	A net with large rectangular boards (otter boards) which are used to keep the mouth of the trawl net open. Otter boards are made of timber or steel and are positioned in such a way that the hydrodynamic forces, acting on them when the net is towed along the seabed, pushes them outwards and prevents the mouth of the net from closing.
Pelagic	Of or relating to the open sea.
Pelagic trawl	A net used to target fish species in the mid water column.
Pots	Pots and traps are generally rigid structures into which fish or shellfish are guided or enticed through funnels that make entry easy but from which escape is difficult. There are many different styles and designs, each one has been designed to suit the behaviour of its target species.
Proposed Development	The element of the Xlinks Morocco-UK Power Project within the UK, which includes the offshore cables (from the UK Exclusive Economic Zone to landfall), landfall site, onshore Direct Current and Alternating Current cables, converter stations, road upgrade works and, based on current assumptions, the Alverdiscott Substation Connection Development.
Quota	A proportion of the Total Allowable Catch for a fish stock.
Scallop dredge	A 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.
Stock assessment	An assessment of the biological stock of a species and its status in relation to defined references points for biomass and fishing mortality.
String	A series of static fishing gear (pots) joined together to form a single deployable linear line of pots.
Study area	This is an area which is defined for each environmental topic which includes the Proposed Development Draft Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
Swept Area Ratio (SAR)	SAR (derived from VMS data) indicates the number of times in an annual period that a fishing gear makes contact with (or sweeps) the seabed surface. Surface SAR provides a proxy for fishing intensity.
Vessel Monitoring System (VMS)	A system used in commercial fishing to allow environmental and fisheries regulatory organizations to monitor, minimally, the position, time at a position, and course and speed of fishing vessels.
Xlinks Morocco UK Power Project (the 'Project')	This relates to the overall scheme from Morocco to the United Kingdom national grid, including all onshore and offshore elements of the transmission network (referred to as the 'Project')

Acronyms

Acronym	Meaning
AIS	Automatic Identification System
BEIS	The former Department for Business, Energy & Industrial Strategy
CBRA	Cable Burial Risk Assessment
CEA	Cumulative Effects Assessment
CEA	Cumulative Effects Assessment
Cefas	Centre for Environment, Fisheries and Aquaculture Science

Acronym	Meaning
CEMP	Construction Environmental Management Plan
DCF	Data Collection Framework
DCO	Development Consent Order
Defra	Department for Environment, Food & Rural Affairs
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMF	Electromagnetic Fields
ES	Environmental Statement
ESCA	European Subsea Cables Association
EU	European Union
FLO	Fisheries Liaison Officer
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables Group
GIS	Geographic Information System
ICES	International Council for the Exploration of the Sea
IFCA	Inshore Fisheries and Conservation Authority
JFS	Joint Fishery Statement
MAB	Man and the Biosphere (UNESCO programme)
MCA	Maritime and Coastguard Agency
MCZs	Marine Conservation Zones
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MMO	Marine Management Organisation
MPS	Marine Policy Statement
NAVTEX	NAVigational TEleX
NPS	National Policy Statement
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NtM	Notice to Mariners
PDE	Project Design Envelope
PLN	Port Letter and Numbers
SAC	Special Area of Conservation
SSC	Suspended Sediment Concentration
TAC	Total Allowable Catch
TCA	Trade and Cooperation Agreement
UK	United Kingdom
UKFEN	UK Fisheries Economic Network
UNESCO	United Nations Educational, Scientific and Cultural Organization
VMS	Vessel Monitoring System

Units

Units	Meaning
km	Kilometre
m	Metre
nm	Nautical mile
t	Tonne

3 COMMERCIAL FISHERIES

3.1 Introduction

3.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary findings of the Environmental Impact Assessment (EIA) work undertaken to date for the United Kingdom (UK) elements of the Xlinks Morocco-UK Power Project. For ease of reference, the UK elements of the Xlinks Morocco-UK Power Project are referred to in this chapter as the 'Proposed Development'.

3.1.2 This chapter considers the potential impacts and effects of the Proposed Development on commercial fisheries during the construction, operation and maintenance and decommissioning phases. Specifically, it relates to the offshore and coastal elements of the Proposed Development seaward of Mean High Water Springs (MHWS).

3.1.3 In particular, this PEIR chapter:

- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation undertaken to date;
- presents the potential environmental impacts and effects on all aspects of commercial fisheries arising from the Proposed Development, based on the information gathered and the analysis and assessments undertaken to date;
- identifies any assumptions and limitations encountered in compiling the environmental information; and
- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

3.1.4 The chapter should be read in conjunction with Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report.

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

- Volume 3, Chapter 2: Fish and Shellfish Ecology where impacts on the ecology of fish and shellfish, including species of commercial interest, are assessed; and
- Volume 3, Chapter 5: Shipping and Navigation where impacts on the navigational safety aspects of fishing activity are assessed.

3.1.6 This chapter considers commercial fisheries activity, which is understood as fishing activity legally undertaken where the catch is sold for taxable profit. Potential impacts of the Proposed Development on charter angling, defined as fishing for marine species where the purpose is recreation and not sale or trade, are assessed in Volume 3, Chapter 6: Other Marine Users of the PEIR.

3.1.7 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR and any refinements in design will be reviewed and taken into account, where appropriate, in preparation of the Environmental Statement that will accompany the application to the Planning Inspectorate for development consent.

3.2 Legislative and Policy Context

Legislation

3.2.1 This section details the legislation that applies to commercial fisheries, and which has been considered in this chapter of the PEIR.

3.2.2 The Marine and Coastal Access Act (2009) sets out provisions for marine management, including the management of commercial fishing activities, in the UK, and outlines the ways in which licensing, conservation and fisheries rules are to be enforced. The Act also establishes the Marine Management Organisation (MMO) as the public body responsible for the preparation and implementation of new marine plans, as well as enforcing fisheries and nature conservation regulations.

3.2.3 The UK Fisheries Act (2020) (23 Nov 2020) sets out a series of objectives for management of commercial fisheries as follows:

- (a) the sustainability objective;
- (b) the precautionary objective;
- (c) the ecosystem objective;
- (d) the scientific evidence objective;
- (e) the bycatch objective;
- (f) the equal access objective;
- (g) the national benefit objective; and
- (h) the climate change objective.

The Joint Fishery Statement (JFS) was published in November 2022 and outlines commitments for delivery of Fisheries Management Plans (FMPs) by UK fisheries administrators. Of relevance to fisheries operating in and around the Proposed Development is the planned implementation of FMPs for English and Welsh waters for the following species: brown crab and lobster, whelk, king scallop and bass. The JFS defines which fisheries administrator is responsible for the delivery of the FMPs, including development of co-management groups with the industry. Delivery of the FMPs, which will specify fisheries management actions required to maintain species stock levels, and which will be relevant to some of the commercial fishing fleets active in and around the Proposed Development, is expected by 2024.

Planning Policy Context

3.2.4 The Proposed Development will be located within UK inshore waters and the UK EEZ offshore waters - beyond 12 nautical miles (nm) from the English coast (with the onshore infrastructure located wholly within Devon, England). As set out in Volume 1, Chapter 1: Introduction, of the PEIR, the Secretary of State for the Department for Energy Security and Net Zero (DESNZ) has directed that elements of the Proposed Development are to be treated as development for which development consent is required under the Planning Act 2008, as amended.

National Policy Statements

3.2.5 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to the Proposed Development, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the 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); and
- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2023c).

3.2.6 **Table 3.1** sets out key aspects from the NPSs relevant to the Proposed Development, with particular reference to the need for and approach to consenting such infrastructure.

Table 3.1: Summary of relevant NPS policy

Summary of NPS requirement	How and where considered in the PEIR
NPS EN-1	
"Applicants for a Development Consent Order must take account of any relevant Marine Plans and are expected to complete a Marine Plan assessment as part of their project development, using this information to support an application for development consent." (paragraph 4.4.8 of NPS EN-1)	The commercial fisheries impact assessment takes account of the relevant Marine Plans, as outlined in **Table 3.2**.
NPS EN-3	
"Applicants should consider guidance on best practice for fisheries liaison, which has been jointly agreed by the renewables industry and fishing community." (paragraph 3.8.169 of NPS EN-3)	The commercial fisheries impact assessment takes account of relevant guidance, as confirmed in **section 3.4.**
"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 3,8.170 of NPS EN-3)	Potential transboundary effects are considered in **section 3.12.**
"Applicants should undertake early consultation with a cross-section of the fishing industry, as well as MMO, SNCBs, Defra and Welsh Government, to identify impacts, and actively encourage input from active fishermen to provide evidence of their use of the area to support the impact assessments." (paragraph 3.8.171 of NPS EN-3)	Consultation with statutory advisors and representatives of the fishing industry has commenced and is ongoing. Engagement is summarised in **section 0.**
"Where any part of a proposal involves a grid connection to shore, appropriate inshore fisheries groups should also be consulted." (paragraph 3.8.172 of NPS EN-3)	
"Applicants will be expected to undertake dialogue with the fishing industry during the planning and design of individual offshore wind farm proposals to maximise the potential for co-existence/co-location and reduce potential displacement." (paragraph 3.8.173 of NPS EN-3)	
"Applicant assessments should include robust baseline data and detailed surveys of the effects on fish stocks of commercial interest and any potential reduction in such stocks, as well as any likely constraints on fishing activity within the project's boundaries." (paragraph 3.8.174 of NPS EN-3)	Relevant surveys and data are detailed in Volume 3, Chapter 2: Fish and Shellfish Ecology of the PEIR, where impacts on fish stocks are also assessed. In addition, consultation with the fishing industry has identified key concerns about constraints on fishing activity as well as available baseline data, which have been taken into account within the commercial fisheries assessment (see **sections 3.8 to 3.11**).
"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.	Renewable generation sites are presented in Volume 3, Chapter 6: Other Marine Users, and shipping constraints across the region are presented in Volume 3, Chapter 5: Shipping and Navigation. A number of consented and future wind farm development sites are identified as part of the Cumulative Effects Assessment (e.g. Volume 1,

Summary of NPS requirement	How and where considered in the PEIR
The declaration of a safety zone excludes or restricts activities within the defined sea areas including commercial fishing. Where there is a possibility that safety zones will be sought applicant assessments should include potential effects on commercial fishing. 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 3.8.175 to 3.8.178 of NPS EN-3)	Appendix 5.3: CEA Screening Matrix), although there are no designated infrastructure related safety zones that impede on the Offshore Cable Corridor.
"Exclusion of certain types of fishing may make an area more productive for other types of fishing. Applicant assessments should therefore include detailed surveys of the effects on fish stocks of commercial interest and the potential reduction or increase in such stocks that will result from the presence of the wind farm development and of any safety zones." (paragraph 3.8.179 of NPS EN-3)	Relevant surveys and data are detailed in Volume 3, Chapter 2: Fish and Shellfish Ecology, of the PEIR, where impacts on fish stocks are also assessed.
"Any mitigation proposals should result from the applicant having detailed consultation with relevant representatives of the fishing industry, the MMO and the relevant Defra policy team in England and NRW and the relevant Welsh Government policy team in Wales." (paragraph 3.8.268 of NPS EN-3)	A range of commitments are presented within **section 3.7.**
"Mitigation should be designed to enhance where reasonably possible any potential medium and long-term positive benefits to the fishing industry, commercial fish stocks and the marine environment." (paragraph 3.8.269 of NPS EN-3)	
"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 3.8.336 of NPS EN-3)	A range of commitments to minimise adverse effects are presented within **section 3.7**. Further information on site selection (including development of the Offshore Cable Corridor route (with consideration of commercial fisheries interests) is provided in Volume 1, Chapter 4: Needs and Alternatives.
"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. Where the Secretary of State considers the wind farm would significantly impede protection of sustainable fisheries or fishing activity at recognised important fishing grounds, this should be attributed a correspondingly significant weight." (paragraph 3.8.337 and 3.8.338 of NPS EN-3)	The extent to which the Proposed Development impacts on recognised and important fishing grounds has been considered, and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**.

Summary of NPS requirement	How and where considered in the PEIR
"The Secretary of State should consider adverse or beneficial impacts on different types of commercial fishing on a case-by-case basis." (paragraph 3.8.339 of NPS EN-3)	The assessment outputs presented in this chapter are intended to support this consideration.
"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 3.8.340 of NPS EN-3)	Consultation with representatives of the fishing industry has commenced and is ongoing. Engagement is summarised in **section 0**. Existing guidance regarding liaison is noted (**section 3.4**) and is being applied by the Applicant.
"The Secretary of State will need to consider the extent to which disruption to the fishing industry, whether short term during preconstruction (e.g. surveying) or 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 3.8.341 of NPS EN-3)	The extent to which the Proposed Development may cause disruption to the fishing industry has been considered and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**. A range of commitments to minimise and mitigate adverse impacts are presented within **section 3.7**.
"Where an offshore wind farm could affect a species of fish that is of commercial interest, but is also of ecological value, the Secretary of State should refer to Section 2.8.109 of this NPS with regard to the latter." (paragraph 3.8.342 of NPS EN-3)	See Volume 3, Chapter 2: Fish and Shellfish Ecology, where impacts on fish stocks are assessed.

Marine Policy

UK Marine Policy Statement

3.2.7 The UK Marine Policy Statement (MPS) (HM Government, 2011) explicitly expresses support for the fishing sector, and with regard to displacement, advocates "*seeking solutions such as co-location of activity wherever possible*". Specifically, paragraphs 3.8.1, 3.8.2, and 2.3.1.5 stipulate that the process of marine planning should "*enable the co-existence of compatible activities wherever possible*" and supports the reduction of real and potential conflict as well as maximising compatibility and encouraging co-existence of activities.

South West Inshore and South West Offshore Marine Plans

3.2.8 **Table 3.2** presents a summary of the specific policies set out in the South West Inshore and South West Offshore Marine Plans (MMO, 2021) relevant to this chapter.

Table 3.2: Summary of inshore and offshore marine plan policies relevant to this chapter

Policy	Key provisions	How and where considered in the PEIR
SW-FISH-1	Proposals that support a sustainable fishing industry, including the industry's diversification, should be supported.	The extent to which the Proposed Development may cause disruption to the fishing industry has been considered and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**. A range of commitments to minimise and mitigate adverse impacts are presented within **section 3.7**.
SW-FISH-2	Proposals that enhance access for fishing activities should be supported. 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.	

North Devon Biosphere Reserve

3.2.9 The Proposed Development is located within the North Devon Biosphere Reserve, which is recognised under UNESCO's Man and the Biosphere (MAB) Programme and designated as an area for testing and demonstrating sustainable development on a sub-regional scale.

3.2.10 The North Devon Biosphere Reserve consists of three zones; a core zone centred around Braunton Burrows SAC / SSSI, a buffer zone consisting of the Taw Torridge Estuary (as far as Barnstaple and Bideford), and a transition zone formed by the catchment area of the rivers and streams that drain to the North Coast of Devon in addition to an area of sea as far out as Lundy.

3.2.11 The Biosphere Reserve is overseen by the North Devon Biosphere Reserve Partnership, which is a collaboration of 26 partnership organisations who work to deliver sustainable development through direct action, through advocacy and providing advice. The non-statutory 'North Devon Biosphere Reserve Strategy for Sustainable Development 2014 to 2024' (NDB undated) provides a context for stakeholders to deliver programmes and plans in support of the sustainable development of the Biosphere Reserve.

3.2.12 Within the North Devon Biosphere Reserve, non-statutory programmes and plans relevant to commercial fisheries include:

- Boat Stories programme - promoting use of sustainable fishmongers & buying locally landed sea fish in North Devon
- North Devon Marine Natural Capital Plan

3.2.13 The extent to which the Proposed Development impacts on the North Devon Biosphere Reserve and its relevant programmes / plans has been considered in this commercial fisheries chapter, and consultation will take place with the North Devon Biosphere Reserve Partnership ahead of ES stage to further characterise any potential impacts. Consultations and information sharing may provide

additional baseline characterisation data regarding commercial fisheries activities within the North Devon Biosphere Reserve area (local fisheries characterisations were undertaken in preparation of e.g. the Natural Capital Asset and Risk Register (Rees et al. 2019). Table 3.3 presents a summary of the specific policies set out in the North Devon Marine Natural Capital plan (North Devon UNESCO Biosphere Reserve, 2020) and the Strategy for Sustainable Development (NDB undated) relevant to this chapter.

Table 3.3: Summary of North Devon Biosphere Marine Natural Capital Plan and Strategy for Sustainable Development policies relevant to this chapter

Policy	Description	How and where considered in the PEIR
Marine Natural Capital Plan PL02: *Development or activities that will maintain and / or increase the cultural and economic value of inshore fisheries, including diversification, should demonstrate consideration of and compatibility with thresholds for sustainable use and be designed to maintain and, where possible, enhance ecosystems services and functions.*	*North Devon inshore fisheries hold important cultural, societal and economic value. PL02 seeks to support growth in this sector within sustainable exploitation limits and to promote innovative approaches to fisheries management that integrates with a 'whole-site' approach to marine biodiversity conservation. Protection and enhancement of ecological connectivity will benefit fish and shellfish populations that utilise multiple habitats as nursery areas or across different life stages.*	The extent to which the Proposed Development may cause disruption to the fishing industry has been considered and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**. A range of commitments to minimise and mitigate adverse impacts are presented within **section 3.7**.
Marine Natural Capital Plan PL11: *Facilitate the identification of potential areas, and support proposals that enable provision of marine renewable energy technologies, where there is a net gain for marine biodiversity and natural capital, and where conflict of use is mitigated.*	Description: *Renewable energy technologies contribute to the diversification and decarbonisation of the electricity grid. PL12* [PL11] *supports the identification of future leasing rounds and provides a level of certainty for other activities as to where future development may occur.*	The extent to which the Proposed Development may cause disruption to the fishing industry has been considered and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**. A range of commitments to minimise and mitigate adverse impacts are presented within **section 3.7,** which will specifically avoid any conflict of use.
Strategy for Sustainable Development ENV2	*Develop fishery management and methods in conjunction with a sustainable sea area management programme that includes Marine Conservation Zones that will effectively support both fisheries and conservation of marine ecosystem services. Targets: At least 10% of marine area is covered by*	The extent to which the Proposed Development may cause disruption to the fishing industry has been considered and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**. A range of commitments to minimise and mitigate adverse impacts are presented within **section 3.7.** The

Policy	Description	How and where considered in the PEIR
	protection and fishery economy is sustained	fishery economy will be sustained and protected.
Strategy for Sustainable Development ECON6	Target: *The Marine area out to 12 nautical miles is covered by an operation fisheries improvement plan linked to marine conservation zones and other fisheries management measures.*	The extent to which the Proposed Development may cause disruption to the fishing industry has been considered and consultation with fishing stakeholders in order to fully understand any potential impacts has been undertaken (see **section 0**). The results of the commercial fisheries assessment are presented in **sections 3.8 to 3.11**. A range of commitments to minimise and mitigate adverse impacts are presented within **section 3.7**.

3.3 Consultation and Engagement

3.3.1 In January 2024 the Applicant submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction, operational and decommissioning phases of the Proposed Development. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these areas.

3.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 07 March 2024. Key issues raised during the scoping process specific to commercial fisheries are listed in **Table 3.4**, together with details of how these issues have been addressed within the PEIR.

Table 3.4: Summary of Scoping Responses

Comment	How and where considered in the PEIR
Planning Inspectorate	
Several aspect chapters in the Scoping Report refer to fixed distance study areas with no explanation as to why these have been selected. The ES should ensure the study area for each aspect reflects the Proposed Development's ZoI and the impact assessment should be based on the ZoI from the Proposed Development with reference to potential effect pathways. Clear justification should be provided to support any distances applied.	The commercial fisheries study area is defined in **section 3.4**. In line with standard practice in commercial fisheries assessments, the study area is comprised of predetermined statistical areas across which fisheries data is gathered, and which overlap with the Proposed Development.
The Inspectorate acknowledges that data and knowledge regarding the baseline environment exists for the offshore area in which the Proposed Development would be located. The Inspectorate understands the benefits of utilising this information to supplement site-specific survey data but advises	Commercial fisheries baseline data sources are summarised in **Table 3.11**. Limitations associated with the data used to inform the description of the baseline environment, and how they have been managed, are described in the

that suitable care should be taken to ensure that the information in the ES remains representative and fit for purpose. The Applicant should make effort to agree the suitability of information used for the assessments in the ES with relevant consultation bodies.	Commercial Fisheries Baseline Report in Volume 3, Appendix 3.1. No concerns regarding commercial fisheries baseline data sources have been raised via the scoping process. Agreement on baseline data sources will be sought with the relevant consultation bodies as part of the ES process.
It is noted that the Scoping Report includes consideration of potential transboundary effects in relation to commercial fisheries. The Inspectorate recommends that the ES should identify whether the Proposed Development has the potential for significant transboundary effects, and if so, what these are, and which EEA States would be affected. The Inspectorate will undertake a transboundary screening on behalf of the SoS in due course.	Potential transboundary effects on commercial fisheries are considered in **section 3.12**. No significant effects are identified.
The ES should consider the removal of hard substate in the decommissioning (removal) phase, where likely significant effects could occur, or provide evidence demonstrating agreement with the relevant consultation bodies that significant effects are not likely to occur.	The effects of decommissioning on commercial fisheries are assessed in **section 3.10**. Applying a precautionary approach to assessment, the impacts identified in the assessment undertaken in respect of the construction phase are considered to also apply to decommissioning where removal of infrastructure is the preferred decommissioning scenario. If infrastructure is left in-situ at decommissioning, this would result in permanent impacts similar to that identified for the operational phase.
The Inspectorate is unclear why the potential impact of 'physical presence of infrastructure leading to gear snagging' during the construction, operation (excluding repair) and decommissioning (remove) phases uses n/a instead of indicating whether the phase of the Proposed Development is scoped in or out. It appears likely that as construction proceeds, there is an increasing risk that infrastructure would be present that could lead to gear snagging. Similarly, there remains the presence of infrastructure as a snagging risk during operational repair activities and until the cable is entirely removed (where this method is chosen). The Inspectorate therefore does not agree that that these stages can be scoped out of the assessment. Accordingly, the ES should include an assessment of this matter or provide a justification (for instance through explaining the relevant mitigation and how it has been secured) as to why likely significant effects would not arise.	Noted, and in agreement with the Inspectorate, the potential impact has been scoped back into assessment for all phases of the Proposed Development. Assessment outcomes are presented in **sections 3.8 to 3.10**.
The Scoping Report references various fishing restrictions including the Inshore Fisheries and Conservation Authorities (IFCA) and MMO byelaws to protect designated features. The ES should demonstrate that the Proposed Development does not undermine these byelaws or hinder the implementation of the management measures.	The Proposed Development is not anticipated to have significant residual effects on commercial fisheries. Reflecting this, the Proposed Development will not undermine existing byelaws or hinder the implementation of fisheries management measures.
The Scoping Report states that the offshore cable would be buried, where possible. The ES should	As confirmed in **Table 3.13**, the commercial fisheries assessment is based upon a maximum design

include an assessment of the effects of cable protection from methods other than burial, based on the worst-case scenario which has been defined for the area of cable protection likely to be required. The Applicant is encouraged to seek to agree cable burial depth and protection measures with relevant consultation bodies and stakeholders.	scenario that includes consideration of cable protection including but not limited to burial (i.e. the assessment is undertaken based on the potential maximum footprint of infrastructure on the seabed). Commitments to cable burial where possible are presented in **Table 3.14.** Consultations with relevant consultation bodies are ongoing and will further inform ES.
The Scoping Report states at Paragraph 8.10.13 (Underwater Noise) that consideration of potential underwater noise impacts on commercial fisheries is considered in Section 8.4. However, the Inspectorate is unable to find reference to underwater noise in this aspect chapter.	This commercial fisheries chapter assesses the potential for the Proposed Development to result in 'disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity' in **sections 3.8 to 3.10**.
The Inspectorate notes that an assessment of underwater noise is proposed to be undertaken for the fish and shellfish ecology assessment. The Commercial Fisheries impact assessment should draw upon and cross-reference to the findings of the fish and shellfish ecology assessment as appropriate.	This assessment is informed by the outcomes of the fish and shellfish ecology assessment presented in Volume 3, Chapter 2: Fish and Shellfish Ecology, with appropriate cross-referencing to that Chapter provided. This commercial fisheries chapter does not duplicate the information provided on underwater noise in Volume 3, Chapter 2.
The Scoping Report confirms that heat generated during the operation and maintenance of the Proposed Development (eg heat generated by offshore cables) will be considered within the commercial fisheries chapter. However, activities during construction and decommissioning of the Proposed Development are unlikely to generate significant levels of heat and can be scoped out of the assessment.	The Scoping Report noted that the potential impact of heating on fish and shellfish would be considered in the fish and shellfish chapter (not the commercial fisheries chapter).
The ES should assess impacts from climate change, including extreme weather events over the construction and decommissioning periods, where significant effects are likely to occur and describe and secure any relevant mitigation measures.	The effects of climate changes are considered in describing Future Baseline Conditions in **section 3.5**. Climate change does not alter the basis or conclusions of the assessments made in relation to commercial fisheries as presented in this chapter.
The ES should set out the methodologies used to explain any departure from the proposed approach where professional judgement is applied. Outputs from other assessments should be clearly explained where these have been applied.	The impact assessment methodology for commercial fisheries is presented in **section 3.4**. It is in line with standard and accepted approaches to commercial fisheries assessment. Where other assessments (i.e. those in Chapter 2: Fish and Shellfish Ecology, and Chapter 5: Shipping and Navigation) inform the assessments presented in this chapter, they are clearly cross-referenced.
Where significance criteria are not explicitly defined within the guidance, the ES should clearly set out where deviation from guidance has occurred and professional judgement has been applied.	The impact assessment methodology for commercial fisheries is presented in **section 3.4**. It is in line with standard and accepted approaches to commercial fisheries assessment.
The Inspectorate agrees that likely significant effects arising from residues and emissions (eg dust, pollutants, light, noise, vibration) are to be assessed in the relevant aspect chapters of the ES and a standalone aspect chapter for residues and emissions is not required.	The effect of underwater noise on fish and shellfish is assessed in Chapter 2: Fish and Shellfish Ecology. This chapter makes appropriate cross-reference to Chapter 2 in assessing the potential for disturbance of commercially important fish and shellfish species and resulting impacts on fishing

	activity, with assessment outcomes presented in **sections 3.8 to 3.10**.
The Scoping Report confirms that EMFs generated during the operation of the Proposed Development will be considered in the following aspect chapters and would not be included in a standalone ES chapter in respect of heat and radiation: • Benthic Ecology; • Fish and Shellfish Ecology; • Commercial Fisheries; • Marine Mammals and Sea Turtles; and • Shipping and Navigation. The Inspectorate is content with this approach.	The effect of EMF on fish and shellfish is assessed in Chapter 2: Fish and Shellfish Ecology. This chapter makes appropriate cross-reference to Chapter 2 in assessing the potential for disturbance of commercially important fish and shellfish species and resulting impacts on fishing activity, with assessment outcomes presented in **sections 3.8 to 3.10**.
On the basis that the operational (excluding repair) and decommissioning (in situ) phases would not involve a significant increase in vessel traffic, the Inspectorate is in agreement that this matter can be scoped out of the assessment.	N/A (scoped out)

3.3.3 Following scoping, consultation and engagement with interested parties specific to commercial fisheries has continued.

3.3.4 A summary of the key issues raised during consultation activities undertaken to date is presented in **Table 3.5**, together with how these issues have been considered in the production of this PEIR chapter.

Table 3.5: Summary of consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the PEIR
August 2023	North Devon Fisherman's Association and Cornish Fish Producers Organisation – Project introduction meeting and early discussions	Scouting survey for pots planned to avoid fishing gear, however request made for any upfront information (if available) on where pots are located to be shared to ensure nothing is missed. Cable laying works will take place 24/7 however scouting for fishing gear will take place only during the day – possibility for conflict if an area is scouted but then someone puts gear in afterwards.	Static gear locations recorded during environmental survey campaigns, however not considered a comprehensive survey of the wider area and thus is not relied upon for baseline characterisation. Further specific consultations to be undertaken with local IFCAs ahead of ES, which will include discussion of any additional spatial data.

3.4 Methodology

Relevant Guidance

3.4.1 In addition to the planning policy guidance listed above, the following guidance documents have been used to inform the assessment of potential impacts on commercial fisheries:

- Guidelines for liaison with the fishing industry on the UKCS – Issue 8 (Offshore Energies UK, 2023);
- Fishing and Submarine Cables - Working Together (International Cable Protection Committee, 2009);
- Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (United Kingdom Fisheries Economic Network (UKFEN) and Seafish, 2012);
- European Subsea Cables Association (ESCA) Guideline 01 and Appendices (ESCA, 2018);
- Fisheries Liaison with Offshore Wind and Wet Renewables group (FLOWW) Recommendations for Fisheries Liaison: Best Practice guidance for offshore renewable developers (FLOWW, 2014 and BERR, 2008); and
- FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds (FLOWW, 2015).

3.4.2 It is noted that at the time of PEIR preparation FLOWW Best Practice Guidance is intended to be revised with revision currently ongoing. While the Proposed Development is not categorised as part of the FLOWW group, the FLOWW guidance is considered relevant in this instance due to the type of infrastructure (cables and associated safety zones), together with well established procedures in UK waters that have been developed through offshore wind farm development.

Scope of the Assessment

3.4.3 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 3.4** and **Table 3.5**. A range of potential impacts on commercial fisheries have been identified, which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

3.4.4 Taking into account the scoping and consultation process, **Table 3.6** summarises the issues considered as part of this assessment.

Table 3.6: Issues considered within this assessment

Activity	Potential effects scoped into the assessment
Construction Phase	
Installation activities	Reduction in access to, or exclusion from established fishing grounds
	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds

Activity	Potential effects scoped into the assessment
	Displacement or disruption of commercially important fish and shellfish resources
	Increased vessel traffic associated with the Proposed Development within fishing grounds leading to interference with fishing activity
	Physical presence of infrastructure leading to gear snagging
Operational Phase	
Impacts associated with the presence of infrastructure on the seabed	Reduction in access to, or exclusion from established fishing grounds
	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds
	Displacement or disruption of commercially important fish and shellfish resources
	Physical presence of infrastructure leading to gear snagging
Operational Phase – repair activities only	
Activities associated with repair and maintenance during the Operational Phase	Reduction in access to, or exclusion from established fishing grounds
	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds
	Displacement or disruption of commercially important fish and shellfish resources
	Physical presence of infrastructure leading to gear snagging
	Increased vessel traffic associated with the Proposed Development within fishing grounds leading to interference with fishing activity
Decommissioning Phase – in situ	
Impacts associated with the presence of infrastructure on the seabed	Reduction in access to, or exclusion from established fishing grounds
	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds
	Displacement or disruption of commercially important fish and shellfish resources
	Physical presence of infrastructure leading to gear snagging
Decommissioning Phase – removal	
Decommissioning activities	Reduction in access to, or exclusion from established fishing grounds
	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds
	Displacement or disruption of commercially important fish and shellfish resources
	Increased vessel traffic associated with the Proposed Development within fishing grounds leading to interference with fishing activity

3.4.5 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out is presented in **Table 3.7**.

Table 3.7: Issues scoped out of the assessment

Activity	Potential effects scoped out of the assessment
Operational Phase	
Standard operation (vessel traffic would only be present during the operational phase in the instance of cable repair being required)	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity
Decommissioning Phase – *in situ*	
Leaving decommissioned cables *in situ*	Increased vessel traffic – vessel traffic would only be present during the decommissioning phase in the case of cable removal.

Study Area

3.4.6 This chapter considers commercial fisheries within the UK EEZ only. The Proposed Development is located within the International Council for the Exploration of the Sea (ICES) Division 7f (Bristol Channel) and Division 7e (western English Channel) statistical areas; within the UK Exclusive Economic Zone (EEZ).

3.4.7 For the purpose of recording fisheries landings, ICES Divisions 7f and 7e are divided into statistical rectangles which are consistent across all Member States operating in the Bristol Channel and English Channel.

3.4.8 The Proposed Development is located within ICES rectangles 26E3, 27E2, 27E3, 28E2, 28E3, 29E3, 30E3, 30E4, 31E4 and 31E5, as shown in Volume 3, Figure 3.1. The commercial fisheries study area has been defined as these ten ICES rectangles, noting however that rectangles 26E3 and 27E3 are partially located outside the UK EEZ.

Methodology for Baseline Studies

Desk Studies

3.4.9 Baseline data collection has been undertaken to obtain information over the study area shown in Volume 3, Figure 3.1.

3.4.10 The data sources that have been collected and used to inform this commercial fisheries assessment are summarised in **Table 3.11** and fully presented in the Commercial Fisheries Baseline Report annex (Volume 3, Appendix 4.1). As well as UK data sources, data has been sourced from European fisheries bodies. Relevant literature from a number of additional sources has also been reviewed and are referenced throughout as appropriate.

3.4.11 Baseline data has been further gathered and validated via engagement with fisheries stakeholders (see **section 0**).

3.4.12 No site surveys have been or will be undertaken specific to commercial fisheries, in line with standard practice.

3.4.13 The baseline data sources identified below will remain under review and may be updated in response to feedback from relevant statutory and non-statutory

consultees during the EIA process, or in response to new sources of information becoming available.

Impact Assessment Methodology

Overview

3.4.14 The approach to 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 sensitivity of the receptors. 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 PEIR.

Receptor Sensitivity/Value

3.4.15 In assessing the sensitivity of the receptor (i.e. a fishing fleet), the operational range of the fishing fleets, together with the availability of alternative fishing grounds are considered. The criteria for defining sensitivity in this chapter are outlined in **Table 3.8** below.

Table 3.8: Sensitivity criteria

Sensitivity	Definition
Very High	Receptor is very highly vulnerable to impacts that may arise from the project and recoverability is long-term or not possible. And/or: No alternative fishing grounds are available.
High	Receptor is highly vulnerable to impacts that may arise from the project and recoverability is long-term or not possible. And/or: Very limited alternative fishing grounds are available.
Medium	Receptor is generally vulnerable to impacts that may arise from the project and recoverability is slow and/or costly. And/or: Low levels of alternative fishing grounds are available and/or fishing fleet has low operational range.
Low	Receptor is somewhat vulnerable to impacts that may arise from the project and has moderate levels of recoverability. And/or: Moderate levels of alternative fishing grounds are available and/or fishing fleet has moderate operational range.
Negligible	Receptor is not generally vulnerable to impacts that may arise from the project and/or has high recoverability. And/or: High levels of alternative fishing grounds are available and/or fishing fleet has large to extensive operational range; fishing fleet is adaptive and resilient to change.

Magnitude of Impact

3.4.16 In assessing the magnitude of the impact, the value and vulnerability of the receptor, i.e. the fishing fleet under assessment, together with the duration, spatial extent and reversibility of the impact, are considered. Due to the range in scale, value (in terms of both landings and income / profit) and operational practices within the commercial fishing fleets assessed, specific economic criteria were not set for defining value. Instead, these classifications were based on judgement

informed by the baseline characterisation. The criteria for defining magnitude in this chapter are outlined in **Table 3.9** below.

Table 3.9: Impact magnitude criteria

Magnitude of impact		Definition
High	Adverse	Impact is of long-term duration (e.g. greater than 8 years duration) and / or is of extended physical extent; and Impact is expected to result in one or more of the following: • Substantial loss of target fish or shellfish biological resource (e.g. loss of substantial proportion of resource within Proposed Development area); and • Substantial loss of ability to carry on fishing activities (e.g. substantial proportion of effort within Proposed Development area).
	Beneficial	Impact is expected to result in one or more of the following: • Large scale or major improvement of resource quality, measurable against biomass reference points; and • Extensive restoration or enhancement of habitats supporting commercial fisheries resources.
Medium	Adverse	Impact is of medium-term duration (e.g. less than 8 years) and / or is of moderate physical extent; and Impact is expected to result in one or more of the following: • Partial loss of target fish or shellfish biological resource (e.g. moderate loss of resource within Proposed Development area); and • Partial loss of ability to carry on fishing activities (e.g. moderate reduction of fishing effort within Proposed Development area).
	Beneficial	Impact is expected to result in one or more of the following: • Moderate improvement of resource quality; and • Moderate restoration or enhancement of habitats supporting commercial fisheries resources.
Low	Adverse	Impact is of short-term duration (e.g. less than 2-3 years) and / or is of limited physical extent; and Impact is expected to result in one or more of the following: • Minor loss of target fish or shellfish biological resource (e.g. minor loss of resource within Proposed Development area); and • Minor loss of ability to carry on fishing activities (e.g. minor reduction of fishing effort within Proposed Development area).
	Beneficial	Impact is expected to result in one or more of the following: • Minor benefit to or minor improvement of resource quality; and • Minor restoration or enhancement of habitats supporting commercial fisheries resources.
Negligible	Adverse	Impact is of very short-term duration (e.g. less than 1 year) and / or physical extent of impact is negligible; and Impact is expected to result in one or more of the following: • Slight loss of target fish or shellfish biological resource (e.g. slight loss of resource within Proposed Development area); and • Slight loss of ability to carry on fishing activities (e.g. slight loss of fishing effort within Proposed Development area).
	Beneficial	Impact is expected to result in one or more of the following:

Magnitude of impact		Definition
		• Very minor benefit to or very minor improvement of resource quality; and • Very minor restoration or enhancement of habitats supporting commercial fisheries resources.
No change		Impact is expected to result in no change.

Significance of Effect

3.4.17 The significance of the effect upon commercial fisheries has been determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 3.10**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

3.4.18 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

3.4.19 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations.

Table 3.10: Assessment Matrix

Sensitivity of Receptor	Magnitude of Impact				
	No change	Negligible	Low	Medium	High
Negligible	No Change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No Change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No Change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No Change	Minor	Minor or Moderate	Moderate or Major	Major
Very High	No Change	Minor	Moderate or Major	Major	Major

3.4.20 Where the magnitude of impact is ‘no change’, no effect would arise.

3.4.21 The definitions for significance of effect levels are described as follows:

- **Major:** These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category. Effects upon human receptors may also be attributed this level of significance.
- **Moderate**: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse or beneficial effect on a particular resource or receptor.

- **Minor:** These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
- **Negligible**: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.
- **No change:** No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Assumptions and Limitations of the Assessment

3.4.22 Limitations associated with the data used to inform the description of the baseline environment are described in the Commercial Fisheries Baseline Report in Volume 3, Appendix 3.1. These limitations have been managed by ensuring accurate interpretation of the data and clear understanding of its scope, together with cross-referencing between data sources and input from the fishing industry. As data form only part of the evidence base, the limitations identified are not considered to significantly affect the certainty or reliability of the impact assessments in **sections 3.8 to 3.11**.

3.4.23 There will be elements of the Project Design which require flexibility, to allow e.g. for micro-routing and deployment of specific installation methods at the time of installation. To manage the associated assessment uncertainty and allow a robust impact assessment to be undertaken, the assessment presented in this chapter is based on a maximum design scenario for the Proposed Development. Through adoption of this maximum (or 'realistic worst case') scenario, there is confidence that the maximum potential adverse impact has been assessed, and as a result, impacts of greater adverse significance would not arise should any other development scenario to that assessed within this Chapter be taken forward in the final design.

3.5 Baseline Environment

Desk Study

3.5.1 Information on commercial fisheries within the study area was collected through a detailed review of existing studies and datasets. These are summarised in **Table 3.11**.

Table 3.11: Summary of desk study sources used

Title	Source	Year	Author
UK annual fisheries landings statistics	MMO	2018 to 2022	MMO
UK Vessel Monitoring System (VMS) data	MMO	2016 to 2020	MMO
European Union (EU) annual fisheries landings statistics	Scientific, Technical and Economic Committee for Fisheries (STECF)	2012 to 2016	STECF
EU VMS data	ICES	2016 to 2020	ICES
Fishing vessel route density data	European Maritime Safety Agency (EMSA)	2022	EMSA

Title	Source	Year	Author
Fishing vessel surveillance sightings *(requested; not received at time of drafting)*	MMO	2018 to 2023	MMO
Key species stock assessments and management plans	Various (as cited)	Various (as cited)	ICES, Cefas, Inshore Fisheries and Conservation Authorities (IFCAs)

Overview of landings from the study area

UK Fishing Activity

3.5.2 Landings from the commercial fisheries study area by UK-registered vessels had an average value of £14.2 million across the period 2018 to 2022 (MMO, 2023). **Plate 3.1** shows landings values across this time period for each ICES rectangle within the study area, highlighting relatively high landings values in rectangles 30E4 (accounting for over 25% of landings from the study area by value), off the Cornish coast. Across the 2018 to 2022 time period, UK landings show a relative peak in 2019 and were at their lowest in 2021.

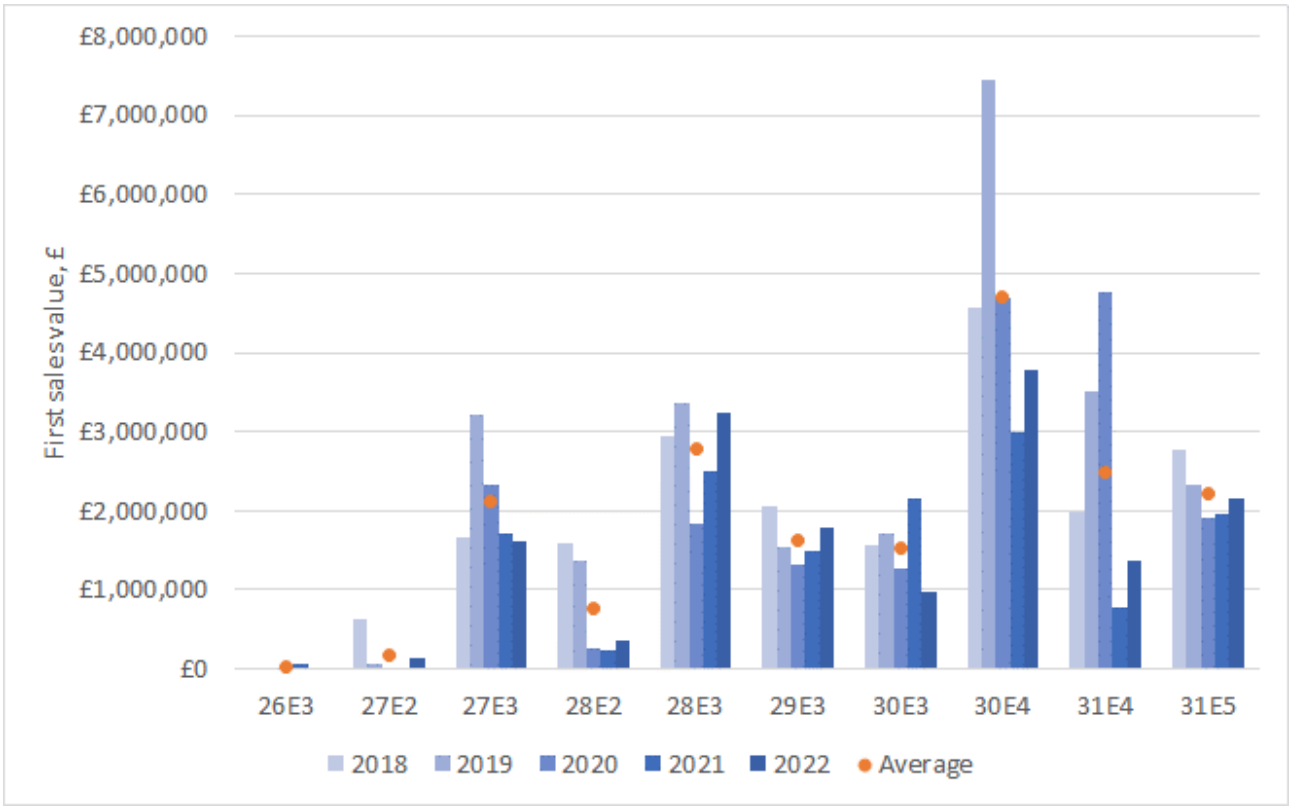

Plate 3.1: Annual landings value (pound sterling) by UK-registered vessels from the study area, by ICES rectangle, between 2018 and 2022 (MMO, 2023)

3.5.3 **Plate 3.2** shows the top ten species landed from the study area by landed weight. **Plate 3.3** shows equivalent landings data but based on value.

3.5.4 Approximately 75% of landings by value (and 58% by weight) are of demersal fish species. Key species are sole *Microstomus kitt,* hake *Merluccius merluccius*, monks and anglers *Lophius piscatorius* and megrim *Lepidorhombus whiffiagonis*. Landings of demersal species across the 2018 to 2022 period show a relative peak in 2019 and have been relatively constant across 2021 and 2022.

3.5.5 Key shellfish species are brown crabs *Cancer pagurus*, lobster *Homarus gammarus*, whelks *Buccinum undatum* and nephrops *Nephrops norvegicus*. Shellfish landings have remained relatively consistent across the five-year period.

3.5.6 Pelagic fisheries primarily target horse mackerel *Trachurus trachurus*. Landings of pelagic species have fluctuated across the time series, with more notable catches in 2019 and 2022.

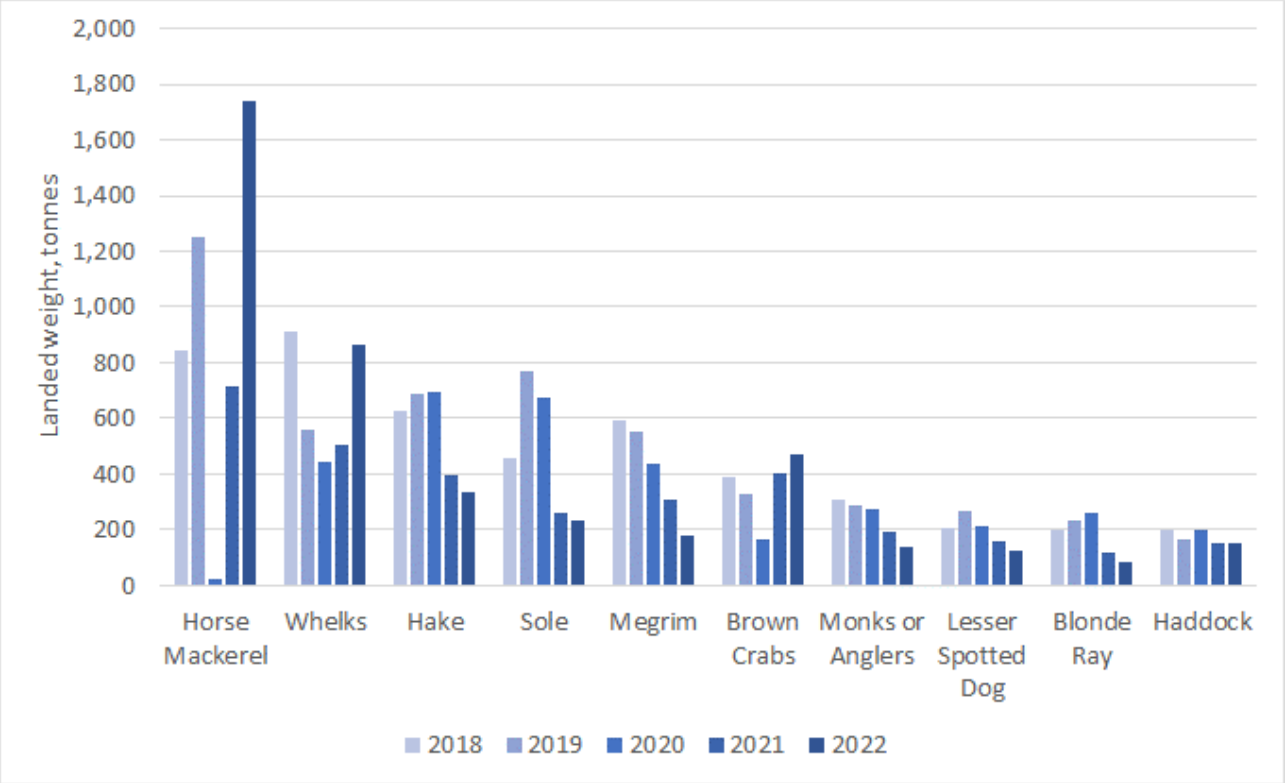

Plate 3.2: Annual landings weight (tonnes) by UK-registered vessels from the study area, by key species, between 2018 and 2022 (MMO, 2023).

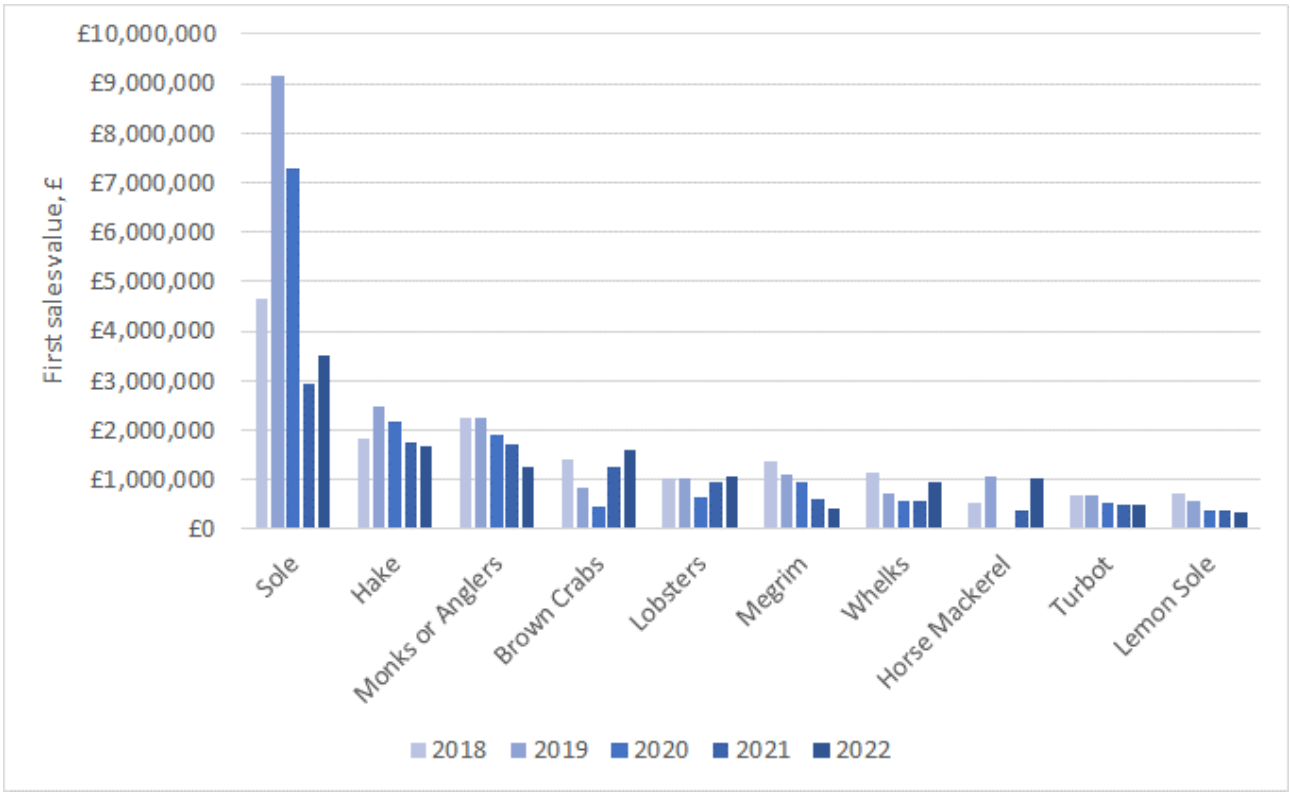

Plate 3.3: Annual landings value (pound sterling) by UK-registered vessels from the study area, by key species, between 2018 and 2022 (MMO, 2023).

3.5.7 **Plate 3.4** shows the key fishing gear types utilised across the study area. The largest proportion of landings are attributed to beam trawl gear, with landings from this gear type showing relative decline across 2021 and 2022. Drift and fixed nets, pots and traps and demersal trawls are also routinely deployed across the study area, with pelagic trawl activity being more sporadic reflecting the wide-ranging nomadic nature of pelagic trawl fisheries.

3.5.8 Landings data indicates that across the 2018 to 2022 period, and across the study area, English-registered fishing vessels accounted for approximately 70% of total landings, with relatively limited landings attributed to Scottish and Welsh-registered vessels. Key UK landings port utilised by UK vessels fishing in the study area include Newlyn and Milford Haven, Ilfracombe and Padstow. Vessels accounting for the majority of landings by value were within the following vessel length categories: 24 to 40 m, 18 to 24 m and under 12 m.

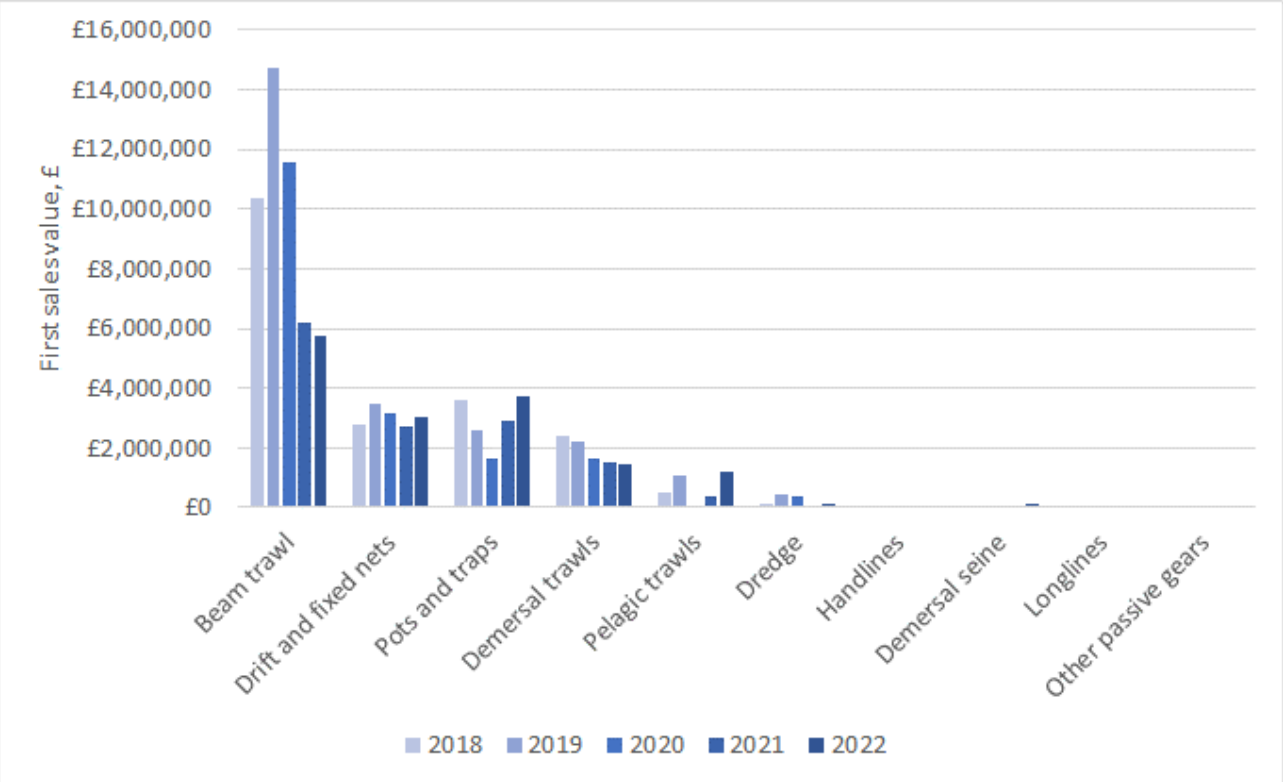

Plate 3.4: Annual landings value (pound sterling) by UK-registered vessels from the study area, by key fishing gear, between 2018 and 2022 (MMO, 2023).

3.5.9 Landings from the commercial fisheries study area by EU-registered vessels have been analysed using data sourced from the EU DCF database covering two different time periods. The first source covers the period 2012 to 2016 and is usefully disaggregated at the level of individual ICES rectangle. The second source provides landings data up to 2021 but is available only at ICES division level (i.e., the Bristol Channel, and the western English Channel) and so whilst more recent, is less helpful in terms of understanding EU fishing activity across the study area.

3.5.10 **Plate 3.5** presents landings by both UK and non-UK fishing vessels from the study area (at ICES rectangle scale) between 2012 and 2016. The data indicates activity by French, Belgian and Irish vessels within the study area, with notable landings from French-registered vessels in particular. **Plate 3.6** presents landings

by EU fishing vessels from ICES divisions 7f and 7e, operating in the UK EEZ (i.e., an area of significantly greater extent than the study area) from 2018 to 2022. The data again indicates the presence of French vessels targeting mixed demersal species, with potential for activity associated with Belgian, Dutch and Irish fleets.

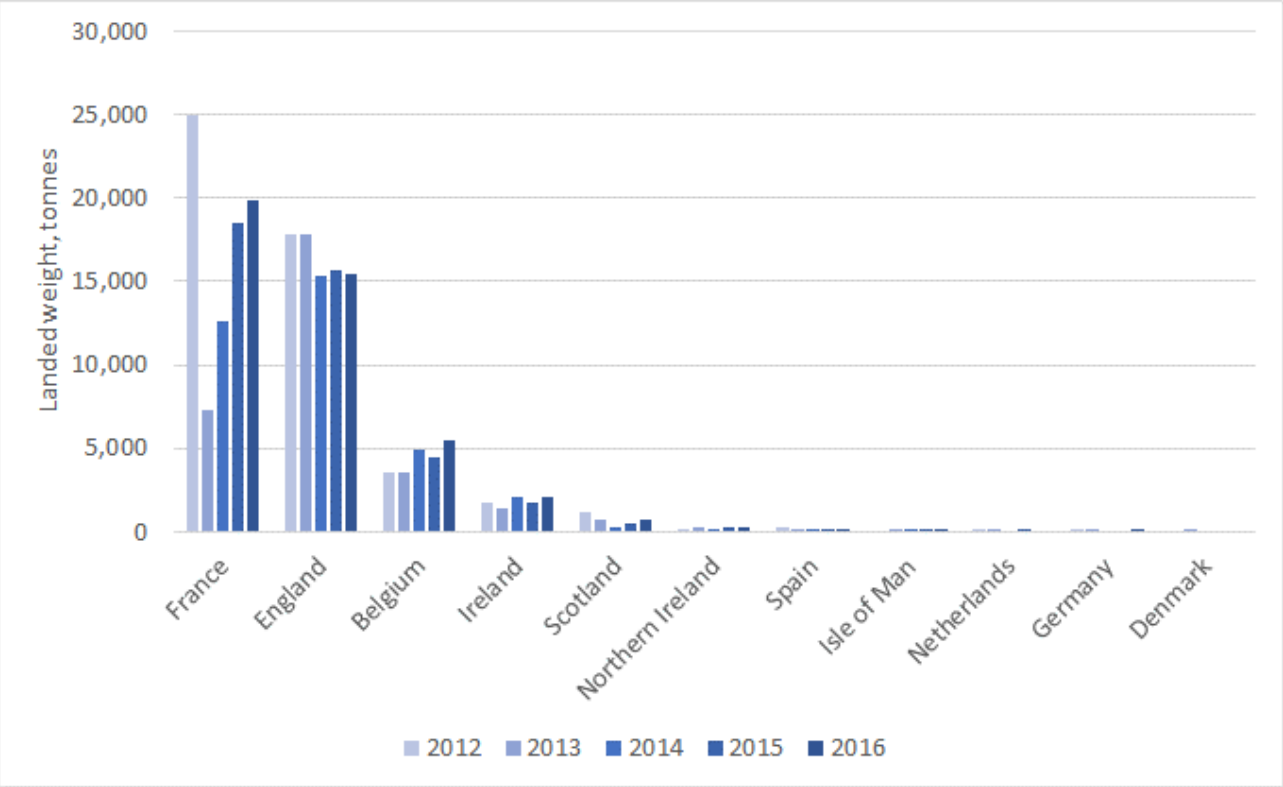

Plate 3.5: Landed weight (tonnes) by UK and non-UK vessels from the study area, by ICES rectangle, between 2012 and 2016 (EU DCF, 2023).

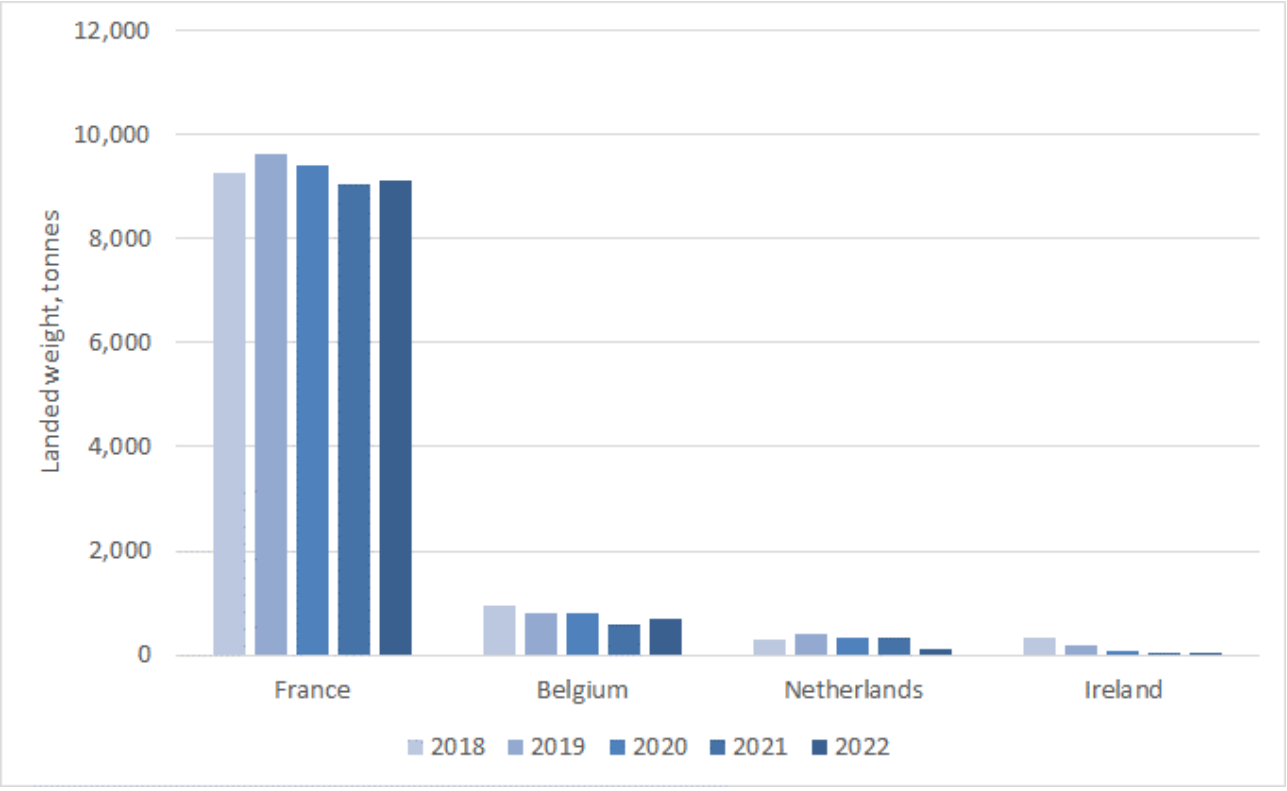

Plate 3.6: Landed weight (tonnes) by EU vessels in ICES Divisions 7e and 7f in the UK EEZ 2018 to 2022, by country (EU DCF, 2023).

Description of fishing fleets active in the study area

Beam trawl

3.5.11 In the study area UK beam trawlers target sole, monkfish and other flatfish species. Across the entire study area, UK beam trawl landings have an annual average value of £9.7 million (2018 to 2022), with landings of sole accounting for 53% of this, and monkfish for 17%. Landings have shown a steady decline annually since a peak in 2019.

3.5.12 Landings data indicates that the majority of landings by UK vessels across the study area were attributed to ICES rectangle 30E4 where sole represent the main catch. UK beam trawlers primarily land their catches into Newlyn and Milford Haven. The majority of catches are associated with vessels of between 24 and 40 m length. Landings are made year-round and show a slight spring/summer peak.

3.5.13 EU landings data indicate the likely presence of Belgian beam trawlers, targeting sole and plaice and taking other flatfish species in the study area, with relatively low levels of landings associated with other EU vessels, including French vessels. Data indicates a small decline in landings by Belgian vessels across 2018 to 2022.

3.5.14 Activity mapping for beam trawl activity is shown in Figures 10 to 12 in Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report. VMS data indicates intense beam trawl activity in the English Channel to the east of the Proposed Development and generally low levels of activity along the Offshore Cable Corridor with the exception of a relative hotspot of activity in ICES rectangles

29E4 and 30E4, north west of the Cornish coast. This activity is expected to be attributable to UK beam trawlers as described in **paragraph 3.5.12** above.

Netting

3.5.15 In the study area UK netting vessels target a variety of whitefish species including hake, turbot, pollack and haddock. Across the entire study area, UK beam trawl landings have an annual average value of £3 million (2018 to 2022), with landings of hake accounting for 63% of this, turbot for 10% and pollack for 8%. Landings have been relatively consistent across the five-year period.

3.5.16 Landings data indicates that the majority of landings by UK vessels across the study area attributed to three ICES rectangles: 30E3, 27E3 and 29E3. UK netters operating gill and trammel nets (static gear) primarily land their catches into Newlyn. The majority of catches are associated with vessels of between 15 and 24 m length. Landings are made year-round and show a slight peak in mid-summer and again across November and December.

Potting

3.5.17 In the study area, UK potting vessels target brown crabs, lobsters and whelks. Across the entire study area, UK potting landings have an annual average value of £2.9 million (2018 to 2022), with landings of brown crab accounting for 37% of this, lobsters for 32% and whelks for 27%. Landings have been relatively consistent across the five-year period showing a dip in 2020, likely to be largely attributable to the effects of the COVID-19 pandemic on fishing activity.

3.5.18 Landings data indicates that the majority of landings by UK vessels across the study area is attributed to ICES rectangle 31E5 off the Cornwall and Devon coast. UK potters are active around the coastline in the study area and land catches into a variety of local ports including Ilfracombe, Padstow, the Scilly Isles and Saundersfoot. The majority of catches are associated with vessels of 15 m length and under. Landings are made year-round but show a clear summer peak.

3.5.19 Activity mapping for UK potting activity is shown in Figure 15 in Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report. Potting activity by over 15 m length vessels captured in the VMS data is limited along the cable corridor, with some activity overlapping the Proposed Development in ICES rectangles 31E4 and 31E5 off the Cornwall and Devon coast.

Demersal otter trawl

3.5.20 In the study area, UK demersal otter trawlers target Nephrops and flatfish species including sole, rays and monkfish. Across the entire study area, UK demersal trawler landings have an annual average value of £1.8 million (2018 to 2022), with landings of Nephrops accounting for 21% of this, sole of 17% and blonde ray of 12%. Landings have shown a steady decline annually from 2018 onwards.

3.5.21 Landings data indicates that distinct grounds are targeted by demersal trawlers, with the majority of landings by UK vessels across the study area attributed to four ICES rectangles (28E2 and 28E3 where Nephrops and haddock represent the main catch, and 31E4 and 31E5 where ray and sole are the dominant catch).

3.5.22 UK demersal trawlers primarily land their catches into Newlyn, Ilfracombe and Milford Haven. The majority of catches are associated with vessels of between 18

and 40 m length, with approximately 61% of landings made by English-registered vessels and 23% by Scottish-registered vessels. Lesser landings are made by Northern Irish and Welsh-registered vessels. Landings are made year-round but show a peak in late spring months.

3.5.23 EU landings data indicate the likely presence of particularly French, but also Belgian and Irish, demersal trawlers within the study area. Data indicates that French trawlers are landing mixed demersal species, including cod, haddock, sole, plaice, cuttlefish and squid. Belgian trawlers are primarily targeting flatfish, including sole, monkfish and megrim, and Irish trawlers are targeting Nephrops.

3.5.24 Activity mapping for demersal trawl activity is shown in Figures 6 to 8 in Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report. VMS data indicates that the most heavily targeted fishing grounds do not overlap the Proposed Development. Two relative hotspots of demersal trawl activity are noted along the Offshore Cable Corridor, to the north west of the Cornish coast – associated with landings of flatfish by UK vessels - and to the south west of the Isles of Scilly, where activity is expected to be attributable primarily to EU trawlers.

Pelagic trawl

3.5.25 In the study area UK pelagic trawlers show sporadic activity with landings fluctuating significantly year-on-year and ranging in annual value from £200 in 2020 to £1.2 million in 2022 (averaging £631,000 across 2018 to 2022). Over 90% of landings are of horse mackerel.

3.5.26 Reflecting the transient and highly mobile nature of pelagic shoaling fish, landings are not associated with highly specific or consistent grounds, with landings taken from a number of the ICES rectangles within the study area. UK demersal trawlers primarily land their catches into non-UK ports, namely Ijmuiden and Scheveningen. Some landings are made into Plymouth. Landings tend to be associated with rapid and intense periods of activity across winter months.

3.5.27 EU landings data indicate the potential presence of French pelagic trawlers within the study area targeting mixed fish species.

3.5.28 Activity mapping for UK pelagic trawl activity is shown in Figures 13 and 14 in Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report. VMS data indicates no UK pelagic trawl activity in the vicinity of the Proposed Development, with activity focused to the east in the English Channel.

Dredge

3.5.29 In the study area UK dredgers target king scallops. Across the entire study area, UK demersal trawler landings have an annual average value of £232,000 (2018 to 2022). Landings show notable variation year-on-year, most recently peaking in 2019, expected to reflect the cyclical nature of the king scallop fishery.

3.5.30 Landings data indicates that distinct grounds are targeted by dredgers, with the majority of landings by UK vessels taken from ICES rectangle 30E4. UK dredgers primarily land their catches into Padstow and Newlyn. The majority of landings are attributable to vessels of between 12 and 15 m length, and between 24 and 40 m length. Landings show a late summer peak, with minimal landings in winter months.

3.5.31 EU landings data indicate the potential presence of French dredgers targeting king scallop within the study area.

3.5.32 Activity mapping for dredge activity is shown in Figures 3 to 5 in Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report. VMS data indicates that the most heavily targeted fishing grounds do not overlap the Proposed Development and that limited dredge activity is expected along the Offshore Cable Corridor with the exception of across ICES rectangle 30E4 north west of the Cornish coast where data indicates the presence of a targeted scallop bed immediately to the east of the Offshore Cable Corridor.

Other Fleets

3.5.33 Landings data indicates the potential for relatively low levels of fishing activity by other fleets within the study area. These include:

- The UK handline and longline fleet, targeting pollack, hake and bass. On average across 2018 to 2022, these fleets made 11 tonnes of landings with an average value of £50,000.
- The UK demersal seine fleet (see Figure 9 in Volume 3, Appendix 3.1: Commercial Fisheries Baseline Report), which recorded landings only in 2022 of 60 tonnes with a value of £113,000 (no landings are recorded in the study area between 2018 and 2021). Landings were primarily of haddock and hake.

Fishing Restrictions

3.5.34 Limits on catch volumes are in place for many commercially fished species, taking the form of Total Allowable Catches (TACs) and quotas. Species targeted in the study area for which TACs are set include sole, plaice, turbot and Nephrops. Key shellfish species targeted in the study area, including lobster and brown crab, are not subject to TACs, but are subject to national and local fisheries management measures.

3.5.35 In addition to limits on catch volumes, a number of restrictions are in place based primarily on fisheries byelaws, intended to protect fish stocks and their habitats. These restrictions include limits on minimum landing sizes, technical measures relating to fishing gear design and use, limits on fishing effort, and temporary and permanent fishery closures.

3.5.36 Within the study area several spatial restrictions are in place that are relevant to the Proposed Development. These include:

- MMO Land's End and Cape Bank European Marine Site (Specified Areas) Bottom Towed Gear Byelaw 2009, prohibiting the use of bottom towed fishing gear in the specified area;
- MMO closed area for the conservation of cod in ICES divisions 7f and 7g whereby from 1 February to 31 March each year, it shall be prohibited to conduct any fishing activity in the following ICES statistical rectangles: 30E4, 31E4, 32E3; and
- Devon and Severn, Cornish and Isles of Scilly IFCA byelaws which include a number of byelaws that seek to manage fishing activity within IFCA waters (i.e., inside of the 6 nm limit).

Future Baseline Conditions

3.5.37 From the point of assessment, over the course of the development and operational lifetime of the Project, long-term trends mean that the condition of the baseline environment is expected to evolve. Commercial fisheries patterns change and fluctuate based on a range of natural and management-controlled factors. This includes the following:

- Market demand: commercial fishing fleets respond to market demand, which is impacted by a range of factors, an example being the COVID pandemic;
- Market prices: commercial fishing fleets respond to market prices by focusing effort on higher value target species when prices are high and markets in demand;
- Stock abundance: fluctuation in the biomass of individual species stocks in response to status of the stock, recruitment, natural disturbances (e.g., due to storms, sea temperature etc.), changes in fishing pressure etc.;
- Fisheries management: including new management for specific species where overexploitation has been identified, or changes in Total Allowable Catches leading to the relocation of effort, and/or an overall increase/decrease of effort and catches from specific areas;
- Environmental management: including the potential restriction of certain fisheries within protected areas;
- Improved efficiency and gear technology: with fishing fleets constantly evolving to reduce operational costs e.g., by moving from beam trawl to demersal seine; and
- Sustainability: with seafood buyers more frequently requesting certification of the sustainably of fish and shellfish products, such as the Marine Stewardship Council certification, industry is adapting to improve fisheries management and wider environmental impacts.

3.5.38 The variations and trends in commercial fisheries activity are an important aspect of the baseline assessment and forms the principal reason for considering up to five years of key baseline data. Given the time periods assessed, the future baseline scenario would typically be reflected within the current baseline assessment undertaken. However, in this case, existing baseline data do not capture all potential changes in commercial fisheries activity, as described below.

3.5.39 Following the withdrawal of the UK from the EU, the UK and the EU have agreed to a Trade and Cooperation Agreement (TCA), applicable on a provisional basis from 1 January 2021. The TCA sets out fisheries rights and confirms that from 1 January 2021 and during a transition period until 30 June 2026, UK and EU vessels will continue to access respective Exclusive Economic Zones (EEZs, 12-200 nm) to fish. In this period, EU vessels will also be able to fish in specified parts of UK waters between 6-12 nm.

3.5.40 25% of the EU's fisheries quota in UK waters will be transferred to the UK over the five-year transition period; most of this quota has already been transferred and distributed across the four nations of the UK. After the five-year transition there will be annual discussions on fisheries opportunities. Across the study area, UK fisheries target both quota and non-quota shellfish species. Where fleets target non-quota species (e.g. the potting fleet targeting shellfish), it is expected that fleets are unlikely to be impacted by quota transfers. It is possible that UK vessels

will seek to exploit additional quota-species opportunities, but vessels would need to access quota holdings. Based on changes in quota allocation, it could be expected that between 2021 and 2026, UK vessels could be catching relatively more quota species, with EU fleets catching relatively less. In summary, levels of fishing activity within the study area are likely to remain consistent with the current baseline but be undertaken in a slightly greater proportion by UK vessels.

3.5.41 In relation to EU access to UK territorial waters, provision has been made for EU vessels with a track record of fishing between 6 nm and 12 nm to be issued with licences to continue fishing. This licencing process is ongoing, and it is unknown how many EU vessels this is applicable to. Therefore, fishing activity within the study area is likely to remain consistent with the current baseline in terms of the fleets and Member States in operation.

3.5.42 Market changes have the potential to impact fishing activity in the study area; some of the catch landed by UK vessels is exported to EU markets (e.g., brown crab) and potential tariff/non-tariff barriers could affect which species are targeted and to what extent. One of the key species landed by potters in the area is whelk, which is primarily exported to non-EU countries, including Korea, Taiwan and Singapore. The trade in UK landed whelk has therefore not been as affected by the Brexit process and associated implications on shellfish exports compared to other species. In terms of future baseline scenarios, it is therefore possible, for example, that the UK fleet will more heavily target whelk given that prices have increased in recent years, and they are exported to non-EU countries.

3.5.43 In relation to the effects of the COVID pandemic, MMO annual reporting notes that the effects of the pandemic on the UK fishing industry were felt from March 2020. The MMO UK Sea Fisheries Statistics 2021 report observes that an increase in overall UK landings quantity and value in 2021 (relative to 2020) largely reflected recovery from the COVID period and additional quota available to the UK fleet after leaving the EU (MMO, 2022).

3.5.44 Commercial fisheries receptors (i.e., relevant fishing fleets) could theoretically be impacted by climate change over the lifetime of the project. Increased sea temperature/change in pH levels have the potential to affect the distribution of commercially targeted fish and shellfish stocks in the commercial fisheries study area. Changes may result from changes in seabed habitat or natural disturbance events. Changes would be expected to have limited effects on mobile species, but with potential for effects on substrate-dependent species such as herring and sandeel, and on shellfish. Changes may in turn affect commercial fishing activity in the study area over the long-term; for example, altering fishing methods, targeted grounds and seasonal patterns in activity. An increase in storm events may also directly impact fishing activity in the study area, with changes with seasonal fishing patterns in response to changes in weather and periods of safe fishing conditions.

3.5.45 Climate change could potentially cause changes in patterns of fishing activity over the lifetime of the Proposed Development. However, the Proposed Development will not contribute to or interact with the impacts of climate change to any significant extent. Accordingly, climate change does not alter the basis or conclusions of the assessments made in relation to commercial fisheries as presented in this chapter.

Key Receptors

3.5.46 **Table 3.12** identifies the receptors taken forward into the assessment.

Table 3.12: Key receptors taken forward to assessment

Receptor	Description
UK beam trawl fleet	UK-registered vessels primarily targeting sole, monkfish and other flatfish
UK netting fleet	UK-registered vessels primarily targeting hake and other whitefish
UK potting fleet	UK-registered vessels primarily targeting brown crab, lobster and whelk
UK demersal trawl fleet	UK-registered vessels primarily targeting Nephrops, sole and other flatfish
UK pelagic trawl fleet	UK-registered vessels primarily targeting horse mackerel
UK dredge fleet	UK-registered vessels primarily targeting king scallop
EU beam trawl fleet	Primarily Belgian-registered vessels, and some Irish-registered vessels, targeting mixed fish species including anglerfish, brill and pouting
EU demersal trawl fleet	Primarily French-registered vessels targeting mixed demersal fish species, and also some Belgian-registered vessels and Irish-registered vessels (the latter also targeting Nephrops)
EU pelagic trawl fleet	French-registered vessels targeting mixed fish species

3.6 Key Parameters for Assessment

Maximum Design Scenario

3.6.1 The maximum design scenarios identified in **Table 3.13** 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 2: Project description of the PEIR. 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 installation techniques), to that assessed here be taken forward in the final design scheme. Therefore, this comprises a conservative assessment of a worst-case scenario.

Table 3.13: Maximum design scenario considered for the assessment of potential impacts

Potential Impact	Phase[1]					Maximum Design Scenario	Justification
	C	Op	Op repair	D in-situ	D remove		
Reduction in access to, or exclusion from established fishing grounds	Yes	Yes	Yes	Yes	Yes	**Construction phase** • Installation of four cables of 370 km length in UK EEZ waters, within a 500 m wide corridor (wider at some locations e.g. at crossings) • Phased construction activities. Pre-lay works may commence in 2027. Cable lay activities due to start Q1 2028. Second bundle cable lay due to start 2030. Burial and protection activities would progress broadly in parallel, with protection taking longer to completion. Activities assumed 24 hours a day but transient (progressing along the OCC at typical rates of e.g. trenching at c.50 to 400 m per hour). • Construction activities to include: – Pre-lay marine surveys – Route preparation (debris clearance by pre-lay grapnel run, cutting and removal of out of service cables, boulder clearance and seabed levelling (max swath width from levelling 'surface plough' i.e. up to 20m)) – Cable installation, with four HVDC cables and two FOC installed in two bundled pairs – Cable burial, to a target depth of 1.5 m below seabed – Potential requirement for additional cable protection (e.g. supplementary rock placement – including within trench) across c.150 km per bundle of the OCC length (i.e. c. 300 km in total) – Installation of cable protection (rock berm or concrete mattressing) at 21 cable crossings per bundle (i.e. 42 crossings in total)	This represents the maximum duration and extent of fishing exclusion and hence the greatest potential to restrict access to fishing grounds. It comprises the maximum footprint of infrastructure on the seabed plus maintenance activities throughout the operational and maintenance phase and associated temporary safety/clearance zones.

Potential Impact	Phase[1]					Maximum Design Scenario	Justification
	C	Op	Op repair	D in-situ	D remove		
						– Roaming safe passing distance around installation vessels restricted in manoeuvrability **Operation and Maintenance phase** • Minimum operational life of 50 years • Routine inspection surveys up to once a year for the first 5 years of operation, then approximately every 5 years for the remainder of the operational phase • Potential for unplanned maintenance and repair, involving works similar to those described for the installation phase but on a lesser scale (targeted local 'repair' works where necessitated). **Decommissioning phase** • Worst case methods assume full cable removal with methods similar to those of construction phase.	
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Yes	Yes	Yes	Yes	Yes	As for 'loss or restricted access to fishing grounds' (see above).	This represents the maximum duration and extent of fishing exclusion and hence the greatest potential for displacement.
Displacement or disruption of commercially important fish and shellfish resources	Yes	Yes	Yes	Yes	Yes	See Volume 3, Chapter 2: Fish and Shellfish Ecology.	The scenarios presented in Volume 3, Chapter 2: Fish and Shellfish Ecology describe the greatest disturbance to fish and shellfish species and therefore the greatest knock-on effect to commercial fisheries. Importantly, this section considers the impacts as a whole on commercially important species, rather than any one impact or one species in particular.
Increased vessel traffic associated	Yes	No	Yes	No	Yes	**Construction phase** • Presence during the construction phase of:	The maximum number of vessels, vessel transits and the maximum duration of the

Potential Impact	Phase[1]					Maximum Design Scenario	Justification
	C	Op	Op repair	D in-situ	D remove		
with the Project within fishing grounds leading to interference with fishing activity						– Up to 2 survey vessels – Up to 4 trenching vessels – Workboats and tugs to support various activities such as route clearance – 1 Cable Lay Vessel (2 for brief changeover periods) – Up to 20 guard vessels – Up to 2 rock placement vessels – Up to 2 jack-up or multicat vessels near landfall **Operation and Maintenance phase** • Presence during the operation and maintenance phase of: – One survey vessel to undertake routine surveys once a year for the first 5 years of operation, then every 5 years for the remainder of the cable lifetime – Vessels to support unplanned maintenance and repair, as needed **Decommissioning phase** • Worst case methods assume full cable removal with methods similar to those of construction phase.	construction, operation and decommissioning will result in the greatest potential for interference.
Physical presence of infrastructure leading to gear snagging	No	Yes	No	Yes	No	As for 'loss or restricted access to fishing grounds' (see above).	This represents the maximum potential for interactions between infrastructure and fishing gear.

[1]C=Construction phase, Op=Operational phase, Oprepair=Operational phase repair activities, Din-situ=Decommissioning phase assuming cable de-energised and left in-situ, Dremove=Decommissioning phase assuming cable removed

3.7 Mitigation Measures Adopted as Part of the Proposed Development

3.7.1 The measures adopted as part of the Proposed Development in **Table 3.14** are relevant to commercial fisheries. These measures may evolve as the engineering design and the EIA progresses.

3.7.2 The mitigation measures proposed as part of the Proposed Development include the following types of mitigation:

- Primary (inherent) mitigation – measures included as part of the Proposed Development design. The Institute of Environmental Management and Assessment (IEMA) describes these as '*modifications to the location or design of the development made during the pre-application phase that are an inherent part of the Proposed Development and do not require additional action to be taken*'. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself, through the description of the Proposed Development and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
- Secondary (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome'*. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through an environmental management plan.
- Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects*'. It may be helpful to secure such measures through the Offshore Construction Environmental Management Plan (an outline Offshore CEMP is provided as PEIR Volume 1, Appendix 3.3, which will continue to be developed and submitted as part of the DCO application).

Table 3.14: Mitigation measures adopted as part of the Proposed Development

Measure Adopted	How the Measure Will be Secured
Primary mitigation	
Cables will be buried (where possible) to a target depth of 1.5 m below the seabed. This will reduce the likelihood of damage to the cable (and associated risks and accidents) associated with anchor strike, or fishing activity. Additional protection e.g. rock placement and / or mattresses where back cover of sediment requires to be supplemented.	Design parameters taken forward into DCO and will form basis for specific contractor specifications.
Cable crossing design will adhere to international best practice design, which will allow them to be overtrawlable.	Design parameters taken forward into DCO and will form basis for specific contractor specifications.
Route optimisation studies, including multiple desktop studies and marine investigation surveys, have informed the routing of the Offshore Cable Corridor to ensure the Proposed Development	Design parameters taken forward into DCO and will form basis for specific contractor specifications.

Measure Adopted	How the Measure Will be Secured
avoids sensitive locations for commercial fisheries where possible.	
Secondary mitigation	
N/A	
Tertiary mitigation	
Appointment of a Fisheries Liaison Officer (FLO) (construction phase). The FLO will support ongoing liaison and ensure clear communication between the Applicant and commercial fisheries during the construction phase.	An FLO has already been appointed to the project and will continue to be engaged for the duration of the construction phase as a minimum. Listed in outline Offshore CEMP (although likely continue to be contracted to main client) and FLO requirement may be listed in deemed Marine Licence under DCO.
Advance warning and accurate location details of construction, maintenance and decommissioning operations, associated safety/clearance zones and advisory passing distances will be given via Notices to Mariners, supported by Radio Navigational Warnings, NAVTEX and / or broadcast warnings as appropriate.	Contractor requirement to arrange Notice(s) to Mariners (NtM), typically issued by local harbour authorities – requirement of final Offshore CEMP.
In the event that cable exposures are identified during the operational phase of the Project, the location of these will be shared with fisheries stakeholders and where appropriate, additional temporary measures put in place (e.g., marker buoys, use of guard vessels, etc.), until a repair or remediation can be implemented.	Notice(s) to Mariners (NtM) process will inform other marine users of ad-hoc / short-term works, their nature, location, duration and avoidance advice (where applicable).
Development of a Vessel Management Plan which would set out pre-agreed vessel routes, speeds, safety measures, communication expectations etc.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
Compliance with international legislation, both for Project vessels and third-party vessels. This includes the COLREGs and SOLAS.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
Cable installation vessels and support vessels will display appropriate lights and marks at all times, and where possible, broadcast their status on AIS. This will include indication of the nature of the work in progress and highlight their restricted manoeuvrability.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
Guard vessel(s) will be employed to work alongside the installation vessel(s) during the construction period. These will alert third-party vessels to the presence of the installation activity and provide support in the event of an emergency.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
Project vessel movements will be managed through marine coordination and communication.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
Passing vessels will be requested to maintain a “safe” distance from installation vessels restricted in manoeuvrability. This will be monitored by guard vessels.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
The cable will be clearly marked on Admiralty Charts with associated note/warning about anchoring, trawling or seabed preparation.	Ongoing consultations and commitments to data sharing with The Maritime and Coastguard Agency (MCA) and Trinity House. Data sharing commitment

Measure Adopted	How the Measure Will be Secured
	to the UK Hydrographic Office (UKHO) direct as required to update Admiralty Charts. Data sharing commitment secured via DCO.
A dropped objects procedure will be put in place detailing the requirements and procedures for vessel operators to identify, record, notify the MMO and, where possible, recover dropped objects.	Pre-requisite contractor requirement - secured via final Offshore CEMP.
Dedicated project FLOs will engage with local fishers to minimise potential disruption. Any claim of loss of / or damage to fishing gear will be processed, in line with protocols laid out within the guidance produced by the FLOWW group and “Recommendations for Fisheries Liaison: Best Practice”, in particular section 9: Dealing with claims for loss or damage of gear.	Commitment secured via DCO.

3.8 Preliminary Assessment of Construction Effects

3.8.1 The impacts of the construction of the Proposed Development have been assessed. The preliminary potential impacts arising from the construction phase of the Proposed Development are summarised in Table 3.18, with a full description of each identified impact in this section.

Reduction in access to, or exclusion from, established fishing grounds

3.8.2 During construction, commercial fisheries will be prevented from fishing where construction activities are taking place. In addition, a roaming safe passing distance around installation vessels with restricted manoeuvrability will be in place. The offshore construction activities will be spread across multiple distinct campaigns, each of which will be transient in nature (as the activity progresses along the route) but will be spread over potentially five separate years.

3.8.3 The Offshore Cable Corridor will have to remain clear of static gear (pots and fixed nets) during active construction works. Local fishers will be engaged via the dedicated project FLOs.

3.8.4 In addition, during the construction phase, fishing vessels may be required to avoid sections of the Offshore Cable Corridor where the installed cable may be temporarily vulnerable (e.g., surface laid cables awaiting burial). In these areas, it will be requested via NtMs and engagement with fisheries stakeholders that fishing vessels avoid fishing within a temporary clearance zone.

3.8.5 As described in **section 3.7**, a number of embedded mitigation measures will be implemented to minimise disturbance to fishing during the construction phase. These measures include appointment of an FLO and adherence to recognised good practice guidance in fisheries liaison, issue of NtMs and navigational warnings, and use of guard vessels.

Sensitivity of the Receptor

3.8.6 The UK potting fleet are typically <15 m in length and operate across more distinct areas of ground, typically to 12 nm from shore and more commonly within the 6 nm limit. The operational range of these vessels is lower relative to larger, more transient vessels, such as scallop dredgers and trawlers that typically operate across a wide range of grounds. The inshore vessels operating potting gear are typically day boats, often single handed and with a more limited operational range from home port. Overall, the UK potting fleets are deemed to be of medium vulnerability, medium recoverability, with a relatively limited operational range within the region. The sensitivity of the receptors is therefore considered to be **medium**.

3.8.7 The mobile fleets targeting fish and shellfish resources across the study area are typically >15 m in length and operate across large areas of the Celtic Sea and beyond. Given adequate notification, it is expected that these vessels will be in a position to avoid construction areas. These fleets are considered to have a medium to large operational range; medium to high levels of alternative fishing grounds; and are deemed to be of low vulnerability and high recoverability. The sensitivity of these receptors is therefore, considered to be **low**. The mobile fleets targeting pelagic fisheries are considered to have very high levels of alternative fishing grounds; are deemed to be of low vulnerability and high recoverability. The sensitivity of these receptors is therefore considered to be **negligible**.

3.8.8 The netting fleet, whose landings are dominated by hake caught by larger gillnet vessels, are understood to operate across relatively large areas, with a focus of activity around the continental shelf edge to the southwest of the Proposed Development. This fleet is considered to have a medium operational range; medium to high levels of alternative fishing grounds; and are deemed to be of low vulnerability and high recoverability. The sensitivity of these receptors is therefore considered to be **low**.

Magnitude of Impact

3.8.9 This impact will lead to a temporary and localised loss of access to fishing grounds and the fish and shellfish resources within these grounds for a range of fishing opportunities during the period of construction, which will directly affect fleets over a short-term duration. The impact is predicted to be intermittent with localised exclusion surrounding construction activities. The impact is of relevance to national and international fishing fleets and is described below on a fleet-by-fleet basis.

3.8.10 UK beam trawl fleet: The UK beam trawl fleet target mixed fish species across a relatively wide area offshore. An average annual first sales value of ~£9.7 million landings is taken specifically within the study area by UK beam trawl vessels. Spatial data indicates the potential for low to moderate levels of activity across discreet portions of the cable corridor. Beam trawl vessels typically have wide operational ranges and fishing opportunities. Overall, the impact during construction is predicted to be of short-term duration, directly affecting a high value fishery in the regional scale, and the magnitude is considered to be **medium adverse** for UK beam trawl fisheries.

3.8.11 UK netting fleet: The UK netting fleet target hake and other fish species across what is understood to be a relatively wide area offshore. An average annual first sales value of ~£3 million landings is taken specifically within the study area by

UK netting vessels. Spatial activity data is limited and whilst there is potential for low to moderate levels of activity across discreet portions of the cable corridor, activity is expected to be focused to the south west of the Proposed Development. Netting vessels typically have relatively wide operational ranges and fishing opportunities. Overall, the impact during construction is predicted to be of short-term duration, directly affecting a medium to high value fishery in the regional scale, and the magnitude is considered to be **medium adverse** for UK netting fisheries.

3.8.12 UK potting fleet: Potting vessels are understood to be active across the study area and activity by these vessels accounts an average annual first sales value of ~£2.9 million landings is taken specifically within the study area by UK potting vessels. Potting tends to be undertaken by small (under 15 m length) vessels with activity concentrated inside of the 6 nm limit, and thus interactions between the Proposed Development and this fishery are expected to be focused around the nearshore section of the cable corridor. Based on their small vessel size and more distinct grounds, potters tend to have relatively limited operational ranges and fishing opportunities.

3.8.13 During construction, potting vessels will be required to remove pots from construction areas and either relocate or bring to shore depending on available grounds and fishing preferences. Potting fishermen will therefore experience loss of earnings for the time taken to relocate gear, and a loss of earnings associated with not being able to fish the specific grounds under construction (e.g., if alternative grounds are either not available, or not as productive). Potting typically involves a number of fleets of pots being deployed across a range of areas, and while it is unlikely that 100% of pots deployed by a single vessel will be impacted at any one time, it is understood that in this area specific potting grounds are targeted by specific operators. In this case, individual fishing businesses that routinely target the site will be impacted to a higher extent and this is accounted for within the assessment.

3.8.14 Overall, the impact during construction is predicted to be of short-term duration, directly affecting a medium to high-value fishery and the magnitude is considered to be **medium adverse** for potting fisheries.

3.8.15 UK demersal trawl fleet: The UK demersal trawl fleet target mixed demersal species and Nephrops across a relatively wide area offshore. An average annual first sales value of ~£1.8 million landings is taken specifically within the study area by UK demersal trawl vessels. Spatial data indicates the potential for low to moderate (occasionally high) levels of activity across discreet portions of the cable corridor. Demersal trawl vessels typically have wide operational ranges and fishing opportunities. Overall, the impact during construction is predicted to be of short-term duration, directly affecting a medium value fishery of regional scale, and the magnitude is considered to be **medium adverse** for UK demersal trawl fisheries.

3.8.16 UK pelagic trawl fleet: The UK pelagic trawl fleet target horse mackerel with an average annual first sales value of ~£631,000 landings taken within the study area. Pelagic trawl vessels typically have very wide operational ranges and fishing opportunities and VMS data indicates limited scope for this activity to overlap with the cable corridor. Overall, the impact during construction is predicted to be of short-term duration, directly affecting a medium to high value fishery in the regional scale, and the magnitude is considered to be **low adverse** for UK pelagic trawl fisheries.

3.8.17 UK dredge fleet: The UK dredging fleet target scallop across a relatively wide area offshore. An average annual first sales value of ~£232,000 landings is taken specifically within the study area by UK dredging vessels. Spatial data indicates the potential for low levels of dredge activity across a discrete portion of the cable corridor, though the corridor avoids key grounds as indicated by VMS data. Dredgers typically have wide operational ranges and fishing opportunities. Overall, the impact during construction is predicted to be of short-term duration, directly affecting a low to medium value fishery in the regional scale, but a relatively low value fishery within area of physical works and the magnitude is considered to be **low adverse** for UK dredge fisheries.

3.8.18 EU beam trawl fleet: VMS data indicates potential for low levels of EU beam trawl activity along the cable corridor though vessels typically have very wide operational ranges and fishing opportunities. Overall, the impact during construction is predicted to be of short-term duration, to directly affect the fishery and be **low adverse**.

3.8.19 EU demersal trawl fleet: VMS data indicates potential for some EU demersal trawl activity along the cable corridor though vessels typically have very wide operational ranges and fishing opportunities. Overall, the impact during construction is predicted to be of short-term duration, to directly affect the fishery and be **low adverse**.

3.8.20 EU pelagic trawl fleet: EU pelagic trawl vessels typically have very wide operational ranges and fishing opportunities and activity by this fleet along the cable corridor is expected to be limited and sporadic. Overall, the impact during construction is predicted to be of short-term duration, to directly affect the fishery and be **low adverse**.

Significance of the Effect

3.8.21 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **medium**. The effect is **minor adverse**, which is not significant.

3.8.22 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **medium**. The effect is **minor adverse**, which is not significant.

3.8.23 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **medium**. The effect is **moderate adverse**, which is significant.

3.8.24 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **medium**. The effect is **minor adverse**, which is not significant.

3.8.25 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.26 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.27 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.28 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.29 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Further Mitigation

3.8.30 UK potting fleet: With respect to any justifiable disturbance payment, the procedures as outlined in the FLOWW guidance documents (2014 and 2015), will be followed. Specifically, this will consist of the provision of evidence and data, examples of which include (FLOWW 2015):

- Copy of certificate of registry for each vessel for which a claim is being made;
- Copy of a valid Maritime and Coastguard Agency (MCA) certification or equivalent;
- Copy of the relevant vessel fishing licenses and entitlements for each vessel for which a claim is being made;
- Sight of vessels fishing charts and Global Positioning System (GPS) plotter records to provide clear historic evidence of potential disruption in the area of the operations;
- Evidence of sales notes where available for an agreed time period;
- Fishing accounts of the vessels concerned for an agreed time period;
- Fishing vessel or and / or fisheries landings data held by fisheries authorities. Due to the requirements of the Data Protection Act, for access to individual records a declaration will need to be completed in order for records to be released; and
- It may be appropriate to validate sources of evidence not obtained directly from claimants in order to verify accuracy (for example, transcription errors may exist in official landings data).

3.8.31 Through the application of justifiable disturbance payments in line with FLOWW guidance, the residual effect will therefore be **minor adverse**, which is not significant.

Displacement leading to gear conflict and increased fishing pressure on adjacent grounds

3.8.32 As described above, during the construction phase, fishing activity will be temporarily excluded from discrete areas due to the need to implement rolling safe passing distances around construction vessels. The cable corridor will have to remain clear of static gear to allow construction works to be undertaken. In addition, during the construction phase, fishing vessels will be advised to avoid fishing around sections of the corridor where the installed cable may be temporarily vulnerable (e.g. short periods between cable lay and any separate protection installation required).

3.8.33 The temporary lack of access to certain areas for fishing, could, in turn, result in limited and short-term displacement of fishing activity into other areas.

Sensitivity of receptor

3.8.34 The sensitivity of the fleets is as described above, being **medium** for the UK potting fleet, **low** for the UK beam trawl, UK netting, UK demersal trawl, UK dredge, EU beam trawl and EU demersal trawl fleets, and **negligible** for the UK and EU pelagic trawl fleets.

Magnitude of impact

3.8.35 For vessels that deploy static gear, there could be potential for conflicts associated with displacement effects to arise where gear has been temporarily relocated into grounds where other static gear vessels or mobile gear vessels operate. Similarly, vessels which operate mobile gears may be displaced to grounds where other mobile gear vessels operate, also increasing conflict and competition for fishing grounds.

3.8.36 Whilst it is difficult to predict where fishing activity may be displaced to and how this may affect individual vessels, in all cases the level of displacement will be a function of the extent of loss or restricted access to fishing grounds, which is expected to be limited. The magnitude of impact, sensitivity of the receptor and resulting significance of effect in respect of displacement would, at worst, be as identified in relation to loss of grounds or restricted access to fishing grounds.

3.8.37 The magnitude is therefore considered to be **medium adverse** for the UK beam trawl, potting, netting and demersal trawl fleets and **low adverse** for all other fleets.

Significance of the Effect

3.8.38 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **medium**. The effect is **minor adverse**, which is not significant.

3.8.39 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **medium**. The effect is **minor adverse**, which is not significant.

3.8.40 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **medium**. The effect is **moderate adverse**, which is significant.

3.8.41 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **medium**. The effect is **minor adverse**, which is not significant.

3.8.42 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.43 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.44 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.45 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.46 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Further Mitigation

3.8.47 UK potting fleet: With respect to any justifiable disturbance payment, the procedures as outlined in the FLOWW guidance documents (2014 and 2015), will be followed. Specifically, this will consist of the provision of evidence and data, examples of which include (FLOWW 2015):

- Copy of certificate of registry for each vessel for which a claim is being made;
- Copy of a valid Maritime and Coastguard Agency (MCA) certification or equivalent;
- Copy of the relevant vessel fishing licenses and entitlements for each vessel for which a claim is being made;
- Sight of vessels fishing charts and Global Positioning System (GPS) plotter records to provide clear historic evidence of potential disruption in the area of the operations;
- Evidence of sales notes where available for an agreed time period;
- Fishing accounts of the vessels concerned for an agreed time period;
- Fishing vessel or and / or fisheries landings data held by fisheries authorities. Due to the requirements of the Data Protection Act, for access to individual records a declaration will need to be completed in order for records to be released; and
- It may be appropriate to validate sources of evidence not obtained directly from claimants in order to verify accuracy (for example, transcription errors may exist in official landings data).

3.8.48 Through the application of justifiable disturbance payments in line with FLOWW guidance, the residual effect will therefore be **minor adverse**, which is not significant.

Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity

3.8.49 Temporary noise and seabed disturbances during construction activities may displace commercially important fish and shellfish populations from the area. This section assesses the potential temporary subsequent impact for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices would be affected.

Sensitivity of receptor

3.8.50 There is potential for fishing grounds beyond the immediate construction activities to be affected by these impacts, albeit at a localised scale. While exposure to the impact is likely during the short-term period of construction activities and commercial fleets targeting key species will be affected, including those targeting shellfish species, the localised nature of these project related construction activities will minimise the extent of the impact. It is also recognised that commercial fleets are not limited to grounds specifically within the project area of physical work, and a range of alternative fishing grounds are expected to be fishable, that would not experience any resource impacts.

3.8.51 Given the expected greater reliance on fishing grounds across the Proposed Development area, together with the relatively low mobility of shellfish target species, the UK potting fleet is deemed to be of medium vulnerability and medium recoverability; the sensitivity is considered to be **medium**.

3.8.52 For all other fleets, due to the range of alternative areas targeted and the distribution of key commercial species, fleets are deemed to be of low vulnerability and high recoverability. The sensitivity of the receptor for all other fleets is therefore considered to be **low**.

Magnitude of impact

3.8.53 Detailed assessments of the following potential construction impacts on fish and shellfish receptors have been undertaken in Volume 3, Chapter 2: Fish and Shellfish Ecology:

- Temporary habitat loss and disturbance;
- Temporary increase in suspended sediment concentrations (SSC) and sediment deposition;
- Injury and disturbance from noise and vibration;
- Reduction in marine water quality due to accidental pollution; and
- Introduction of invasive non-native species.

3.8.54 With respect to the magnitude of this impact on commercial fisheries, the overall significance of the effect on fish and shellfish species is considered (i.e., both the magnitude and sensitivity of fish and shellfish species are considered to directly influence the magnitude on commercial fishing fleets). This is because the overall effect on the fish and / or shellfish species relates directly to the availability and amount of exploitable resource. For instance, where an effect of negligible significance is assessed for a species, a negligible magnitude is assessed for commercial fishing; where an effect of minor adverse significance is assessed for a species, a low magnitude is assessed for commercial fishing, i.e., the overall significance for fish and shellfish ecology helps to determine the magnitude of the impact for commercial fishing fleets.

3.8.55 Details of the fish and shellfish ecology assessment are summarised in **Table 3.15**; justifications for this assessment will not be repeated in this chapter. Evidence and justifications for these assessments are provided in Volume 3, Chapter 2: Fish and Shellfish Ecology.

3.8.56 The significance of effect is considered to be negligible to minor adverse for all potential impacts on fish and shellfish resources. The magnitude of impact on

commercial fisheries receptors is predicted to be of very localised spatial extent, of short-term duration and to relate to a low to negligible loss of commercial resources. The magnitude of impact to all commercial fisheries receptors is assessed to be **low adverse**.

Table 3.15: Significance of effects of construction impacts on fish and shellfish species relevant to commercial fisheries receptors

Potential impact (construction phase)	Significance of effect
Temporary loss and disturbance to fish and shellfish habitats and species	Negligible to minor adverse
Temporary increase in suspended sediment concentrations and sediment deposition leading to contaminant mobilization, turbidity and smothering effects	Negligible to minor adverse
Reduction in marine water quality due to accidental leaks and spills from Project Vessels	Negligible to minor adverse
Underwater sound effects generated by construction activities and the use of vessels	Minor adverse
Introduction of invasive non-native species	Negligible

Significance of effect

3.8.57 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.58 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.59 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.60 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.61 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.62 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.63 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.64 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.65 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Increased vessel traffic associated with the Proposed Development within fishing grounds leading to interference with fishing activity

3.8.66 This assessment focuses on the potential impact of Proposed Development-related vessel traffic and changes to shipping patterns as a result of navigational routes leading to interference with fishing activity (i.e. reduced access) during construction.

Sensitivity of receptor

3.8.67 Construction traffic is likely to constrain most potting and fixed netting activity across established construction supply routes due to the vulnerability of the marker buoys (for gears left in situ) to the propellers of passing construction vessels. It is noted that shipping routes do currently exist in the vicinity of the Proposed Development, and that the construction vessels are likely to follow these existing routes where possible. The UK potting and netting fisheries are deemed to be of medium vulnerability and high recoverability. The sensitivity of these receptors is therefore, considered to be **low-medium**.

3.8.68 All other fishery fleets are expected to be in a position to avoid the construction traffic. All other fleets are deemed to be of negligible vulnerability and high recoverability. The sensitivity of the receptors is therefore, considered to be **low**.

Magnitude of impact

3.8.69 Vessel movements (i.e., construction vessels transiting to and from areas undergoing construction works) related to the construction of the Proposed Development will add to the existing level of shipping activity in the study area (see Volume 3, Chapter 5: Shipping and Navigation for a full assessment of additional vessel movements). The maximum number of vessels involved in the construction works is expected to be two Cable Lay Vessels (CLV) supported by several ancillary vessels.

3.8.70 As part of the embedded mitigation measures, continuous liaison with the fishing industry will be undertaken including advance notification of the location and duration of construction activities, and presence of FLO representatives on ‘guard vessels’.

3.8.71 All fishing fleets are considered to be able to avoid vessel movements related to the Proposed Development construction. The impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. The magnitude is therefore considered to be **low adverse** for all fishing fleets.

Significance of effect

3.8.72 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.73 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low-medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.74 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **low-medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.75 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.76 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.77 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.78 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.79 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.80 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Physical presence of infrastructure leading to gear snagging

3.8.81 Under-construction cables and associated cable protection on the seabed may pose a snagging risk to fishing gear.

3.8.82 A number of liaison and management measures will be implemented to ensure that snagging risk to fishing gear is minimised and mitigated appropriately (see **Table 3.14**). This includes issue of advance notices detailing planned installation works, and adherence to safe passing distances around installation vessels, which will be monitored by guard vessels.

Sensitivity of receptor

3.8.83 In the event that fishing gear snags with temporarily exposed cable or a seabed obstacle, it is likely for the gear to be damaged or lost. As such, all fisheries are considered to have limited adaptability to the potential impact.

3.8.84 Due to the nature and operation of mobile gear (i.e., it is actively towed and may directly penetrate the seabed with near continuous contact in the case of some gear types) there is increased vulnerability to this impact and the sensitivity is therefore considered to be **medium** for all mobile gear fisheries except pelagic trawl gear. Pelagic trawl gear does not interact with the seabed and is considered to be of **negligible** sensitivity.

3.8.85 UK potters and static netters show a low vulnerability as the gear is placed, not towed and is less likely to penetrate the seabed. The sensitivity of UK potters and netters is considered to be **low**.

Magnitude of impact

3.8.86 It is considered likely that fishermen will operate appropriately (i.e., adhering to safe passing distances and avoiding under-construction infrastructure) given adequate notification.

3.8.87 In the instance that snagging does occur, the Applicant would work to the protocols laid out within the guidance produced by the FLOWW group and "Recommendations for Fisheries Liaison: Best Practice" guidance for offshore renewable developers, in particular section 11: Dealing with claims for loss or damage of gear.

3.8.88 The impact is predicted to be small in extent (being localised around the immediate footprint of any exposed cable – which is not anticipated) and of short-term, temporary duration. In addition, a range of embedded mitigation measures will be implemented. The magnitude of the impact is therefore considered to be **low adverse** for all fishing fleets.

Significance of effect

3.8.89 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.90 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.91 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.92 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.93 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.94 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.95 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.96 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.8.97 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9 Preliminary Assessment of Operational Effects

3.9.1 The impacts of the operation and maintenance (Operational-repair) phase of the Proposed Development have been assessed. The preliminary potential impacts arising from the operation and maintenance phase of the Proposed Development are listed in **Table 3.18**, with a full description of each identified impact in this section.

Reduction in access to, or exclusion from established fishing grounds

3.9.2 The assessment assumes that commercial fisheries may be prevented from actively fishing within the footprint of any planned cable inspections and unplanned repair works. Any such 'Operational-repair' activities would be short-term and isolated to the immediate repair location. The associated activity types and impacts would be equivalent to the construction phase discussions above, with the associated scale of 'magnitude' likely much reduced in comparison (short-term and highly localised activities). Beyond Operational-repair exclusions, it is assumed that fishing will resume across the Proposed Development area during the Operational phase.

3.9.3 Whilst it is recognised that maritime guidance regarding the avoidance of trawling (and anchoring) in the vicinity of subsea cables (e.g. the Mariner's Handbook (P100) 12th Edition (UKHO, 2020), all Admiralty charts, and the recent Marine Guidance Note (MGN) 661 published by the MCA) exists, it is equally recognised that such activity may still occur over the installed cables either inadvertently or at the discretion of individual vessel operators, acknowledging that there is not a statutory exclusion in place. As such, the subsea cable will be suitably designed and installed to reduce the risk of it being damaged by fishing activity, as far as is practicable, primarily achieved by its burial to a target depth of 1.5 m below the seabed, with all cable protection (sediment backfill, rock placement, berms, and concrete mattresses), installed according to best practice.

3.9.4 The cable will be clearly marked on Admiralty charts and communicated to fisheries stakeholders.

Sensitivity of receptor

3.9.5 The sensitivity of the fleets is as described above during construction, being **medium** for the UK potting fleet, **low** for the UK beam trawl, UK netting, UK demersal trawl, UK dredge, EU beam trawl and EU demersal trawl fleets, and **negligible** for the UK and EU pelagic trawl fleets.

Magnitude of impact

3.9.6 This impact (Operational-repair) will lead to highly localised loss of access to fishing grounds and the fish and shellfish resources within these grounds for a range of fishing opportunities during the operational phase, which could directly affect fleets over a long-term duration, noting an operational design life of

approximately 50 years. The impact is however predicted to be sporadic and temporary with high reversibility for the lifetime of the Proposed Development.

3.9.7 Based on embedded mitigation relevant to commercial fisheries and the ability for fishing to resume across the Proposed Development area, it is expected that all fishing fleets will have the opportunity to continue fishing throughout the operational phase. The impact magnitude (Operational-repair) is assessed as **low adverse** for all fishing fleets. The impact magnitude (normal Operational phase) is assessed as **negligible-low adverse** for all fishing fleets.

Significance of effect

3.9.8 The operational phase significance ratings presented below are associated with the worst case Operational-repair activities, noting that the majority of the operational phase (normal operation) will by comparison have reduced magnitude (and associated significance).

3.9.9 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.10 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.11 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.12 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.13 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.14 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.15 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.16 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.17 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Displacement leading to gear conflict and increased fishing pressure on adjacent grounds

3.9.18 The operational phase of the Proposed Development has potential to result in a temporary loss of fishing grounds as a result of the potential need to implement discrete safe passing distances around maintenance works or around section of

cables that may be vulnerable (Operational-repair activities). This could in turn result in a displacement of fishing activity into other areas. Any such 'Operational-repair' activities would be short-term and isolated to the immediate repair location. The associated activity types and impacts would be equivalent to the construction phase discussions above, with the associated scale of 'magnitude' likely much reduced in comparison (short-term and highly localised activities). Beyond Operational-repair exclusions, it is assumed that fishing will resume across the Proposed Development area during the Operational phase.

3.9.19 As previously mentioned in respect of the Construction phase, for vessels that deploy static gear, there could be potential for conflicts associated with displacement effects to arise whereby gear that has to be temporarily removed, is relocated into grounds where other static gear vessels or mobile gear vessels operate. Similarly, vessels which operate mobile gears may be displaced to grounds where other mobile gear vessels operate, also increasing conflict and competition for fishing grounds.

3.9.20 Whilst it is difficult to predict where fishing activity may be displaced to and how this may affect individual vessels, in all cases, the level of displacement would be a function of the extent of loss or restricted access to fishing grounds. It is therefore considered that the magnitude of impact, sensitivity of the receptor and resulting significance of effect in respect of displacement would, at worst, be as identified in relation to loss of grounds or restricted access to fishing grounds.

Sensitivity of receptor

3.9.21 The sensitivity of the fleets is as described above, being **medium** for the UK potting fleet, **low** for the UK beam trawl, UK netting, UK demersal trawl, UK dredge, EU beam trawl and EU demersal trawl fleets, and **negligible** for the UK and EU pelagic trawl fleets.

Magnitude of impact

3.9.22 This impact (Operational-repair) will lead to highly localised loss of access to fishing grounds and the fish and shellfish resources within these grounds for a range of fishing opportunities during the operational and maintenance phase, which could directly affect fleets over a long-term duration, noting an operational design life of approximately 50 years. The impact is predicted to be sporadic and temporary with high reversibility for the lifetime of the Proposed Development.

3.9.23 Based on embedded mitigation relevant to commercial fisheries and the ability for fishing to resume across the Proposed Development area, it is expected that all fishing fleets will have the opportunity to continue fishing throughout the operational phase. The impact magnitude is assessed as **low adverse** for all fishing fleets.

3.9.24 The impact magnitude (normal Operational phase) is assessed as **negligible-low adverse** for all fishing fleets.

Significance of effect

3.9.25 The operational phase significance ratings presented below are associated with the worst case Operational-repair activities, noting that the majority of the operational phase (normal operation) will by comparison have reduced magnitude (and associated significance).

3.9.26 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.27 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.28 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant

3.9.29 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.30 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.31 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.32 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.33 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.34 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity

Sensitivity of receptor

3.9.35 The sensitivity of the commercial fisheries receptors is the same as that presented for construction summarised as **medium** for the UK potting fleet and **low** for all other fleets.

Magnitude of impact

3.9.36 Permanent and temporary impacts from operation of the Proposed Development and unplanned maintenance activities (Operational-repair) may displace commercially important fish and shellfish populations from the area. This section assesses the potential subsequent impact for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices would be affected.

3.9.37 The approach to this assessment follows that outlined for construction above, with details of the fish and shellfish ecology assessment summarised in **Table 3.16.**

3.9.38 The significance of effect is considered to be negligible to minor adverse for all potential impacts on fish and shellfish resources. The magnitude of impact on commercial fisheries receptors is predicted to be of very localised spatial extent, of short-term duration and to relate to a minor to negligible loss of commercial resources. The magnitude of impact to all commercial fisheries and aquaculture receptors is assessed to be **low adverse**.

Table 3.16: Significance of effects of operation and maintenance impacts on fish and shellfish species relevant to commercial fisheries receptors

Potential impact (Operational)	Significance of effect
Temporary habitat loss / disturbance	Negligible
Temporary increases in suspended sediments (Op-repair)	Negligible
Injury and disturbance from noise and vibration (Op-repair)	Minor adverse
Electromagnetic field (EMF) effects (Op-normal)	Minor adverse
Habitat alteration and long-term habitat loss	Negligible to Minor adverse
Changes to water quality as a result of accidental pollution (Op-repair)	Negligible to minor adverse
Change in hydrodynamic regime (Op-normal)	Negligible
Sediment heating (Op-normal)	Negligible
Introduction of invasive non-native species (Op-repair)	Negligible

Significance of effect

3.9.39 The operational phase significance ratings presented below are associated with the worst case Operational-repair activities, noting that the majority of the operational phase (normal operation) will by comparison have reduced magnitude (and associated significance).

3.9.40 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.41 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.42 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.43 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.44 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.45 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.46 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.47 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.48 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Increased vessel traffic associated with the Proposed Development within fishing grounds leading to interference with fishing activity

3.9.49 This assessment focuses on the potential impact of Proposed Development-related vessel traffic and changes to shipping patterns as a result of navigational routes leading to interference with fishing activity (i.e., reduced access) during operation.

3.9.50 Such interference is expected to be extremely limited, noting that the only *planned* activity during the operation and maintenance phase is low-frequency routine survey of the cable corridor, which will involve a single survey vessel.

Sensitivity of receptor

3.9.51 Survey vessel activity may constrain potting and fixed netting activity across the survey area due to the vulnerability of the marker buoys (for gears left *in-situ*) to the propellers or towed equipment of the survey vessel. The UK potting and netting fisheries are deemed to be of medium vulnerability and high recoverability. The sensitivity of these receptors is therefore, considered to be **low-medium**.

3.9.52 All other fishery fleets are expected to be in a position to avoid the survey vessel. All other fleets are deemed to be of negligible vulnerability and high recoverability. The sensitivity of the receptors is therefore, considered to be **low**.

Magnitude of impact

3.9.53 A maximum of one survey vessel will be utilised during routine cable inspections. There may be a requirement to undertake unplanned maintenance works in the event of failure of components of the system or if a cable becomes exposed, though this is not anticipated (Operational-repair). In this instance, several vessels may be engaged in cable repair. Both planned survey and unplanned maintenance would take place on a temporary, short-term (and localised in terms of repair) basis.

3.9.54 As part of the embedded mitigation measures, continuous liaison with the fishing industry will be undertaken including advance notification of the location and duration of maintenance activities.

3.9.55 All fishing fleets are considered to be able to avoid vessel movements related to the Proposed Development operation. The impact is predicted to be of local

spatial extent, short term duration, intermittent and high reversibility. The magnitude is therefore considered to be **low adverse** for all fishing fleets.

Significance of effect

3.9.56 The operational phase significance ratings presented below are associated with the worst case Operational-repair activities, noting that the majority of the operational phase (normal operation) will by comparison have reduced magnitude (and associated significance).

3.9.57 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.58 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low-medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.59 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **low-medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.60 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.61 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.62 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.63 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.64 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.65 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Physical presence of infrastructure leading to gear snagging

3.9.66 During the operational phase the cables will be buried and/or protected in such a manner that fishing can resume over them. In the event that discrete areas of trenched cable become exposed during operation, or cable protection is damaged, this infrastructure may pose a snagging risk to fishing gear.

3.9.67 A number of liaison and management measures will be implemented to ensure that snagging risk to fishing gear is minimised and mitigated appropriately (see **Table 3.14**). This includes inspection surveys throughout the 50 year operational lifespan of the proposed development.

Sensitivity of receptor

3.9.68 In the event that fishing gear snags with exposed cable or a seabed obstacle, it is likely for the gear to be damaged or lost. As such, all fisheries are considered to have limited adaptability to the potential impact.

3.9.69 Due to the nature and operation of mobile gear (i.e., it is actively towed and may directly penetrate the seabed with near continuous contact in the case of some gear types) there is increased vulnerability to this impact and the sensitivity is therefore considered to be **medium** for all mobile gear fisheries except pelagic trawl gear. Pelagic trawl gear does not interact with the seabed and is considered to be of **negligible** sensitivity.

3.9.70 UK potters and static netters show a low vulnerability as the gear is placed, not towed and is less likely to penetrate the seabed. The sensitivity of UK potters and netters is considered to be **low**.

Magnitude of impact

3.9.71 It is considered likely that fishermen will operate appropriately (i.e., avoiding any hazards) given adequate notification.

3.9.72 The impact is predicted to be small in extent (being localised around the immediate footprint of any exposed cable – which is not anticipated) and of short-term duration. In addition, a range of embedded mitigation measures will be implemented. The magnitude of the impact is therefore considered to be **low adverse** for all fishing fleets.

Significance of effect

3.9.73 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.74 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.75 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.76 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.77 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.78 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.79 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.80 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.9.81 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **negligible**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Potential Changes to the Assessment as a Result of In-Combination Climate Impacts

3.9.82 Commercial fisheries receptors (i.e. relevant fishing fleets) could theoretically be impacted by climate change over the lifetime of the Proposed Development. This section succinctly assesses the following aspects:

- The effect of climate change on the local area in which the proposed development will take place; and
- The likely impacts of climate change and the project in-combination on the receiving environment.

3.9.83 The two main climate trends which could affect commercial fisheries receptors are described in the text below.

3.9.84 Increased sea temperature/change in pH levels have the potential to affect the distribution of commercially targeted fish and shellfish stocks in the commercial fisheries study area. Changes may result from changes in seabed habitat or natural disturbance events. Changes would be expected to have limited effects on mobile species, but with potential for effects on substrate-dependent species such as herring and sandeel, and on shellfish. Changes may in turn affect commercial fishing activity in the study area over the long-term; for example, altering fishing methods, targeted grounds and seasonal patterns in activity.

3.9.85 An increase in storm events may also directly impact fishing activity in the study area, with changes to seasonal fishing patterns in response to changes in weather and periods of safe fishing conditions.

3.9.86 Climate change could potentially cause changes in patterns of fishing activity over the lifetime of the Proposed Development. However, the Proposed Development will not contribute to the impacts of climate change to any significant extent. Accordingly, climate change does not alter the basis or conclusions of the assessments made in relation to commercial fisheries as presented in this chapter.

3.10 Preliminary Assessment of Decommissioning Effects

3.10.1 At the end of the operational life of the cable the options for decommissioning will be evaluated and taking into consideration other Proposed Development constraints (e.g., safety and liability), the least environmentally damaging option would be chosen if possible.

3.10.2 Should full removal of the cable from the seabed be required, this would have the potential to cause similar impacts to the construction phase (**section 3.8**), noting that the magnitude of effects associated with cable removal would likely to reduced relative to construction phase impacts. As a precautionary approach, the

impacts identified in the appraisal undertaken in respect of the construction phase are considered to also apply to decommissioning activities.

3.10.3 If cables are left *in-situ*, this would result in permanent impacts similar to that identified for the operational phase (**section 3.9**).

3.11 Cumulative Effects Assessment

3.11.1 The Cumulative Effects Assessment (CEA) assesses the impact associated with the Proposed Development 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 1, Appendix 5.3: CEA screening matrix). 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.

3.11.2 The commercial fisheries CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the PEIR. As part of the assessment, all projects and plans considered alongside the Proposed Development have been allocated into 'tiers' reflecting their current stage within the planning and development process (as advocated under the Planning Act, 2008).

- 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
- Tier 3
  - Scoping report has not been submitted
  - Identified in the relevant Development Plan
  - Identified in other plans and programmes.

3.11.3 This tiered approach is adopted to provide a clear assessment of the Proposed Development alongside other projects, plans and activities.

3.11.4 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 3.17**.

3.11.5 Certain impacts assessed for the Proposed Development alone are not considered in the cumulative assessment due to:

- the highly localised nature of the impacts (i.e., they occur entirely within Proposed Development only);
- management measures in place for the Proposed Development (**Table 3.14**) will also be in place on other projects reducing their risk of occurring; and/or
- where the potential significance of the impact from the Proposed Development alone has been assessed as negligible.

3.11.6 The impacts excluded from the CEA for the above reasons are:

- increased risk of gear snagging; and
- increased vessel traffic within fishing grounds as a result of changes to shipping routes and Proposed Development related vessel traffic leading to interference with fishing activity.

3.11.7 Therefore, the impacts that are considered in the CEA during construction and operation and maintenance are as follows:

- reduction in access to, or exclusion from established fishing grounds;
- displacement leading to gear conflict and increased fishing pressure on established fishing grounds; and
- displacement or disruption of commercially important fish and shellfish resources.

3.11.8 In the absence of a confirmed approach to decommissioning nor certainty over timing of decommissioning, CEA has not provided detailed consideration of cumulative effects during that phase of the Proposed Development.

Table 3.17: List of cumulative developments considered within the CEA

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Tier 1						
Aqua Botanika seaweed cultivation	Proposed	27.4	Proposed kelp farm. With kelp grown on ropes in a nearshore area off Ilfracombe, North Devon.	Proposed 2024	Proposed from 2025	Yes, during operational phase only (construction will be complete at the point of Proposed Development installation)
TwinHub Floating Offshore Wind Demonstration Project	Under construction	29.5	Proposed two-turbine floating offshore wind farm, off the coast of St Ives, Cornwall.	Proposed 2024	Proposed from 2025	
White Cross Floating Offshore Windfarm	Permitted	7.8	Proposed floating offshore wind farm, comprising 6 to 8 turbines, 52 km off the North Cornwall and North Devon coast.	Proposed 2024	Proposed from 2026	
Celtic Interconnector	Permitted	Crosses cable corridor	A submarine cable within the UK EEZ approximately 211 km in length placed on or beneath the seabed. It passes approximately 30 km west of the Isles of Scilly and approximately 75 km west of Land's End, but does not enter UK Territorial Waters.	Proposed 2024	Proposed from 2027	
Tier 3						
The Crown Estate's Celtic Sea Floating Offshore Wind Leasing Round 5 - Project Development Area 2 (PDA2)	Future planned development	20.1	Project Development Area (PDA) 2 sits within Welsh and English Governance and is one of three suitable PDAs identified within the Celtic Sea for floating offshore wind development, each of which having a potential capacity of up to 1.5 GW. Currently in the early stages of the project, the schedule for PDA 2 is unknown, however, pre-consent metocean surveys are	Not known	Not known	Not known

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			planned for early 2024 and geotechnical investigations are planned for summer 2024.			
The Crown Estate's Celtic Sea Floating Offshore Wind Leasing Round 5 - Project Development Area 3 (PDA3)	Future planned development	Crosses cable corridor	Project Development Area (PDA) 3 sits within English Governance and is one of three suitable PDAs identified within the Celtic Sea for floating offshore wind development, each of which having a potential capacity of up to 1.5 GW. Currently in the early stages of the project, the schedule for PDA 3 is unknown, however, pre-consent metocean surveys are planned for early 2024 and geotechnical investigations are planned for summer 2024.	Not known	Not known	Not known
The Crown Estate's Celtic Sea Floating Offshore Wind Leasing Round 5 - Project Development Area 1 (PDA1)	Future planned development	36.7	Project Development Area (PDA) 1 sits within Welsh Governance and is one of three suitable PDAs identified within the Celtic Sea for floating offshore wind development, each of which having a potential capacity of up to 1.5 GW. Currently in the early stages of the project, the schedule for PDA 1 is unknown; however, pre-consent metocean surveys are planned for early 2024 and geotechnical investigations are planned for summer 2024.	Not known	Not known	Not known

Cumulative Effects Assessment

3.11.9 A description of the significance of cumulative effects upon commercial fisheries receptors arising from construction and operation is given below.

Cumulative reduction in access to, or exclusion from established fishing grounds

Tier 1 Projects

3.11.10 There is potential for cumulative reduction in access to or exclusion from established fishing grounds as a result of construction activities associated with the Proposed Development and other projects. However, the projects identified under Tier 1, which include offshore wind farms, a subsea cable and a kelp farm, will all be operational at the time that the Proposed Development enters construction (i.e. there will be no overlap of construction of the Proposed Development with the construction of other projects), and other project assessments do not identify significant impacts on commercial fisheries during their operational phases.

Sensitivity of receptor

3.11.11 Based on the operating ranges of the receptors and availability of alternative fishing grounds, the UK potting fleet is deemed to be of medium vulnerability and have medium recoverability and considered to have **medium** sensitivity.

3.11.12 Mobile gear and offshore netting fleets targeting demersal and pelagic species are deemed to be of low vulnerability, medium recoverability and to have high levels of alternative fishing grounds. The sensitivity of all other fleets on this basis is considered to be **low**.

Magnitude of impact

3.11.13 Noting that the other Tier 1 projects will be operational at the point of construction of the Proposed Development, and that no significant impacts on commercial fisheries are anticipated during their operational phases, no cumulative effect of significance greater than that assessed for the Proposed Development alone is foreseen during either the construction or operation and maintenance phase.

3.11.14 Should the other Tier 1 operational projects impact commercial fisheries access beyond the extent predicted in their impact assessments, it is noted that relevant fishing fleets typically operate over relatively wide areas and are not restricted to the footprint of any one of the projects or the Proposed Development and thus fleets demonstrate limited vulnerability to cumulative impacts.

3.11.15 Where any unforeseen cumulative reduction in access occurs, it will be of regional spatial extent, short-term duration and intermittent (e.g. where temporary reduced access associated with the construction of the Proposed Development overlaps with reduced access associated with unplanned maintenance of the other operational projects and these activities impact the same fleet). The magnitude of impact is considered to be **low adverse** for all fleets.

Significance of effect

3.11.16 UK beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.17 UK netting fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.18 UK potting fleet: Overall, it is predicted that the sensitivity of the receptor is **medium**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.19 UK demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.20 UK pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.21 UK dredge fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.22 EU beam trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.23 EU demersal trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

3.11.24 EU pelagic trawl fleet: Overall, it is predicted that the sensitivity of the receptor is **low**, and the magnitude is **low**. The effect is **minor adverse**, which is not significant.

Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds

Tier 1 Projects

3.11.25 The effect of displacement leading to gear conflict and increased fishing pressure is directly correlated to the previous impact of reduced access to fishing grounds (i.e., if there is no reduction in access, then there will be no displacement).

3.11.26 In the case of potential effects arising from the presence of Tier 1 projects, it is considered that the combined magnitude does not raise the cumulative impact of the projects above that already assessed for the Proposed Development alone.

3.11.27 In relation to all fishing fleets and in line with **paragraphs 3.11.16** to **3.11.24** above, the effect is of **minor adverse** significance, which is not significant in EIA terms.

Cumulative displacement or disruption of commercially important fish and shellfish resources

Tier 1 Projects

3.11.28 There is potential for cumulative displacement or disruption of commercially important fish and shellfish resources as a result of construction activities associated with the Proposed Development and other projects. However, the projects identified under Tier 1, which include offshore wind farms, a subsea cable and a kelp farm, will all be operational at the time that the Proposed Development enters construction (i.e. there will be no overlap of construction of the Proposed Development with the construction of other projects), and other project assessments do not identify significant impacts on commercial fisheries during their operational phases.

3.11.29 In the case of potential effects arising from the presence of Tier 1 projects, it is considered that the combined magnitude does not raise the cumulative impact of the projects above that already assessed for the Proposed Development alone (as supported by the CEA discussions in Volume 3, Chapter 2: Fish and Shellfish Ecology).

3.11.30 In relation to all fishing fleets and in line with **paragraphs 3.11.16** to **3.11.24** above, the effect is of **minor adverse** significance, which is not significant in EIA terms.

3.12 Transboundary Effects

3.12.1 Transboundary effects arise when impacts from a development within one European Economic Area (EEA) state affects the environment of another EEA state(s).

3.12.2 A screening of transboundary impacts has been carried out and any potential for significant transboundary effects with regard to commercial fisheries from the Proposed Development upon the interests of other states has been assessed as part of this PEIR. The potential transboundary impacts assessed within Volume 1, Appendix 5.2: Transboundary screening are summarised below:

- Effects on commercial fishing fleets from all EEA countries as a result of constraints on foreign commercial fishing activities operating in the Proposed Development, including EU beam trawling, demersal trawling and pelagic trawling: These effects may include reduction in access to fishing grounds and potential displacement of fishing effort from the Proposed Development to alternative fishing grounds in other EEA States, which will have direct implications for that fishing ground.

3.12.3 Since international fishing fleets are included in the baseline and impact assessment presented above (and impact significance does not exceed minor for EU fleets), there is no potential for additional transboundary impacts upon commercial fisheries receptors due to construction, operation and maintenance and decommissioning of the Proposed Development beyond the impacts assessed in **sections 3.8** to **3.10**.

3.13 Inter-related Effects

3.13.1 Inter-relationships are the impacts and associated effects of different aspects of the Proposed Development on the same receptor. These are as follows.

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Proposed Development (construction, operation and maintenance), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g., construction noise effects from piling and operational substation noise).
- Receptor led effects: Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on commercial fisheries, such as reduced access and disturbance of target fish and shellfish resource, may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.

3.13.2 A description of the likely interactive effects arising from the Proposed Development on commercial fisheries is provided in Volume 4, Chapter 5: Inter-related effects of the PEIR.

3.14 Summary of Impacts, Mitigation Measures and Monitoring

3.14.1 Information on commercial fisheries within the study area was collected through desktop review and stakeholder engagement.

3.14.2 **Table 3.18** presents a summary of the impacts, measures adopted as part of the Proposed Development and residual effects in respect to commercial fisheries.

3.14.3 In general terms the appraisal of the impact of the Proposed Development on commercial fisheries receptors identified impacts not exceeding minor significance and therefore additional mitigation, beyond the embedded mitigation proposed in **Table 3.14** is not considered necessary.

3.14.4 An exception to this is the impact of temporary loss of fishing grounds and associated displacement during the construction phase for the UK potting fleet, for which a potential moderate adverse impact significance was identified. As noted in **section 3.8**, it is recognised that in some instances the removal or relocation of static gear may be required during the construction phase.

3.14.5 Where this is the case, appropriate mitigation will be implemented for affected vessels following an evidence-based approach, in line with FLOWW guidance, via the establishment of co-operation agreements, which will reduce the significance of the effect to minor adverse, which is considered to be not significant.

3.14.6 As the Proposed Development is not anticipated to have significant residual effects on commercial fisheries, it will not undermine existing fishing restrictions and byelaws (as outlined in **section 3.5**) or hinder the implementation of fisheries management measures.

3.14.7 No specific monitoring with regard to commercial fishing has been proposed.

3.14.8 **Table 3.19** presents a summary of the potential cumulative impacts, mitigation measures and residual effects. The cumulative impacts assessed include:

- reduction in access to, or exclusion from established fishing grounds;
- displacement leading to gear conflict and increased fishing pressure on established fishing grounds; and
- displacement or disruption of commercially important fish and shellfish resources.

3.14.9 Overall, it is concluded that there will be no significant cumulative effects from the Proposed Development alongside other projects/plans.

3.14.10 No potential transboundary impacts have been identified in regard to effects of the Proposed Development:

Table 3.18: Summary of potential environmental effects

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
UK beam trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Short term	Medium	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Medium	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK netting fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Short term	Medium	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Medium	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low-Medium	Increased vessel traffic associated with the Project within fishing grounds	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		leading to interference with fishing activity					
	Low	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK potting fleet	Medium	Reduction in access to, or exclusion from established fishing grounds	Short term	Medium	Moderate adverse	Significant	Application of further mitigation in line with FLOWW guidance results in a residual effect that is not significant
	Medium	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Medium	Moderate adverse	Significant	Application of further mitigation in line with FLOWW guidance results in a residual effect that is not significant
	Medium	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low-Medium	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Low	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK demersal trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Short term	Medium	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Medium	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK pelagic trawl fleet	Negligible	Reduction in access to, or exclusion from established fishing grounds	Short term		Minor adverse	Not significant	
	Negligible	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Negligible	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK dredge fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
EU beam trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
EU demersal trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
EU pelagic trawl fleet	Negligible	Reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Negligible	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Short term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Short term	Low	Minor adverse	Not significant	
	Negligible	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
Operational phase (incorporating assessment of worst case Operational-repair activities)							
UK beam trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		fishing pressure on adjacent grounds					
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK netting fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low-medium	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK potting fleet	Medium	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Displacement leading to gear conflict and increased	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		fishing pressure on adjacent grounds					
	Medium	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low-medium	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK demersal trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK pelagic trawl fleet	Negligible	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Negligible	Displacement leading to gear conflict and increased	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		fishing pressure on adjacent grounds					
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Negligible	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
UK dredge fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
EU beam trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		fishing pressure on adjacent grounds					
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
EU demersal trawl fleet	Low	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
EU pelagic trawl fleet	Negligible	Reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Negligible	Displacement leading to gear conflict and increased	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		fishing pressure on adjacent grounds					
	Low	Displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Intermittent over long term	Low	Minor adverse	Not significant	
	Negligible	Physical presence of infrastructure leading to gear snagging	Long term	Low	Minor adverse	Not significant	
Decommissioning phase							
Full removal: As above for the Construction Phase Cables left *in-situ*: As above for the Operational Phase							

Table 3.19: Summary of potential cumulative environmental effects

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
UK beam trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		increased fishing pressure on established fishing grounds					
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
UK netting fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
UK potting fleet	Medium	Cumulative reduction in access to, or	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		exclusion from established fishing grounds					
	Medium	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Medium	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
UK demersal trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		commercially important fish and shellfish resources					
UK pelagic trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
UK dredge fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		increased fishing pressure on established fishing grounds					
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
EU beam trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
EU demersal trawl fleet	Low	Cumulative reduction in access to, or	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		exclusion from established fishing grounds					
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Short term	Low	Minor adverse	Not significant	
EU pelagic trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Short term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of	Short term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		commercially important fish and shellfish resources					
Operational phase (incorporating assessment of worst case Operational-repair activities)							
UK beam trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
UK netting fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		leading to gear conflict and increased fishing pressure on established fishing grounds					
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
UK potting fleet	Medium	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Medium	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
UK demersal trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
UK pelagic trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
UK dredge fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
EU beam trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
EU demersal trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish	Intermittent over long term	Low	Minor adverse	Not significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		and shellfish resources					
EU pelagic trawl fleet	Low	Cumulative reduction in access to, or exclusion from established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement leading to gear conflict and increased fishing pressure on established fishing grounds	Intermittent over long term	Low	Minor adverse	Not significant	
	Low	Cumulative displacement or disruption of commercially important fish and shellfish resources	Intermittent over long term	Low	Minor adverse	Not significant	
Decommissioning phase							
Full removal: As above for the Construction Phase Cables left *in-situ*: As above for the Operational Phase							

3.15 Next Steps

3.15.1 The steps to be undertaken to progress the commercial fisheries assessment from PEIR stage to ES stage are described below.

3.15.2 Baseline data and further information on other developments will continue to be collected prior to the finalisation of the ES and iteratively fed into the assessment. Additional baseline data sources may also be made available as a result of ongoing consultation; these may include maps of fishing effort within IFCA boundaries based on observed fishing activity during sea patrols and/or annotated charts of fishing grounds provided by local fishermen.

3.15.3 An updated main assessment and cumulative effects assessment will be reported in the ES as necessary, reflecting any additional baseline data and outcomes of ongoing consultation and engagement, in addition to any refinements in the Proposed Development design.

3.15.4 Further consultation and engagement will be undertaken to inform the ES. This will take the form of formal consultation on the PEIR and informal and ongoing consultation with commercial fisheries stakeholders.

3.16 References

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