



The Great Grid Upgrade

Sea Link

Sea Link

Volume 6: Environmental Statement

Document: 6.3.4.8
Part 4 Marine
Chapter 8
Commercial Fisheries

Planning Inspectorate Reference: EN020026

Version: B
November 2025

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009 Regulation 5(2)(a)

nationalgrid

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Version History

Date	Issue	Status	Description / Changes
March 2025	A	Final	For DCO submission
November 2025	B	Final	For Deadline 1A

8. Commercial Fisheries

8.1 Introduction

- 8.1.1 This chapter of the Environmental Statement (ES) presents information about the environmental assessment of the likely significant commercial fisheries effects that could result from the Proposed Project (as described in **Application Document 6.2.1.4 Part 1 Chapter 4 Description of the Proposed Project**).
- 8.1.2 This chapter describes the methodology used, the datasets that have informed the assessment, baseline conditions, mitigation measures and the commercial fisheries residual significant effects that could result from the Proposed Project.
- 8.1.3 The Order Limits, which illustrate the boundary of the Proposed Project, are illustrated on **Application Document 2.2.1 Overall Location**.
- 8.1.4 This chapter should be read in conjunction with:
- **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project;**
 - **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology;**
 - **Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation;**
 - **Application Document 6.2.4.2 Part 4 Marine Chapter 2 Benthic Ecology;**
 - **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology;**
 - **Application Document 6.2.4.7 Part 4 Marine Chapter 7 Shipping and Navigation;**
 - **Application Document 6.11 Marine Conservation Zone Assessment;**
 - **Application Document 7.5.2 Offshore Construction Environmental Management Plan;**
 - **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice;** and
 - **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC).**
- 8.1.5 This chapter is supported by the following figures:
- **Application Document 6.4.4.8 ES Figures Marine Commercial Fisheries.**
- 8.1.6 This chapter is supported by the following appendices:
- **Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report;** and

- **Application Document 5.1.9 Appendix H Summary 2023 Response.**

8.2 Regulatory and Planning Context

- 8.2.1 This section sets out the legislation and planning policy that is relevant to the commercial fisheries assessment. A full review of compliance with relevant national and local planning policy will be provided within the Planning Statement that will be submitted as part of the application for Development Consent.
- 8.2.2 Policy generally seeks to minimise effects from development on commercial fisheries and to avoid significant adverse effects. This applies particularly to access to fishing grounds and the ability for fishers to undertake fishing activity, while attempting to maintain a thriving and sustainable fishing industry.

Legislation

Marine and Coastal Access Act 2009

- 8.2.3 Marine and Coastal Access Act 2009 (HM Government, 2009) establishes fisheries management in the UK (i.e., legal duties of Inshore Fisheries Conservation Authorities (IFCAs) and the Marine Management Organisation (MMO)) and identifies the UK marine area including 6 nautical mile (NM) and 12 NM limits, and the Exclusive Economic Zone (EEZ).

Fisheries Act (2020)

- 8.2.4 Fisheries Act (2020) (HM Government, 2020) creates a legal requirement for the UK's national fisheries policy authorities to produce a Joint Fisheries Statement (JFS) (Defra, 2022) relating to identified fisheries objectives (e.g., sustainability, ecosystem, and access rights).

National policy

National Policy Statements

- 8.2.5 National Policy Statements (NPS) set out the primary policy tests against which the application for a Development Consent Order (DCO) for the Proposed Project would be considered. Table 8.1, Table 8.2 and Table 8.3 below provides details of the elements of NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC), 2023a) NPS for Renewable Energy Infrastructure (EN-3) (Department of Energy and Climate Change (DECC), 2023b) and NPS for Electricity Networks Infrastructure (EN-5) (Department of Energy and Climate Change (DECC), 2023c) that are relevant to this chapter.

Table 8.1 NPS EN-1 requirements relevant to commercial fisheries

NPS EN-1 section	Where this is covered in the ES
4.5.7... <i>“Applicants are encouraged to approach the marine licensing regulator (MMO in England and Natural Resources Wales in Wales) in pre-application, to ensure that they are aware of any needs for additional marine licenses alongside their Development Consent Order application”.</i>	The MMO were included in the Consultation process; and provided feedback, which has been actioned (see Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation , and Application Document 5.1.9 Appendix H Summary 2023 Response).
4.5.8... <i>“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”.</i>	Marine Plans are identified in Table 8.4 and considered in Section 8.9.

Table 8.2 NPS EN-3 requirements relevant to commercial fisheries

NPS EN-3 section	Where this is covered in the ES
2.8.154 <i>“Applicants should undertake early consultation with a cross section of the fishing industry, as well as MMO, SNCBs, relevant Inshore Fisheries and Conservation Authorities (IFCAs), Defra and Welsh Government, to identify impacts, and actively encourage input from active fishers to provide evidence of their use of the area to support the impact assessments.”</i>	<p>Consultation was initially carried out with local and international fisheries stakeholders in order to inform the baseline. The responses are presented in Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report.</p> <p>Consultation with relevant government bodies and regulators was also conducted following the Preliminary Environmental Impact Report (PEIR) stage; as presented in Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation.</p> <p>These consultations will continue following the completion of the ES, and the subsequent DCO process.</p>
2.8.155 <i>“Where any part of a proposal involves a grid connection or transmission to shore or in the inshore area, appropriate inshore fisheries groups should also be consulted.”</i>	<p>Consultation was initially carried out with fisheries stakeholders, including the Eastern Inshore Fishery and Conservation Authority, and Kent & Essex Inshore Fishery and Conservation Authority (Section 8.3) in order to inform the baseline.</p> <p>The baseline information is collated in Application Document 6.3.4.8.A Appendix 4.9.A Commercial Fisheries Technical</p>

NPS EN-3 section	Where this is covered in the ES
	<p>Report. This was then incorporated into section 8.7 of this chapter of the ES.</p> <p>These consultations will continue following the completion of the ES, and the subsequent DCO process.</p>
2.8.157 <i>“Applicant assessments should include robust baseline data and detailed surveys of the effects on fish stocks of commercial interest, and any potential reduction or increase in such stocks”... “The assessments should also provide evidence regarding any likely benefits or constraints on fishing activity within the project’s boundaries”.</i>	<p>Detailed baseline information and the potential significant effects of the Proposed Project on fish and shellfish species, including species of commercial importance, are assessed in Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology. The findings of the Fish and Shellfish chapter are cross referenced to inform potential impacts on commercial fishing where appropriate (Section 8.9).</p>

Table 8.3 NPS EN-5 requirements relevant to commercial fisheries

NPS EN-5 section	Where this is covered in the ES
2.2.10 <i>“...As well as having duties under Section 9 of the Electricity Act 1989, (in relation to developing and maintaining an economical and efficient network), applicants must take into account Schedule 9 to the Electricity Act 1989, which places a duty on all transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to “have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest ... and ...do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects”.</i>	<p>How the impacts to target species of fish and shellfish, and their associated habitats; which could have a knock-on effect to Commercial Fisheries receptors; has been appraised in Section 8.9.</p>

National Planning Policy Framework

- 8.2.6 The National Planning Policy Framework (NPPF) as revised in December 2024 (Ministry for Levelling Up, Housing and Communities, 2024) sets out national planning policies that reflect priorities of the Government for operation of the planning system and the economic, social, and environmental aspects of the development and use of land. The NPPF has a strong emphasis on sustainable development, with a presumption in favour of such development.
- 8.2.7 No specific requirements of the NPPF have been identified for commercial fisheries.

Marine Planning Policy

8.2.8 The following marine plans have been considered relevant to a study of commercial fisheries and has informed the assessment of effects in this chapter:

- The UK Marine Policy Statement (MPS) (2011) (HM Government, 2011) was adopted in 2011 and provides the policy framework for the preparation of marine plans and establishes how decisions affecting the marine area should be made.
- The East Inshore and East Offshore Marine Plans (2014) (HM Government, 2014) detail the approach to managing the Inshore and Offshore waters between Felixstowe in Suffolk, and Bridlington on in the East Riding of Yorkshire, including the Southern North Sea; sharing borders with the French, Belgian, and Dutch EEZs. The plan covers the resources, and the activities and interactions that take place within these waters; aiming to help ensure the sustainable development of the marine area; and
- South East Inshore Marine Plan (2021) (HM Government, 2021) details a strategic approach to planning within the English inshore waters between the west of Dover in Kent, and Felixstowe in Suffolk. It provides an evidence-based approach to inform decision-making by marine users and regulators within the southeast inshore marine plan area, aiming to achieve sustainable development and optimal use of the marine area's natural capital.

Table 8.4 Marine Planning Policies relevant to commercial fisheries

Marine Plan	Where this is covered in the ES
The UK MPS ensures that marine resources are used in a sustainable way by ensuring biodiversity is protected and conserved by using the precautionary principle and relying on sound evidence.	In line with policy objectives relevant to displacement of commercial fisheries in the MPS, this ES chapter recognises that fishing activity may be sensitive to changes in relation to the Proposed Project activities. Mitigation, embedded, and control and management measures of relevance to commercial fisheries are described in Section 8.8.
East Inshore and East Offshore Marine Plan ensures biodiversity is protected and conserved between Flamborough Head and Felixstowe.	The policies within the East Inshore and East Offshore Marine Plans state that proposals must minimise and mitigate any adverse impacts on the ability to undertake fishing activities or to access fishing grounds. Mitigation, embedded, and control and management measures of relevance to commercial fisheries are described in Section 8.8. An assessment of effects to commercial fisheries are discussed in Section 8.9.
South East Inshore Marine Plan ensures biodiversity is protected and conserved between Felixstowe and Dover.	The policies within the South East Inshore Marine Plan support sustainable fishing and diversification of the fishing industry. They also state that proposals that may have significant adverse impacts on access for fishing activities must demonstrate that they will avoid, minimise, and/or mitigate these impacts.

Marine Plan	Where this is covered in the ES
	<p>Mitigation, embedded, and control and management measures of relevance to commercial fisheries are described in Section 8.8.</p> <p>An assessment of effects to commercial fisheries are discussed in Section 8.9.</p>

Local Planning Policy

- 8.2.9 The Offshore Scheme lies within the jurisdiction of the Marine Management Organisation (MMO), Suffolk County Council, East Suffolk Council, Kent County Council. The local plan policies for Suffolk and Kent do not currently have any policies relevant to commercial fisheries that would inform the assessment in the ES.

Fisheries Management

- 8.2.10 In English waters, out to the 6 NM limit, fisheries are managed by Inshore Fisheries and Conservation Authorities (IFCAs) whilst in waters between 6 NM and 12 NM, and out to the UK's 200 NM Exclusive Economic Zone (EEZ), fisheries management is the responsibility of the MMO.

English Inshore Waters

- 8.2.11 UK Inshore waters are defined as those within 12 NM of the coast. International vessels of Belgium, France, Germany and the Netherlands currently maintain historic fishing rights in specific sections of UK Inshore waters in areas between the 6 and 12 NM limit. Notably, the Offshore Scheme only overlaps with two small areas where Belgian and French vessels have historic rights (see: **Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).
- 8.2.12 The majority of the Offshore Scheme falls within the 6 NM limits of English inshore waters, across two management areas. Most of the Offshore Scheme is within the Kent and Essex IFCA (KEIFCA), which spans from the east end of Rye Bay in Kent to the northern boundary of Essex on the River Stour; the portion of the Offshore Scheme north of Felixstowe is within the Eastern IFCA (EIFCA).
- 8.2.13 IFCAs are either committees or collaborative (joint) committees of the local authorities that fall within a given Inshore Fisheries Conservation district. IFCAs are primarily tasked with the sustainable management of inshore fisheries resources in their district. IFCAs have a number of different specific roles including fisheries management inside of 6 NM, marine conservation and management of protected areas, sustainable management of fisheries and 'good regulation' implemented through a range of measures, including local bylaws.

Local and Regional Restrictions

- 8.2.14 The EIFCA and KEIFCA enforce a number of fishing restrictions within their districts (Kingfisher, 2024), as presented in Table 8.5 and **Figure 6.4.4.8.1 Fisheries Restriction Areas**.

Table 8.5 Local IFCA Byelaws relevant to commercial fisheries

Restriction name	Summary
Area A (KEIFCA)	No fishing by net or any other instrument, except from the beach, or from a vessel smaller than 17 m in length using trawl nets, dredges or other towed gear.
Area C (0-3 NM (KEIFCA))	Only vessels less than 15.24 m in length may trawl for fish.
Bottom Towed Fishing Gear Byelaw ¹ (KEIFCA)	Bottom trawl fishing gear must not be used within the prohibited areas.
Byelaw 12 (EIFCA)	Fishing vessels larger than 15.24 m in length may not use towed nets within 3 NM of the coast.
Byelaw 15 (EIFCA)	Fishing vessels larger than 14 m in length may not fish for molluscs using any type of towed gear.
Byelaw 3 (EIFCA)	No fishing for oysters, mussels, cockles, clams, scallops or queens except by hand or with a hand rake unless a certificate of approval is obtained for the instrument or fishing gear.
Essex Estuary Bottom Trawling Byelaw (KEIFCA)	Bottom trawl fishing gear must not be used within the prohibited areas.
Whelk Fishery Flexible Permit Byelaw (KEIFCA)	No fishing, or taking of sea fisheries resources, within the restricted area.
Whelk Permit Byelaw 2016 (KEIFCA)	Only whelk pots marked with valid permit tags to be used in fishing for whelk.

8.2.15 The KEIFCA also manages the local cockle fishery under two separate orders (**Figure 6.4.4.8.1 Fisheries Restriction Areas**, and **Figure 6.4.4.8.2 Cockle Management Areas**):

- **The Thames Estuary Cockle Fishery Order (TECFO)**
 - Under the TECFO a Total Allowable Catch (TAC) is determined by the KEIFCA, based on the previous year's stock assessment. The fishery typically opens in June and shuts once the TAC has been reached, commonly in September or October. Fishers must hold a licence to access cockle, they are also subject to annual and per-trip landings weight restrictions.
 - The current TECFO runs until 28th September 2024; a new TECFO 2024 will take effect on 30th September 2024, lasting 29 years (KEIFCA, 2024a). The final management plan for TECFO 2024 has yet to be published following the last statutory consultation phase, ending in March 2024 (KEIFCA, 2024b).

¹ The previous Bottom Towed Fishing Gear (Prohibited Areas) Byelaw 2017 has been revoked and replaced with the new Bottom Towed Fishing Gear (Prohibited Areas) Byelaw 2024.

- **The Cockle Fishery Flexible Permit Byelaws (CFFPB)**

- This fishery does not open every year. It is dependent on annual surveys of cockle stocks in the CFFPB area in spring. To be fished, stocks must exceed levels agreed in the byelaw management plan (KEIFCA, 2024c).

UK Offshore Waters

- 8.2.16 UK offshore waters extend out from the 6 NM limit out to 200 NM, encompassing the UK's EEZ. In English offshore waters the MMO is responsible for fisheries management.

UK Fisheries Management Following UK Exit from EU

- 8.2.17 Whilst the UK was part of the European Union (EU), fisheries within UK waters were managed as part of the EU Common Fisheries Policy (CFP) (European Commission, 2013). Following the UK's exit from the EU and the end of the associated transitional arrangement period on 21 January 2021, the UK Single Issuing Authority (UKSIA) (as part of the MMO) now manages fishing vessel licensing for foreign vessel access to UK waters.
- 8.2.18 The UKSIA is responsible for foreign vessels within the British Fishery Limits, which encompass up to 200 miles of territorial sea adjacent to the United Kingdom, the Channel Islands, and the Isle of Man (HM Government, 1976), on behalf of the UK sea fish licensing authorities. However, the UK fisheries authorities (Marine Scotland, the Department of Agriculture, Environment and Rural Affairs in Northern Ireland, the Welsh Government, and the MMO) remain responsible for the administration and management of UK vessel licensing within the UK EEZ (MMO, 2020).

8.3 Scoping Opinion and Consultation

Scoping

- 8.3.1 A Scoping Report (National Grid, 2022) for the Proposed Project was issued to the Planning Inspectorate on 24 October 2022 and a Scoping Opinion (The Planning Inspectorate, 2022) was received from the Secretary of State on 1 December 2022 (**Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation**). Table 8.6 sets out the comments raised in the Scoping Opinion and how these have been addressed in this ES. The Scoping Opinion takes account of responses from prescribed consultees as appropriate. **Application Document 5.1.9 Appendix H Summary 2023 Response** provides responses to the comments made by the prescribed consultees at scoping stage and how each comment has been considered.

Table 8.6 Comments raised in the Scoping Opinion

ID	Inspectorate's comments	Response
5.8.1	<i>"The Scoping Report seeks to scope out this matter [accidental leaks and spills] on the grounds that the measures contained in the CoCP [Code of Construction Practice] would make the risk of accidental spills/leaks</i>	Agreed. Mitigation measures and management plans regarding accidental leaks and spills are detailed in Application Document 7.5.3.1 CEMP Appendix A

ID	Inspectorate's comments	Response
	<i>negligible. The Inspectorate agrees that, provided the measures to mitigate the risks of leaks and spills are clearly described in the ES and secured in the dDCO, this matter can be scoped out of further assessment."</i>	<p>Outline Code of Construction Practice.</p> <p>Effects from leaks and spills from vessels during all phases of development were scoped out of assessment in the Commercial Fisheries Scoping Report and have not been considered further in this ES chapter.</p> <p>A full list of mitigation measures used to avoid likely significant effects has been detailed in Section 8.8.</p>
5.8.2	<p><i>"The Scoping Report identifies the data sources that would be used to inform the baseline and describes the criteria that would be used to determine the sensitivity of receptors and the magnitude of impacts. However, it is not clear from the Scoping Report what methods would be used to carry out the assessment and whether the assessments would be qualitative or quantitative. The methodologies used must be described and their use justified with reference to appropriate guidance and/or agreement with relevant stakeholders. The Applicant is strongly encouraged to ensure that they seek advice from all relevant stakeholders with expertise on this aspect, including the appropriate Inshore Fisheries and Conservation Authorities (IFCAs)."</i></p>	<p>This comment was raised in relation to Commercial Fisheries chapter of the scoping report.</p> <p>The assessment methodology implemented by this chapter of the ES, is detailed in Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology. The guidance considered specifically for commercial fisheries EIA is listed in Section 8.4 of this ES chapter.</p> <p>With regards to Commercial fisheries quantitative data will be used to assess the baseline conditions of the Study Area. Qualitative assessment will then be used to determine the significance of any potential impacts from the Project.</p> <p>Consultation with fisheries stakeholders (including the Eastern, and Kent and Essex IFCAs (see Section 8.3)) will continue throughout the ES process and the intended life of the marine activities associated with the project.</p>

Statutory Consultation

- 8.3.2 Statutory consultation took place between 24 October and 18 December 2023 where the Proposed Project's Preliminary Environmental Impact Report (PEIR) was consulted upon. A further targeted consultation exercise on the main changes to the Proposed Project introduced after the 2023 statutory consultation, was undertaken between 8 July and 11 August 2024. A summary of relevant feedback received during statutory consultation relating to commercial fisheries is provided below. Further details on how consultation responses have informed the assessment can be found in **Application Document 5.1**

Consultation Report and Application Document 5.1.9 Appendix H Summary 2023 Response.

8.3.3 Key feedback received from prescribed consultees included the following themes:

- Highlighting the importance of the early appointment of a Fisheries Liaison Officer (FLO), and early / timely/ more frequent engagement with local fishers.
 - Timely communication through an FLO and Notices to Mariners (NtMs) are core commitments of the project, as detailed in Section 8.8.
 - This has been a key consideration in the appraisal of impacts to commercial fisheries receptors (Section 8.9). The importance of early engagement has also been highlighted in Section 8.12.
- Highlighting the importance of the combined Thames Estuary Cocker Fishery Order 1994 (TECFO) and the Cocker Fishery Flexible Permit Byelaw (CFFPB) areas.
 - This has been discussed in Sections 8.1, 8.4 and 8.7. Additionally, updated TECFO (2024) boundaries have been considered in this assessment (**Figure 6.4.4.8.2 Cocker Management Areas**)
- Highlighting the importance of appropriate mitigation measures to maintain site integrity and reduce potential impacts to fishers within Pegwell Bay.
 - Mitigation measures are detailed in Section 8.8 and fishing activity in and around Pegwell Bay has been considered as part of the appraisal of impact significance (Section 8.9). **Application Document 6.2.4.7 Part 4 Marine Chapter 7 Shipping and Navigation** also assesses impacts to Shipping and Navigation (including fishing vessels) in more detail, providing context regarding accessibility along key marine traffic corridors and access to ports.
- Concern regarding impacts to fisheries target species and their supporting habitats, at landfall, and within Pegwell Bay, and the Goodwin Sands MCZs, which in turn support fisheries outside of these protected areas.
 - The Offshore Scheme no longer overlaps with Goodwin Sands, reducing the potential effects that may occur within the MCZ. Furthermore, the indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species in within, and surrounding, the Offshore Scheme Boundary is a key impact pathway considered as part of the appraisal of significance of effect (Section 8.9). Furthermore, the effects to seabed habitats and benthic species are considered in **Application Document 6.2.4.2 Part 4 Marine Chapter 2 Benthic Ecology**, and the ecological effects on species of commercial importance are also considered in **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology**.
- Concern regarding the potential for permanent restrictions on drift net fishing over the cable route; and
 - The potential for loss and alteration of fishing grounds is considered in Section 8.9. While existing guidance from the Mariner's Handbook (UKHO, 2024), the Maritime and Coastguard Agency (MCA, 2021), the European Subsea Cables Association (ESCA, 2014) advise against fishing in the immediate vicinity of known and charted cables, no legislation or private powers currently exists which prevent access to the area where cables will be buried and / or protected.

- Concern that cable protection comprising rock berms with a 3:1 gradient will pose a risk of snagging to bottom drift nets; and concern over the overall footprint of cable protection causing substantial loss of fishing grounds for drift net fishers.
 - Additional mitigation measures are detailed in Section 8.10 which have been included specifically to reduce the potential impacts to bottom drift net fisheries. These are based on successful examples set by other developments in the region, and on measures implemented during surveys.
- Concern regarding the disturbance of shipwrecks that are believed to provide benefits to target species for commercial fisheries.
 - While shipwrecks can indeed benefit fish and shellfish species, the loss of shipwrecks is not viewed as a potentially significant impact pathway that could have regional or population level effects on species of commercial importance. Sensitive routeing and siting of infrastructure and temporary works will avoid known seabed features of archaeological interest/value such as wrecks and is considered in full within **Application Document 6.2.4.6 Part 4 Marine Chapter 6 Marine Archaeology**.

Further Engagement

- 8.3.4 In order to further inform the commercial fisheries chapter of the ES, beyond the use of publicly available information, fisheries stakeholders of relevance to the Study Area (see Section 8.6) were consulted between February and March 2023 (see **Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).
- 8.3.5 Fishers from the majority of ports adjacent to the cable route were represented, with consultees from the regional IFCAs providing representation encompassing those unable or unwilling to engage at the time; non-UK stakeholders from the EU were also included in consultations. Topics discussed included, but were not limited to, vessel details, fishing effort (including location of grounds relative to the cable route), gear specifications, seasonality, and target species.
- 8.3.6 This consultation is on-going and will continue after submission of the ES. Organisations that have participated in engagement thus far include:

UK Organisations

Local

- Aldeburgh Fishing Association;
- Eastern Inshore Fishery and Conservation Authority;
- Felixstowe Ferry Fishermen's Association;
- Harwich Haven Fishermen's Association;
- Independent fishers, Aldeburgh;
- Independent fishers, Sizewell;
- Kent & Essex Inshore Fishery and Conservation Authority;
- Lowestoft Fishermen's Association;
- Orford and District Fishermen's Association;

- Southwold Fishermen's Association;
- Thanet Fishermen's Association;
- West Mersea Fishermen's Association; and
- Whitstable Fishing Association.

National

- National Federation of Fishermen's Associations (NFFO).

Non-UK Organisations

- Comité Régional des Pêches Maritimes et des Élevages Marins (CRPMEM);
- Rederscentrale (Belgian Producer Organisation); and
- Visned (Dutch Producer Organisation).

8.3.7 For further details on consultation responses see **Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**.

Summary of Scope of Assessment

8.3.8 Following on from the PEIR and stakeholder consultations, impacts that have been assessed within this ES are:

Scoped in during Construction

- Temporary loss and alteration of fishing grounds.
- Temporary displacement of commercial fishing activities.
- Loss or damage to fishing gear.
- Obstruction of navigation routes to commercial fishing grounds; and
- Indirect effects on commercial fisheries because of impacts on the ecology of commercial species.

Scoped in during Operation

- Temporary loss and alteration of fishing grounds.
- Temporary displacement of commercial fishing activities.
- Loss or damage to fishing gear; and
- Indirect effects on commercial fisheries because of impacts on the ecology of commercial species.

Scoped in during Maintenance

- Impacts are anticipated to be analogous to those associated with route preparation and cable installation, but less frequent, of shorter duration, and with a smaller footprint.

Scoped in during Decommissioning

- Anticipated to be analogous to route preparation and cable installation.

Scoped out in all phases

- 8.3.9 Following on from the PEIR and stakeholder consultation, impacts during all phases that have been scoped out from further assessment comprise:
- Changes to marine water quality from accidental leaks and spills from vessels, including loss of fuel oils.

8.4 Approach and Methodology

- 8.4.1 **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** set out the overarching approach that has been used in developing the environmental information. This section describes the technical methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of effects, and sets out the significance criteria that have been used for the commercial fisheries assessment.

Guidance Specific to the Commercial Fisheries Assessment

- 8.4.2 The commercial fisheries assessment has been carried out in accordance with the following good practice guidelines:
- Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (Seafish, 2012);
 - Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) Best Practice Guidance for Offshore Renewable Developments: Recommendations for Fisheries Liaison (FLOWW, 2014);
 - FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds (FLOWW, 2015);
 - Options and Opportunities for Marine Fisheries Mitigation associated with windfarms (Blythe-Skyrme, 2010); and
 - The Mariner's Handbook (NP100) (UKHO, 2024) – Section 9.45 Submarine Cables.

Baseline Data Gathering and Forecasting Methods

- 8.4.3 The commercial fisheries baseline has been informed primarily through the review of publicly available information and consultation with local fishers active in the Study Area (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).

Data Sources

- 8.4.4 The key data sources used to inform this ES chapter are outlined in Table 8.7 as presented in **Application Document 5.1.1 Appendix D EIA Scoping**.

Table 8.7 Key data sources used to inform the ES

Source	Year	Coverage	Description/limitations
UK Landings Data by International Council for Exploration of the Seas (ICES) rectangle ² (MMO, 2023a)	2018 - 2022	Landings statistics data for UK-registered vessels including landing year; landing month; vessel length category; ICES rectangle; vessel/gear type; species; live weight (tonnes) and live weight (value (£)).	<p>Landings data have been analysed by value (£) and presented as an annual average for the period 2018 – 2022. It should be noted that fishing is normally not equally distributed across the whole area of an ICES rectangle and therefore overall activities identified for a given rectangle may not be necessarily representative of the activity that the specific area where the Offshore Scheme is located sustains.</p> <p>In addition, fishing methods are grouped into gear categories which in some cases may include different fisheries. For instance, data is collected under a single category for drift and fixed nets. This gear category does not allow for differentiation between two activities which have differences in target catch and geographical range of deployment. Where appropriate, landings statistics have been analysed by species to address this.</p> <p>It should also be noted that small catches in some instances do not require reporting. Under the Registration of Fish Buyers and Sellers and Designation of Fish Auction Sites Regulations (2005), for catches of less than 30 kg that are sold directly to the public for personal consumption, the buyer does not need to submit a sales note.</p> <p>Notably, there were significant impacts on commercial fishing during 2020, from March onwards, due to the Covid-19 pandemic (MMO, 2022c). Effects to the fishing industry varied depending on sector, but the shellfish industry (which largely supplies the hospitality industry with freshly landed catches) was most severely impacted as demand in the UK and abroad dropped substantially through government lockdowns. Thus, while data from 2020 have been included in this ES, data from that period may not be fully representative of ‘normal’ fishing activity.</p>
UK Fisheries Surveillance Sightings (MMO, 2023b)	2013 - 2022	Surveillance sightings of vessels by gear type (all nationalities)	<p>Only sightings of vessels recorded as “fishing” have been included in the analysis.</p> <p>While the data provides a good indication of key methods and nationalities potentially active in a</p>

² ICES standardise the division of sea areas into ‘rectangles’ for statistical analysis. Each ICES statistical rectangle is ‘30 min latitude by 1 degree longitude’ in size which is approximately 30 nautical miles by 30 nautical miles.

Source	Year	Coverage	Description/limitations
		recorded in UK waters by surveillance patrols.	<p>given area, it should be noted that surveillance patrols are not carried out at constant time intervals and that the level of surveillance effort has been reduced in recent years. Therefore, surveillance data do not give a reliable quantification of overall fishing activity.</p> <p>In some instances, gear categories have been combined to aid visualisation of trends in the data.</p>
Fishing Activity for UK Vessels 15 m and over Data layers (MMO, 2021a)	2016 - 2020	<p>Satellite tracking data (Vessel Monitoring System (VMS) recorded in 0.05° by 0.05° grids from UK vessels in UK and European waters.</p> <p>VMS data is combined with log book data with values assigned to each cell in the grid in terms of effort and value (£).</p>	<p>This dataset is only available for vessels over 15 m in length and therefore is not representative of fishing activity undertaken by smaller local vessels which normally operate in inshore waters. Data have been analysed by value (£) and presented as an annual average for the period 2016 – 2020. Fishing gear categories used in the dataset do not allow to distinguish activity between some fisheries. As for landings data, VMS data is provided by broad gear category regardless of target species.</p>
KEIFCA Cockle Management Areas (Kingfisher, 2024)	2015 – 2020	Kent and Essex IFCA District	<p>Details the fishing gear that can be used, the areas and times which can be fished, and daily catch limit of cockles within the Cockle Fishery Flexible Permit Byelaw and Thames Estuary Cockle Fishery Order.</p> <p>Limited to areas within the district and therefore within 6 NM.</p>
Belgian Landings data by ICES rectangles (ILVO, 2015a)	2010 – 2014 ³	Landings statistics data for Belgian-registered vessels including landing year; landing month; vessel length category; ICES rectangle; vessel/gear type and live weight (value (€)).	<p>Belgian landings by ICES rectangle, based on data submitted by Belgium to Flanders Research Institute for Agricultural, Fisheries and Food Research (ILVO).</p> <p>Data to 2021 have been requested but not received (Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report).</p> <p>The same limitations noted above in relation to UK landings data by ICES rectangle also apply here.</p>
Belgian Fishing Activity for vessels over 15	2010 - 2014 ³	Belgian VMS data combined with logbook data	Includes information for Belgian registered vessels of 15 m in length.

³ These are the most recent available data. Multiple requests have been made to the IVLO for more recent data, with no response (see **Application Document Appendix 4.9.A Commercial Fisheries Technical Report**).

Source	Year	Coverage	Description/limitations
m in length (ILVO, 2015b)		presented at 1/16th of an ICES rectangle scale.	<p>The data included in this report are presented as an annual average of fishing value (€) for the period 2010 - 2014.</p> <p>Recent VMS data for Belgian vessels are not publicly available. The data presented in this PEIR chapter are part of BMM's historic fisheries data sets for Belgian vessels, obtained via data request to ILVO. A data request for recent data was made in February 2022 but has not yet been received (Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report).</p> <p>It must be noted that these data do not distinguish between vessels steaming and those with gear in the water.</p>
French Landings by ICES rectangle (STECF, 2017)	2012 - 2016	Landings statistics data French-registered vessels including landing year; landing quarter; vessel length category; ICES rectangle; vessel/gear type; species; and landings (tonnes).	<p>French landings (tonnes) by ICES rectangle based on data submitted by Belgium and France to the European Commission's (EC) Scientific, Economic and Technical Committee on Fishing (STECF) (These data were included in Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report).</p> <p>The same limitations noted above, in relation to UK landings data by ICES rectangle, also apply here.</p> <p>In some instances, gear categories have been combined to aid visualisation of trends in the data.</p>
Dutch Landings by ICES Rectangle (Application Document Appendix 4.8.A Commercial Fisheries Technical Report)	2017 - 2021	Landings statistics data for Dutch-registered vessels including landing year; vessel length category; ICES rectangle; vessel/gear type; species; and landings (€).	<p>Landings data provided by Wageningen University and Research (WUR) provides the top ten species by ICES rectangle for each year. The top ten species are not necessarily consistent across each year.</p> <p>The data were analysed by selecting the species in the top ten for each year between 2017 and 2021, with all other species included in the "other" category.</p>
Dutch Fishing Activity for vessels over 12m in length (Application Document Appendix 4.8.A Commercial Fisheries	2017 - 2021	Dutch VMS data combined with logbook data presented at 1/16th of an ICES rectangle scale.	<p>Includes information for Dutch registered vessels over 12 m in length.</p> <p>The data included in this report are presented as an annual average of fishing value (€) for the period 2017 to 2021.</p>

Source	Year	Coverage	Description/limitations
Technical Report)			
European Fishing Vessels automatic identification system (AIS) data (EMODnet, 2022)	2018 - 2021	Spatial distribution of average annual fishing effort (mW fishing hours) for all European Fishing Vessels.	<p>EMODnet Human Activities deals with a diverse set of marine and maritime human activities. Thus, the data come from a multitude of public and private data sources at EU, international, national, and local level.</p> <p>The datasets on fishing intensity in the EU waters were created in 2021 by ICES.</p> <p>The available data includes tracks of vessels at all speeds, meaning both steaming and fishing activity will be combined within the same data.</p>

Forecasting methods

- 8.4.5 To forecast the future commercial fisheries value and activities, and any potential impacts upon them, first the likely baseline in the absence of the development is considered. This was based on the most up to date available data on distribution and seasonality of landed target species and fishing methods in the absence of development. This information was supplemented with the results from engagement with local stakeholders with either knowledge of the Study Area, and/or fishers active within the Study Area. Notably, the likely baseline may be influenced by the UK's exit from the EU, and years where Covid-19 restrictions were implemented. Additionally, there is potential for future changes to agreements between the UK and the EU to undermine any forecast this impact assessment is based on (see Section 8.2, and Table 8.7).
- 8.4.6 Impact likelihood and significance were assessed using the latest available data and literature with consideration of published guidance, and the application of professional judgement.

Assessment Criteria

- 8.4.7 **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** sets out the overarching approach to determining the significance of effects within this assessment. The identification and appraisal of effects and mitigation are based on expert judgment and follow relevant available guidance.
- 8.4.8 The potential sensitivity of fishers, magnitude, and potential effects have been appraised using similar terminology outlined in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, tailored with specific reference to aspects of relevance to commercial fishing as outlined below.

Sensitivity of commercial fisheries receptors

- 8.4.9 The assessment of sensitivity will be made with consideration of:
- operational range: extent of the area over which vessels normally operate;
 - operational versatility: ability to deploy different fishing methods/target different species;

- adaptability: ability of vessels to adapt to the potential impact. Degree to which fishing vessels can avoid or adapt to changing circumstances, including their capacity to accommodate change; and
- importance: the economic value of the fishery in the area around the Project.

8.4.10 These considerations will be assessed against five levels of sensitivity criteria (Table 8.8).

Table 8.8 Sensitivity criteria

Value/Sensitivity	General Criteria
Very High	Very high importance; very limited potential for recovery or substitution to alternative fishing grounds, target species, or gear types.
High	High importance, limited potential for recovery or substitution to alternative fishing grounds, target species, or gear types.
Medium	Medium importance, some potential for recovery or substitution to alternative fishing grounds, target species, or gear types.
Low	Low or medium importance, good potential for recovery or substitution to alternative fishing grounds, target species, or gear types.
Negligible	Very low importance, high level of recoverability and / or adaptability to use alternative fishing grounds, target species, or gear types.

Magnitude of commercial fisheries effects

8.4.11 The assessment of magnitude will be made with consideration of:

- area affected: extent of area affected in the context of available grounds and level of fishing activity that the area affected sustains;
- duration and frequency: time and frequency of the effect; and
- liaison and management: range of fisheries liaison and management measures that are implemented as part of the Offshore Scheme.

8.4.12 These considerations will be assessed against five levels of magnitude criteria (Table 8.9).

Table 8.9 Impact magnitude criteria

Magnitude	General criteria
Large	Long-term duration and/or affects an extensive area of fishing grounds with high levels of activity.

Magnitude	General criteria
	<p>Adverse: expected to result in substantial loss of commercially targeted species quality or availability, and/or will result in severe loss of ability to undertake fishing activities.</p> <p>Beneficial: expected to result in large scale or major improvement to resource availability and / or quality.</p>
Medium	<p>Medium-term duration and / or affects a moderate area of fishing grounds with medium / high levels of activity.</p> <p>Adverse: expected to result in moderate loss of target species quality or availability, and / or a moderate loss of ability to undertake fishing activities.</p> <p>Beneficial: expected to result in moderate improvement to resource availability and / or quality.</p>
Small	<p>Short-term duration and / or affects a limited area of fishing grounds with low / medium levels of activity.</p> <p>Adverse: expected to result in minor loss of target species quality or availability, and / or a minor loss of ability to undertake fishing activities.</p> <p>Beneficial: expected to result in minor improvement to resource availability and / or quality.</p>
Negligible	<p>Very short-term duration, and / or affects an area with no fishing grounds or little / no fishing activity.</p> <p>Adverse: expected to result in no measurable / very minor loss of target species quality or availability, and / or no measurable / very minor loss of ability to undertake fishing activities.</p> <p>Beneficial: expected to result in very minor improvement to resource availability and / or quality.</p>

Significance of commercial fisheries effects

- 8.4.13 As set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, once the magnitude of change and sensitivity of the receptor have been established, the significance of an effect can be determined by correlating both together. A clear statement will then be made in the ES as to whether that effect is significant or not significant.
- 8.4.14 The determination of significance considers the general significance descriptions provided in Table 8.10, with professional judgment and knowledge from previous projects also considered. Additionally, a precautionary approach is taken with the worst-case scenario assessed for each impact, in order to account for uncertainty or any lack of baseline survey data in the assessment.

Table 8.10 Generic significance description

Significance	General criteria	Significant effect
Major	<p>A large and detrimental change to a valuable/sensitive receptor; likely exceeding an accepted (often legal) threshold.</p> <p>A large and beneficial change, resulting in improvements to the baseline result in previously poor conditions being replaced by new legal compliance or a major contribution being made to national targets.</p> <p>These effects may represent key factors in the regulator's decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features that are unique and which, if lost, cannot be replaced or relocated.</p>	Yes
Moderate	<p>A medium scale change that, although not beyond an accepted threshold, is still considered to be generally unacceptable, unless balanced out by other significant positive benefits of a project. Likely to be in breach of planning policy, rather than legal statute.</p> <p>These effects, if adverse, are likely to be important at a regional or local scale and on their own could have a material influence on decision making. A positive moderate effect is a medium scale change that is significant in that the baseline conditions are improved to the extent that guideline targets (e.g. UK Biodiversity Action Plan (BAP) targets) are contributed to.</p>	Yes (typically)
Minor	<p>A small change that, whilst adverse, does not exceed legal or planning policy thresholds.</p> <p>A small positive change, but not one that is likely to be a key factor in the overall balance of issues.</p> <p>These effects may be raised as local issues and may be of relevance in the detailed design of a project but are unlikely to be critical in the decision-making process.</p>	No
Negligible	<p>A very small change that is so small and unimportant that it is considered acceptable to disregard.</p> <p>Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.</p>	No

Assumptions and Limitations

8.4.15 In addition to the assumptions and limitations regarding data sources listed in Table 8.7, the following should be noted:

- The current TECFO runs until 28th September 2024, at which point a new TECFO 2024 will take effect. The management plan for TECFO 2024 is currently at the consultation phase and is therefore subject to changes. This assessment is based on the draft version available at the time of writing, with the TECFO 1994 used as the basis of any assumptions where information gaps exist.
- It is assumed that exclusion zones communicated to fishers and maintained by guard vessels around the construction, maintenance, and any decommissioning works will consist of a ~500 m area around the portion of the cable route being laid/maintained/decommissioned. This will be maintained 24 hours a day 7 days a week (as detailed for construction works in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**) and exist on a 'rolling' basis as works progress along the cable route.
- It is also assumed that where anchoring in shallow water is required, exclusion zones may be up to 1000 m – 1500 m when accounting for the area around the installation vessel and anchor lines.

8.5 Basis of Assessment

8.5.1 This section sets out the assumptions that have been made in respect of design flexibility maintained within the Proposed Project and the consideration that has been given to alternative scenarios and the sensitivity of the assessment to changes in the construction commencement year.

8.5.2 Details of the available flexibility and assessment scenarios are presented in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**, and **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**.

Flexibility Assumptions

8.5.3 The assessments have been undertaken based on the description of the Proposed Project provided in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. To account for the flexibility allowed in the Proposed Project, consideration has been given to the potential for effects to differ in significance should Project elements be moved within the Limits of Deviation (LoD) or Order limits.

8.5.4 The assumptions made regarding the use of flexibility for the main assessment, and any alternatives assumptions, are set out in Table 8.11 below.

Table 8.11 Flexibility assumptions

Element of flexibility	How it has been considered within the assessment?
Lateral LoD marine HVDC cable	The cable configuration for the Offshore Scheme is assumed to be one bundled HVDC and one fibre optic cable (two cables) in one trench This bundled scenario maybe placed anywhere within the Offshore Scheme Boundary.

Sensitivity Test

- 8.5.5 It is likely that under the terms of the draft DCO, construction could commence in any year up to five years from the granting of the DCO, which is assumed to be 2026. Consideration has been given to whether the effects reported would be any different if the work were to commence in any year up to year five. Where there is a difference, this is reported in Section 8.9.

8.6 Study Area

- 8.6.1 The fisheries data used in this ES chapter are primarily collected by national fisheries agencies. These data are organised spatially using the International Council for the Exploration of the Sea's (ICES) series of statistical rectangles. Therefore, the Study Area for commercial fisheries has been determined by the ICES rectangles which overlap with the Project.
- 8.6.2 The Offshore Scheme is located within the southern North Sea in ICES division IVc, within the 12 NM UK territorial limit, comprising the following rectangles (**Figure 6.4.4.8.3 Commercial Fisheries Study Area**):
- ICES rectangle 31F1 – encompasses the southern section of the Offshore Scheme (34%), including the southern landfall at Pegwell Bay.
 - ICES rectangle 32F1 – encompasses the middle portion of the Offshore Scheme (50%); and
 - ICES rectangle 33F1 – encompasses the northern section of the Offshore Scheme (16%) including the northern landfall between Thorpeness and Aldeburgh.
- 8.6.3 The Study Area has been used to identify fisheries activity relevant to the Offshore Scheme. To consider the context of these areas in relation to regional fishing practices, data for a wider area may also be considered as part of the ES, where necessary; for example, the neighbouring ICES rectangles directly adjacent to the Study Area or relevant bodies of water such as the Southern North Sea, or the English Channel as out lined in **Application Document 5.1.1 Appendix D EIA Scoping**.

8.7 Baseline Conditions

- 8.7.1 This section covers the commercial fisheries baseline for the Offshore Scheme. For the purposes of this ES chapter, some baseline information is included to provide context and may not be directly addressed in the assessment of impacts.

Overview of Principal Fishing Activity

- 8.7.2 Surveillance sightings data recorded between 2013 and 2022 (MMO, 2023b) provide an indication of the principal national fleets and fishing methods active in the Study Area. A detailed breakdown of this data is provided in Table 8.12. These data suggest the most southern ICES rectangle, 31F1, has relatively high fishing activity within the Study Area (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**), with 33F1 having the least sightings.
- 8.7.3 Vessel tracking AIS data for fishing vessels of all nationalities between 2018 and 2021⁴ (EMODnet, 2022) (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**) reflects the surveillance sightings data to some extent, with the majority of tracks occurring within ICES rectangle 31F1, and track density reducing northwards through ICES rectangles 32F1 and 33F1. However, AIS data capture both steaming and fishing activity and may not accurately indicate fishing effort.
- 8.7.4 The surveillance sightings data (MMO, 2023b) suggest varying levels of presence of UK and non-UK vessels using different gear types in the study area (Table 8.12). The vast majority of observations were of UK vessels (80.07%). These were concentrated in ICES rectangles 31F1 and 32F1, in the central and southern sections of the Offshore Scheme, within the 6 NM limit.
- 8.7.5 Non-UK vessels primarily comprised Belgian vessels (8.42% of total observations) concentrated in ICES rectangle 32F1 and predominantly within the 12 NM limit, and French vessels (5.71%) concentrated in the eastern part of ICES rectangle 31F1. Their presence is associated with their historic fishing rights in UK waters between 6 NM and 12 NM limits. Dutch vessels (5.35%) were concentrated in the eastern part of ICES rectangle 32F1. Their activity does not overlap with the Offshore Scheme and therefore Dutch vessels will not be considered further.
- 8.7.6 German, Danish, Irish and Norwegian vessels have also been recorded in the waters surrounding the Project, but they have no rights to fish in UK territorial waters (i.e. within 12 NM) in areas in the proximity of the Proposed Project. Therefore, these vessels will also not be considered further.
- 8.7.7 Surveillance sightings for all vessels, UK and international boats, show that throughout the Study Area most vessels were trawlers (40.45%, comprising demersal stern, beam, and all other trawlers), and potters/whelkers (20.98%). The remaining gear types comprised gill and drift nets (14.59%), dredgers (9.48%), rod and line (8.83%), and seiners (2.04%).

⁴ At the time of writing AIS data for 2022 were not available.

Table 8.12 Surveillance sightings by nationality (2013 – 2022) (MMO, 2023b)

Nationality	Vessel type	Total number of sightings within the Study Area across 2013-2022 period	% of total sightings within the Study Area
UK	Potter/whelker	360	20.92 %
	Demersal stern trawler	204	11.85 %
	Gill netter	197	11.45 %
	Rod and line	152	8.83 %
	Trawler (all)	146	8.48 %
	Other dredges (including mussel)	92	5.35 %
	Suction dredger	70	4.07 %
	Unknown	56	3.25 %
	Drift netter	54	3.14 %
	Beam trawler	30	1.74 %
	Bottom seiner (anchor/Danish/fly/Scots)	17	0.99 %
	Total UK	1378	80.07 %
Belgium	Beam trawler	94	5.46 %
	Trawler (all)	38	2.21 %
	Stern trawler (pelagic/demersal)	9	0.52 %
	Bottom seiner (anchor/Danish/fly/Scots)	3	0.17 %
	Potter/whelker	1	0.06 %
	Total Belgium	145	8.42 %
France	Trawler (all)	74	4.30 %
	Stern trawler (pelagic/demersal)	13	0.76 %
	Unknown	7	0.41 %
	Beam trawler	2	0.12 %
	Suction dredger	1	0.06 %
	Purse seiner	1	0.06 %
	Total France	98	5.71 %
	Beam trawler	73	4.25 %

Nationality	Vessel type	Total number of sightings within the Study Area across 2013-2022 period	% of total sightings within the Study Area
Other Nationalities (Dutch, German, Danish, Irish, Norwegian)	Bottom seiner (anchor/Danish/fly/Scots)	12	0.82 %
	Trawler (all)	8	0.47 %
	Stern trawler (pelagic/demersal)	5	0.29 %
	Total Other	100	5.83 %
Total		1721	

UK Fisheries

- 8.7.8 UK vessels account for the largest share of fishers utilising the Study Area, and are therefore, the most likely to be impacted by the Project.

Fisher responses to engagement

- 8.7.9 Engagement with local fishers indicated that their fishing grounds are located within the 12 NM limit, and their effort is mainly focused within the 6 NM limit (details of engagement and responses can be found in **Application Document 6.3.4.8.A Appendix 4.9.A Commercial Fisheries Technical Report**).
- 8.7.10 Fishers also highlighted that many vessels are now multi-purpose; trawlers are switching gear types seasonally; some to static methods. Additionally, in response to rising fuel costs many vessels are reducing their numbers of fishing trips or fishing more locally.
- 8.7.11 In terms of spatial distribution, consultees from trawling, potting, and static netting vessels identified fishing grounds in the northern half of 32F1 and southern two thirds of ICES rectangle 33F1, which overlap with the Offshore Scheme. Fishing grounds for static nets were also identified in 31F1, partially overlapping with the southern portion of the Offshore Scheme near the landfall. Consultees from drift netting vessels also identified an overlap between the area covered by their nets while soaking and a portion of the Offshore Scheme in ICES rectangle 31F1⁵ (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).

Landings data

- 8.7.12 The pattern of landings values for the ICES rectangles (MMO, 2023a) comprising the Study Area generally complement the surveillance data, with the highest average landings by UK vessels recorded in ICES rectangle 31F1 (~£6,783,900), close to the Kent coast.

⁵ Notably, due to drift netting being a static gear which moves while deployed, this does not indicate the extent of fishing grounds for this gear type, but the active areas which overlap the Offshore Scheme.

- 8.7.13 Landings data analysis (Plate 8.1, Plate 8.2, and **Figure 6.4.4.8.5 Landings (£) by Fishing Method and Species (Annual Average 2018 - 2022)** (showing annual average value of landings by method and species for each ICES rectangle in the Study Area)) indicates that dredging for cockles accounts for the majority (36%) of the overall value of landings for the Study Area (ICES rectangles 31F1, 32F1, and 33F1 combined), representing an average landing value of ~£3,733,900 per year (MMO, 2023a). This is followed by pots and traps targeting whelk (~£1,593,000 (16%)) and edible crab and lobster (~£365,439 (4%) combined); and drift and fixed (gill) nets mainly targeting sole and bass (~£1,215,900 (12%) combined). Demersal seines and trawls were also prevalent, though these gears predominantly target horse mackerel and squid in offshore areas not overlapping the Offshore Scheme and land their catch primarily at EU ports (78% of demersal seine and trawl landings) (MMO, 2023a).
- 8.7.14 The average yearly landings value of ICES rectangle 32F1 was approximately £2,787,700 (MMO, 2023a). More than half of this value comes from dredges targeting cockles. Pots and traps targeting whelks, demersal trawls mainly targeting sole, and drift nets targeting bass and mackerel are also key contributors to the overall landings value. Notably, most landings were made from vessels between 8 m and 15 m in length (88%), with vessels 8 m and under (8%) accounting for the remaining value. Landings from vessels over 15 m were insubstantial in comparison (4%).
- 8.7.15 ICES rectangle 33F1 has an average yearly landings value of approximately £710,000 (MMO, 2023a). Pots and traps targeting whelk dominate the overall landings value for 33F1, with drift and fixed nets, mainly targeting bass and sole, representing the other key fishery. The vast majority of landings from this rectangle are from vessels under 10 m in length (84%), with the remaining small proportion of landings made by vessels between 10 m and 15 m (15%).

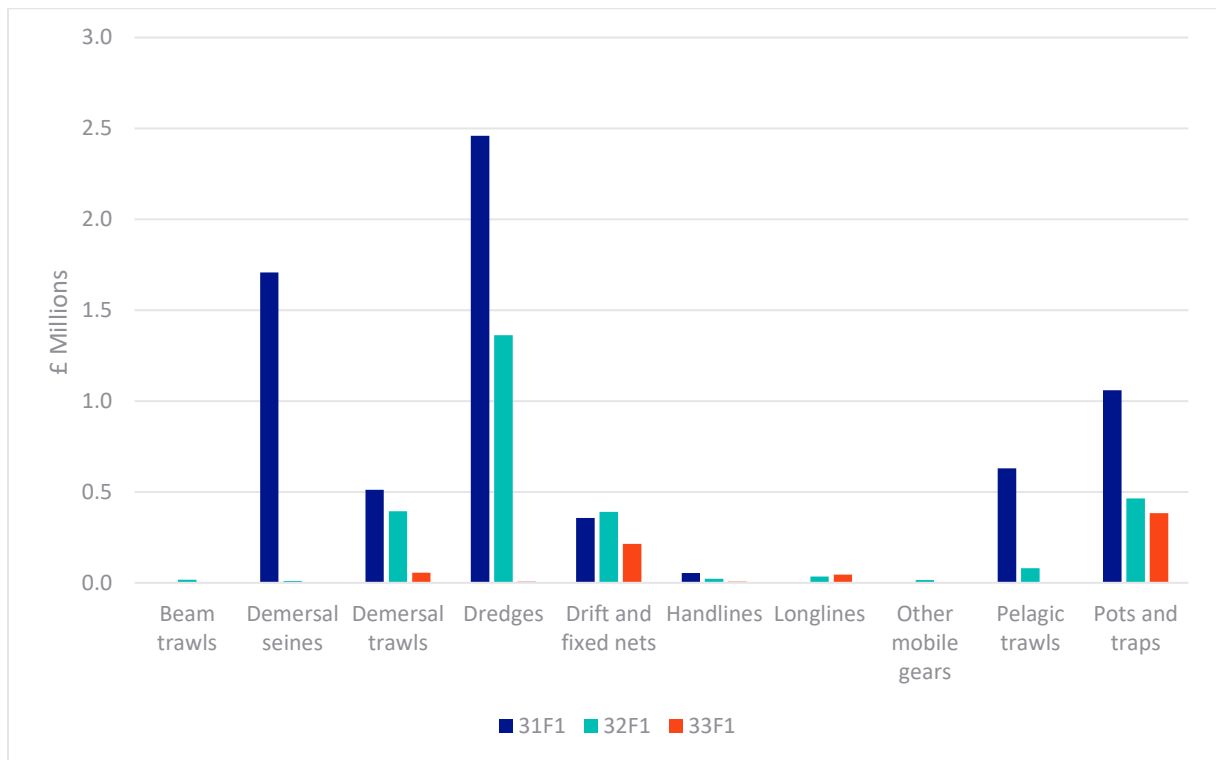


Plate 8.1 Average Value of Gear Type by ICES Rectangle - UK Vessels (2018 – 2022) (MMO, 2023a)

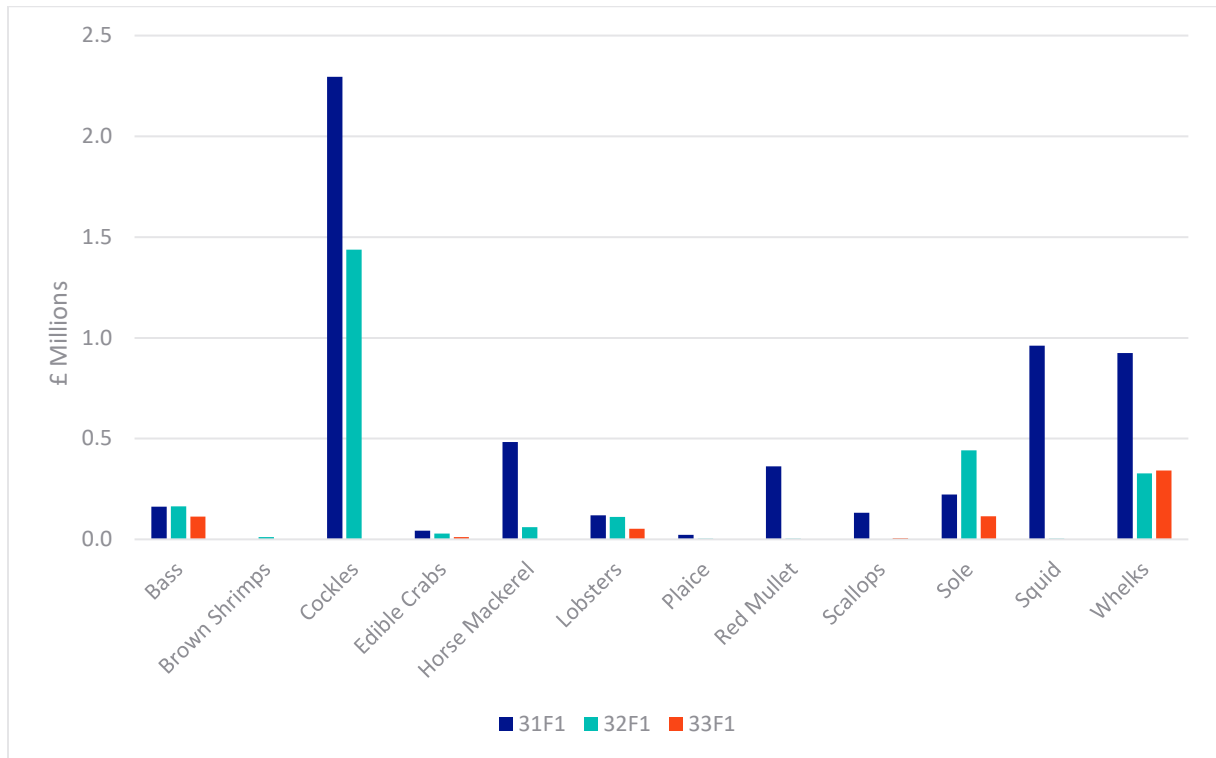


Plate 8.2 Average Value of Species Type by ICES Rectangle (2018 – 2022) (MMO, 2023a)

8.7.16 Landings data for the UK (MMO, 2023a) show that the Study Area represents a valuable source of landings for local ports. As detailed in Table 8.13 at the top ten UK ports for average annual landings from ICES rectangles 31F1, 32F1, and 33F1, these rectangles account for between 5% and 90% of those ports total annual value.

Table 8.13 Top ten UK ports by average annual landings from the Study Area (2018 – 2022) (MMO, 2023a)

Ports with landed catches from the Study Area	Average Annual Landings from the Study Area	% of Annual Value from the Study Area	Total Average Annual Port Value	% Total Annual Port Value that the Study Area Represents
Whitstable	£2,798,227.67	29.95%	£3,109,380.65	89.99%
Queenborough	£696,633.69	7.46%	£1,044,467.90	66.70%
Ramsgate	£625,386.49	6.70%	£752,668.94	83.09%
Leigh-On-Sea	£543,955.20	5.82%	£3,584,381.09	15.16%
Folkestone	£503,788.74	5.39%	£563,528.74	89.43%
Lowestoft	£471,899.04	5.05%	£1,128,876.44	41.80%
Southwold	£217,084.23	2.32%	£299,137.88	72.57%

Ports with landed catches from the Study Area	Average Annual Landings from the Study Area	% of Annual Value from the Study Area	Total Average Annual Port Value	% Total Annual Port Value that the Study Area Represents
Harwich	£209,790.55	2.25%	£234,854.86	89.33%
West Mersea	£207,058.71	2.22%	£270,342.43	76.59%
Kings Lynn	£107,559.44	1.15%	£2,066,064.30	5.21%

Key Fishing Gears and Operating Patterns

- 8.7.17 Consultations were held with local fishers from coastal communities active within the Study Area. Fishers stated that they mainly accessed fishing grounds within the 12 NM limit, predominantly within the 6 NM limit. It was also communicated that with fuel prices increasing many vessels now switch between multiple gear types. Commonly, trawlers are switching to static gears, such as pots or nets, and are active more locally than before, reducing travel times and numbers of trips. Descriptions of the key gear types active within the Study Area are presented below.

Dredging

- 8.7.18 Dredging for cockles accounts for approximately 36% of the overall average yearly landings value for the Study Area (MMO, 2023a). Landings are almost exclusively from within ICES rectangles 31F1 and 32F1, with sightings most reported in the mouth of the River Thames, to the east, outside of ICES 31F1 and 32F1; toward the northeastern boundary of 31F1; and toward the eastern edge of 32F1. Virtually all cockle dredgers in this region are vessels between 10-15 m in length. These vessels predominantly access the Thames Estuary Cockle Fishery using hydraulic suction dredgers. This gear is towed at 2 – 6 knots: penetrating the seabed by ~5 cm and using a water jet to disturb the sediment (Haupt, 2022). The catch is then pumped from the dredge basket underwater while under tow, and up through a sorting riddle on the deck of the vessel.
- 8.7.19 There is clear seasonality in cockle landings (MMO, 2023a), linked with the opening and closing of the cockle fisheries, under TECFO. As such, landings peak between June and September, before decreasing in winter, and negligible or no landings between December and May (Plate 8.3).

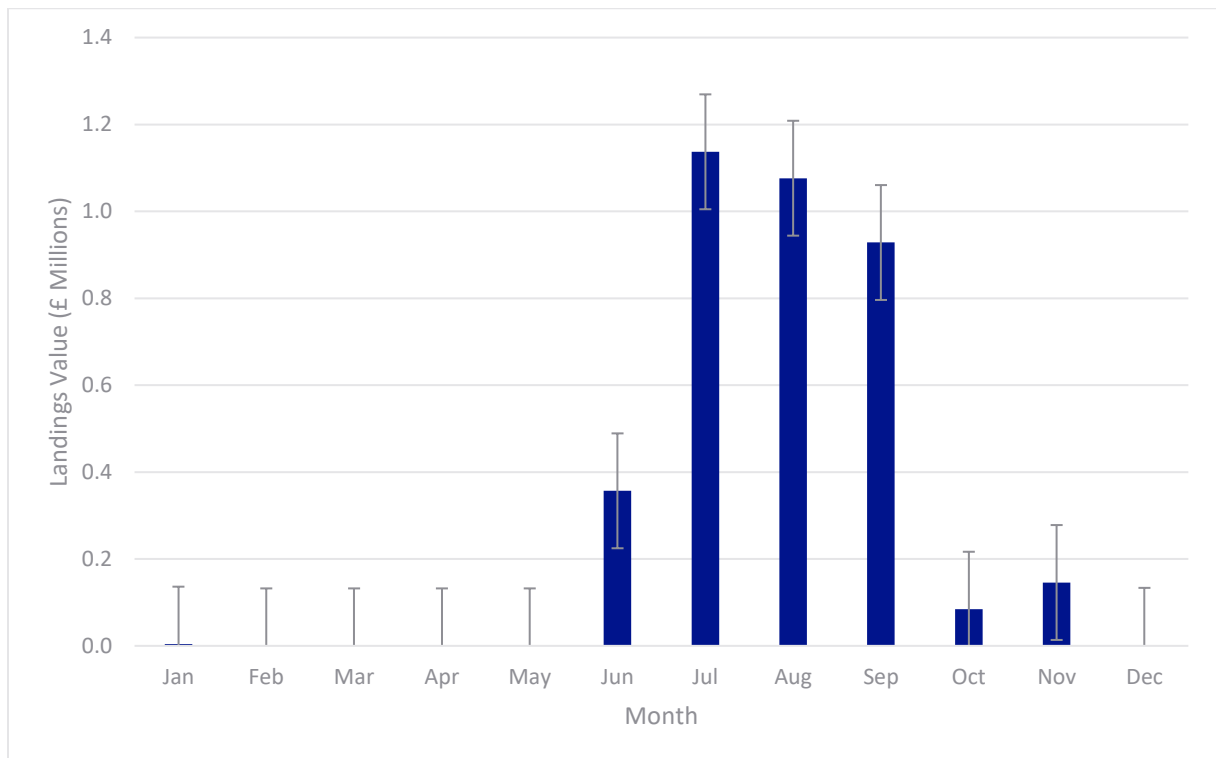


Plate 8.3 Average (with standard error) monthly cockle landings from the Study Area (2018 - 2022)

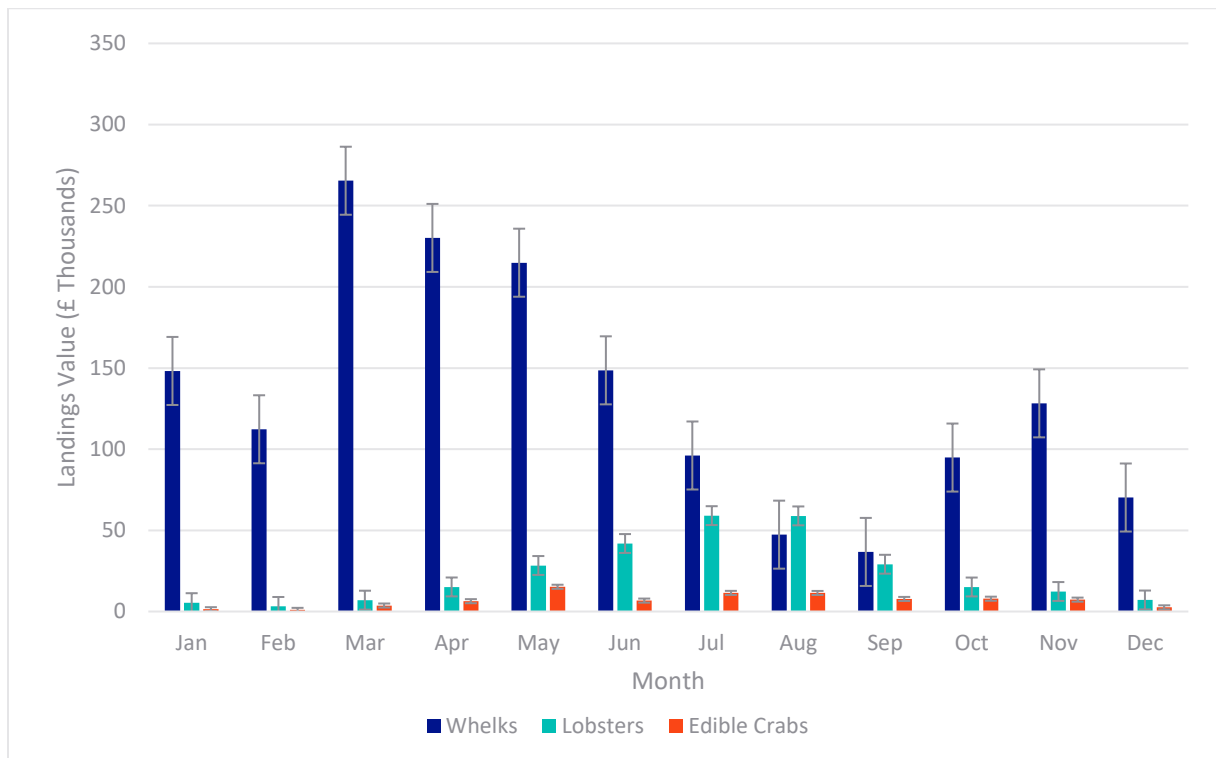
8.7.20 With regard to the Offshore Scheme, surveillance sightings (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**) suggest that dredgers focus their efforts within the Thames Estuary, with little to no overlap with the proposed cable route. This aligns with the proposed cable route being located outside of the TECFO areas.

Pots and Traps

8.7.21 Pots and traps account for approximately 19% (~£1,906,700) of the average yearly landings value for the Study Area. By far the main species targeted by pots and traps in the Study Area is whelk, which represent approximately 16% (~£1,592,950) of the average yearly landings value in the Study Area, across gear types. Lobster and edible crab are also targeted with pots and traps in the Study Area, but account for approximately 4% of overall average yearly landings value for the Study Area.

8.7.22 Whelks are commonly targeted using vessels that are under 15 m in length, with landings value split between vessels under 10 m (80%) and 10-15 m (20%). Distinctively, whelk pots are modified plastic drums, a custom pot compared to traditional pots used to target lobster and crab. These pots are rigged in strings of up to 80 pots, between 100 m and 500 m in length, and left to soak for 12 to 48 hours.

8.7.23 Whelks are caught year-round (MMO, 2023a), peaking between March and May (Plate 8.4). Edible crab and lobster are also targeted year-round, with peaks during the summer months.



8.7.24

Plate 8.4 Average (with standard error) monthly landings of species targeted by pots and traps from the Study Area (2018 - 2022)

8.7.25 With regard to the Offshore Scheme, surveillance sightings (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**) suggest that potting is focused along the coastline, predominantly in ICES rectangle 31F1. Key areas appear to be along the north Kent coastline (southern Thames Estuary), and eastward of St Margaret's at Cliffe on the south Kent coastline. There is some overlap of potting activity in the southern portion of the Offshore Scheme, eastward of Margate, and to a lesser extent around the landfall in Pegwell Bay.

Demersal Trawls and Seines

8.7.26 Combined, demersal trawls and seines account for approximately 26% of the overall average yearly landings value for the Study Area between 2018 and 2022 (MMO, 2023a). The primary demersal target species landed from the Study Area were squid, followed by horse mackerel, and red mullet.

8.7.27 Landings from demersal trawls and seine nets were predominantly made in foreign ports (78%) (MMO, 2023a) by vessels over 24 m in length. Between 2018 and 2022 the top three ports in the Study Area (measured by total landed value) for these gears were: Vlissingen, The Netherlands (~48%); Boulogne, France (~18%); and Oostende, Belgium (~8%). All UK ports combined accounted for the remaining 22%, with landings records for demersal trawls and seines at individual ports comparatively low (five ports (Folkstone, Lowestoft, Harwich, West Mersea, and Wivenhoe): 2% - 3%; three ports (Colchester, Kings Lynn, and Queensborough): 1% - <2%).

For squid the highest value landings were made in November and December, with the highest landings of horse mackerel also in the latter months, between September and November. Landings for both species were negligible between June and August, possibly

indicating a switch in gear types deployed during these months. Landings of red mullet follow a similar pattern, with the majority of landings made between September and December. However, landings have a secondary peak in May; and are at their lowest between January and March, then between Jun and August (Plate 8.5).

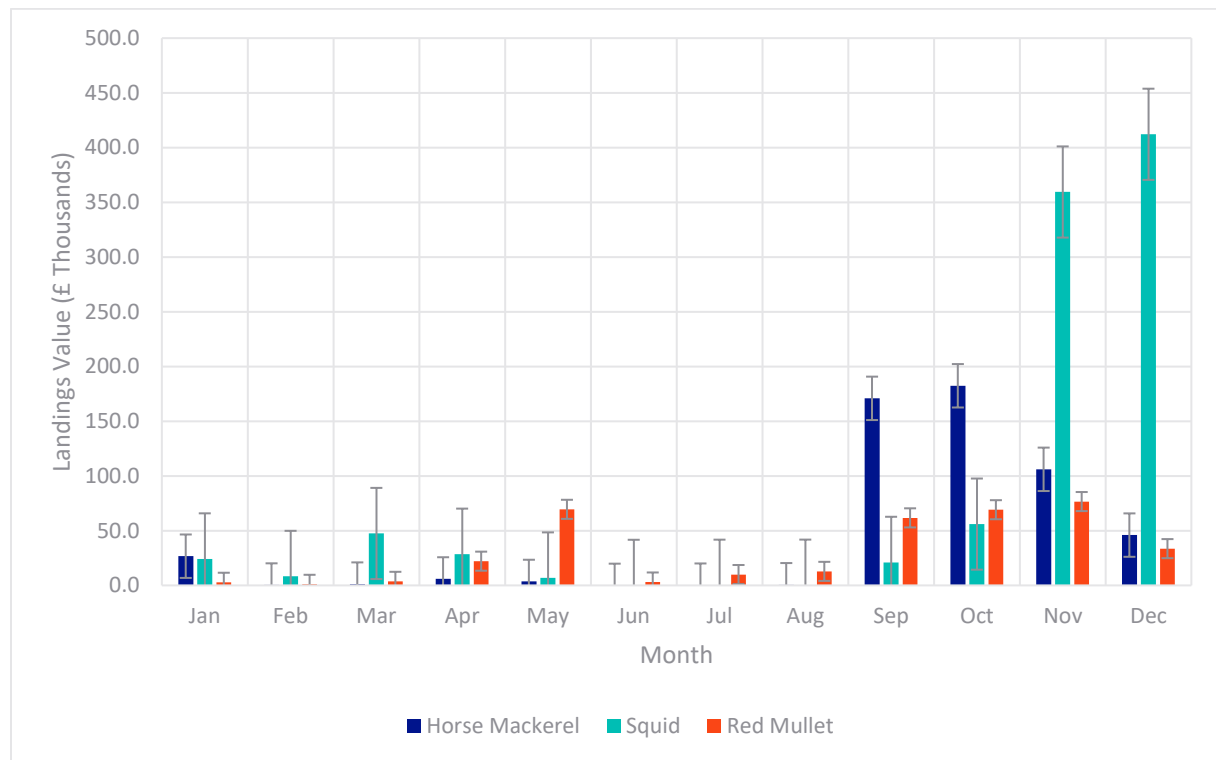


Plate 8.5 Average Monthly Landings (with standard error bars) of horse mackerel from the Study Area (2018 - 2022)

8.7.28 With regard to the Offshore Scheme, surveillance sightings (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**) suggest there is potential for some trawling activity to take place on the proposed cable route. Consultation with local fishers also indicates that trawler activity overlaps with the northern half of the cable route (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report – Figure 8.24**).

Netting

8.7.29 Landings from netting account for approximately 9% (~£960,600) of the overall average yearly landings value for the Study Area. Both fixed and drift nets are deployed predominantly in coastal areas around the cable route. Sole and bass are the most valuable species landed via nets.

8.7.30 Landings data do not differentiate between fixed and drift net types. However, both surveillance sightings data and consultations with fishers suggest gillnets and trammel nets (fixed nets) are likely the most used net within the Study Area (MMO, 2023b) (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). Strings of gillnets are usually joined together in a series of four to six 500 m monofilament nets; these can either be fixed or drifting. Drift nets are also in use but appear to be less popular across the Study Area as a whole (MMO, 2023a) (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). Fixed

nets are usually set during neap tides, whereas drift nets are deployed throughout the tidal cycle and left for three to six hours to drift with the tidal current; both methods are commonly deployed from vessels less than 10 m in length.

- 8.7.31 The main target species of netters, sole and bass, are landed year-round, with sole being the most valuable in the Study Area, (Plate 8.6). The highest value of sole landings is recorded between July and September. Bass seasonality corresponds with the bass season opening on the 1st of April, resulting in low landings of bass between December and March, then peaking in April and May.

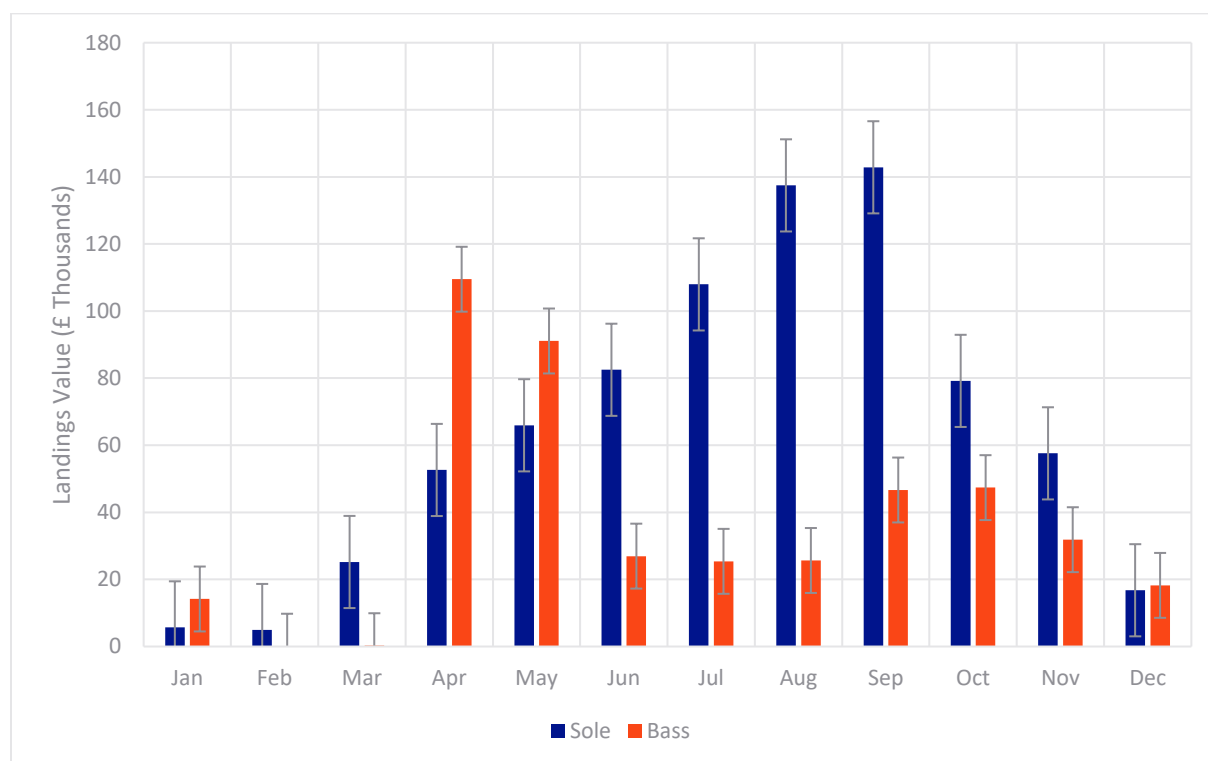


Plate 8.6 Average (with standard error) monthly landings of species targeted by fixed and drift nets from the Study Area

- 8.7.32 With regard to the Offshore Scheme, the spatial distribution of surveillance sightings (Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)) suggest that most fixed and drift nets are deployed in ICES rectangle 31F1, with observations of netters evenly but relatively sparsely spread throughout 32F1 and 33F1. Records of netters are in close proximity of the proposed cable route in the north of 32F1, but the greatest overlap is in the southern portion of the Offshore Scheme, eastward of Margate. However, for drift netters this may only represent deployment and retrieval locations. In light of this, consultations with bottom drift net fishers identified overlap between the areas covered by nets while soaking, and the southern half of the Offshore Scheme in ICES rectangle 32F1 and approximately 10 km of the cable route offshore from Ramsgate (Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report).

Non-UK Fisheries

- 8.7.33 Though sightings data (MMO, 2022c) show UK vessels to represent the vast majority of fishing vessels in the Study Area, surveillance (Figure 6.4.4.8.4 Surveillance Sightings

Data (2013 – 2022)) and landings data (ILVO, 2015a; ILVO, 2015b; STECF, 2017) also suggest that offshore areas are of importance to Belgian vessels, and to a lesser extent French vessels. These comprise predominantly demersal and beam trawlers, mostly of Belgian origin (Table 8.12).

Key Fishing Gears and Operating Patterns

- 8.7.34 In addition to surveillance data (MMO, 2023b) VMS data available for Belgian vessels (ILVO, 2015b); **Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**) provide further insight into the distribution of fishing vessels using demersal and beam trawls. However, it must be noted that only larger vessels (over 15 m in length (dependent on source)) are included, and this does not distinguish between vessels steaming and those with gear in the water. VMS data were not available for French vessels at the time of writing.

Beam Trawlers

- 8.7.35 Annual average landings data indicate that beam trawling is a valuable fishing method for Belgian trawlers throughout the North Sea and English Channel (ILVO, 2015a). VMS data for Belgian beam trawlers (ILVO, 2015b) show widespread distribution of vessels including some relatively high activity to the east of the Study Area, overlapping with the Offshore Scheme; mainly ICES rectangle 31F1 and 32F1 (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). Fisher responses to engagement suggest that ~10 Belgian vessels are highly active within the Study Area, between 6 NM and 12 NM for the first six months of the year. However, the areas overlapping the Offshore Scheme are not the most valuable portions of beam trawler distribution (ILVO, 2015b). Surveillance sightings data for trawlers (all) (MMO, 2023b), indicate that the highest densities of sightings are outside of the Study Area in the English Channel and fringing the Belgian coast, with some moderate activity in the north eastern corner of ICES rectangle 31F1 and south eastern corner of 32F1 (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**).

Demersal trawls and seines

- 8.7.36 VMS and landings data for Belgian vessels (ILVO, 2015a; ILVO, 2015b) indicate that otter trawls are active within the Study Area, predominantly in ICES rectangle 32F1, overlapping with the Offshore Scheme (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). While targeting similar species to beam trawling, the average value of demersal trawls is overshadowed by that of beam trawling, making up less than half of the average landings value for ICES 32F1, and an insignificant amount of the average landings value for ICES 31F1 and 33F1. On the other hand, negligible effort and landings appear to be made by seines within the Study Area.
- 8.7.37 Landings data for French vessels (STECF, 2017) indicate bottom trawl and seine activity in ICES rectangle 31F1. However, the value, of these activities is highest outside of the Study Area, in the English Channel (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). Surveillance sightings suggest that French Vessels are mainly active to the south and east of ICES 31F1, and do not overlap with the Offshore Scheme (MMO, 2023b).

Key Receptors

- 8.7.38 In light of the above baseline data, potential impacts to commercial fisheries will be assessed for the following receptor groups which have been identified as important for the project Study Area:
- Mobile gear fisheries – comprising dredgers, beam trawlers, and demersal trawls and seines.
 - Static gear fisheries – comprising pots and traps; and fixed and drift nets⁶

Future Baseline

- 8.7.39 The baseline set out above details the principal fishing fleet and activity at the time of writing. To determine the future baseline in the absence of development, distribution and seasonality of landed target species and fishing method would ordinarily be used, along with assessment of general market demand and value; ultimately with the assumption that trends recorded in previous years would remain consistent.
- 8.7.40 However, with the latest published landings data only covering up to 2022; the UK breaking away from the EU Common Fisheries Policy in 2023; and uncertainty surrounding the exact details and nuances of the future UK-EU relationship, particularly in light of the recent change of UK Government, it is difficult to make robust predictions regarding the long-term value of these fisheries. The transitional Trade and Cooperation Agreement between the UK and EU expires in 2026, and the future fishing quota split between the UK and EU, despite historic fishing rights for Belgian and French vessels, will be negotiated annually.
- 8.7.41 In relation to EU access to UK territorial waters, provision has been made for EU vessels with a track record of fishing between 6NM 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.
- 8.7.42 In terms of national fishing legislation and policy relevant to the Study Area, the Thames Estuary Cackle Fishery Order 1994 (TECFO) will end in September 2024. This provided the opportunity for the current management of the fishery and its legislation to be reviewed. At the time of writing, statutory consultations have been completed in May, and a members vote on the new TECFO 2024 had taken place in July (KEIFCA, 2024b), with results unpublished. As such the TECFO 2024 (KEIFCA, 2024a), and its associated management plan are in draft status (KEIFCA, 2024c). Under the TECFO 2024 regulations cockle fisheries are likely to become increasingly important, as fishing grounds are likely to become increasingly available to smaller fishing vessels (KEIFCA 2023, personal communication, 28 March (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**)).

8.8 Proposed Project Design and Embedded Mitigation

- 8.8.1 The Proposed Project has been designed, as far as possible, following the mitigation hierarchy in order to, in the first instance, avoid or minimise commercial fisheries impacts

⁶ Drift nets are considered a static gear in line with MMO data categories, however, once deployed nets move with currents and tides.

and effects through the process of design development, and by embedding measures into the design of the Proposed Project.

- 8.8.2 As set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, mitigation measures typically fall into one of the three categories: embedded measures; control and management measures; and mitigation measures.

Embedded Measures

- 8.8.3 Embedded measures are integral to reducing the effects of the Proposed Project to commercial fisheries. Measures that have been incorporated are:
- Sensitive routing and siting of infrastructure and temporary works;
 - Minimising the amount of time the cable stays unprotected and exposed to potential interactions with anchoring vessels or fishing gear (anchor drag or gear snagging), during construction; and
 - Commitments made within **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**.

Control and Management Measures

- 8.8.4 The following measures have been included within **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice** relevant to the control and management of impacts that could affect commercial fisheries receptors:
- CF01 - A Fisheries Liaison Officer (FLO) and fisheries working group(s) will be maintained throughout installation to ensure project information is effectively disseminated to ensure a dialogue is maintained with the commercial fishing industry and access to home ports remains during the main fishing season.
 - CF02 - Timings of any temporary areas of exclusion from fishing grounds will be clearly communicated via a NtM.
 - CF03 - Berms will be installed where cable protection is necessary. These will be designed with a 1:3 profile and flat crests, intended to prevent the risk of towed fishing gear snagging.
 - CF04 - A procedure for the claim of loss of/or damage to fishing gear will be developed.
 - GM02 - As-built locations of cable and external protection will be supplied to UKHO (Admiralty), The Crown Estate and Kingfisher (KIS-ORCA).
 - GM03 - An offshore Construction Environmental Management Plan (CEMP) including an Emergency Spill Response Plan and Waste Management Plan, Marine Pollution Contingency Plan (MPCP), Shipboard Oil Pollution Emergency Plan (SOPEP) and a dropped objects procedure will be produced prior to installation.
 - LVS02 - All project vessels must comply with the International Regulations for Preventing Collisions at Sea (1972) (IMO, 1972), regulations relating to International Convention for the Prevention of Pollution from Ships (the MARPOL Convention 73/78) (IMO, 1983) with the aim of preventing and minimising pollution from ships and the International Convention for the Safety of Life at Sea (IMO, 1974).

- MPE02 - The minimum depth of lowering (DOL) to the top of the cable is 0.5 m (in areas of bedrock), with a target DOL for the Proposed Project approximately 1 m to 2.5 m, to be achieved where possible dependant on the seabed geology.
- MPE03 - Cable protection features (e.g. rock placement, mattresses and grout bags) will be installed only where considered necessary for the safe operation of the Project. This includes the repair of cables due to accidental damage.
- SN01 - A risk based burial approach will be used where cables will be buried to a minimum DOL to the top of the cable of 0.5 m (in areas of bedrock), with a target DOL for the Proposed Project of approximately 1 m to 2.5 m, assessing cable protection risk factors such as sediment type, shallow geology, sediment mobility, fishing activity, shipping movements and anchor deployment along the route.
- SN02 - Relevant information will be communicated to other sea users via Notices to Mariners (NtM), Radio Navigation Warnings Navigational Telex (NAVTEX) and/or broadcast warnings.
- SN03 - All Project vessels will display appropriate marks and lights and will always broadcast their status on AIS.
- SN04 - Temporary aids to navigation will be used as required to guide vessels around areas of installation activity.
- SN05 - Guard vessel(s), using RADAR with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions, will be employed to work alongside the installation vessel(s) during cable installation works.
- OSU02 - Timely and efficient communication will be given to sea users in the area via Notices to Mariners, Kingfisher Bulletins, Navigational Telex (NAVTEX) and Navigational Areas (NAVAREA) warnings.

8.9 Assessment of Impacts and Likely Significant Effects

- 8.9.1 The assessment of the effects of the Offshore Scheme on commercial fisheries receptors described in this section considers the embedded, control and management measures described in Section 8.8.
- 8.9.2 For the sensitivity test outlined in Section 8.4, effects reported would not be any different if the works were to commence in any year up to year five.

Table 8.14 Summary of impact pathways and maximum design scenario

Potential Impact	Maximum Design Scenario
Construction	
Temporary loss and alteration of fishing grounds	Approximately 20 months 500 m temporary exclusion zone around the section of exposed cable being installed, moving as works progress along the length of the cable. In shallow waters or near landfall this could be up to 100 – 1,500 m (with navigational aids to navigation).

Potential Impact	Maximum Design Scenario
Temporary displacement of commercial fishing activities	Approximately 20 months 500 m temporary exclusion zone around the section of exposed cable being installed, moving as works progress along the length of the cable. In shallow waters or near landfall this could be up to 100 – 1,500 m (with navigational aids to navigation).
Loss or damage to fishing gear	Approximately 20 months Worst-case, 5 - 7 days of exposed cable during cable joining activities (risk of snagging to fishing gear). Route clearance if boulders are encountered - +/- 10 m from planned installation route position list (RPL), potentially removing any static gears left soaking if NtM and FLO communication adhered to.
Obstruction of navigation routes to commercial fishing grounds	Approximately 20 months 500 m temporary exclusion zone around the section of exposed cable being installed, moving as works progress along the length of the cable. In shallow waters or near landfall this could be up to 100 – 1,500 m (with navigational aids to navigation).
Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species.	As appraised in Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology .
Operation	
Loss and alteration of fishing grounds	Placement of remedial rock berms. Rock berms will be 7 m wide (no lowering) at the base giving a total area of loss of 0.084 km ² over a length of 12 km. 0.017 km ² rock backfill over a length of 38 km (between KP35 to KP 58, and between KP81.5 to KP96.5). 0.00072 km ² from the placement of concrete mattresses across both landfall locations. 0.05 km ² from concrete mattresses / rock berm protection at cable crossings. There are ten in-service cable crossings that will require protection (maximum footprint of 0.005 km ² per crossing).
Displacement of commercial fishing activities	This is dependent of fisher behaviour and not quantifiable. Existing guidance (ESCA, 2014; MCA, 2021; UKHO, 2024) advises against fishing in the immediate vicinity of known and charted

Potential Impact	Maximum Design Scenario
	cables, however, no legislation or private powers currently exists which prevent access to the area where cables will be buried and / or protected.
Loss or damage to fishing gear	<p>The presence of cable protection and of vulnerable sections of cable (should sections of cable become exposed over time) may pose a snagging risk to fishing gear over the lifetime of the cable.</p> <p>Placement of remedial rock berms. Rock berms will be 7 m wide (no lowering) at the base giving a total area of loss of 0.084 km² over a length of 12 km.</p> <p>0.017 km² rock backfill over a length of 38 km (between KP35 to KP 58, and between KP81.5 to KP96.5).</p> <p>0.00072 km² from the placement of concrete mattresses across both landfall locations.</p> <p>0.05 km² from concrete mattresses/rock berm protection at cable crossings. There are ten in-service cable crossings that will require protection (maximum footprint of 0.005 km² per crossing).</p>
Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species.	As appraised in Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology .
Maintenance	
Anticipated to be analogous to route preparation and cable installation	
Decommissioning	
Anticipated to be analogous to route preparation and cable installation	

Construction Phase

Temporary loss and alteration of fishing grounds

- 8.9.3 The temporary loss of fishing grounds is primarily associated with loss of access to fishing grounds during cable installation activities. During construction all fishing activity will be temporarily excluded from discrete areas by guard vessels around cable laying vessels, support vessels, and sections of temporarily exposed cables (**Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**). This includes the need for static fishing gear to be absent from the extent of the Offshore Scheme Boundary during the Construction Phase. As a result, some fishers may potentially be unable to access some of their fishing grounds for short periods of time.

Sensitivity

- 8.9.4 For the majority of the cable route through ICES rectangles 32F1 and 33F1 (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**), the baseline data suggest there is reasonably limited overlap between the Offshore Scheme and both mobile and static gear fisheries (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).
- 8.9.5 Consultations with local fishers indicate that the northern half of the cable route is considered to be fishing grounds important for pots, nets, and trawling (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).
- 8.9.6 The most southerly quarter of the Offshore Scheme, located in ICES rectangle 31F1, has the greatest density of overlap between fishing activity and the proposed cable route; predominantly with static gear types, such as pots and nets. In both cases the Offshore Scheme comprises a small part of what appears to be widespread fishing grounds within the three ICES rectangles and extending into the bordering ICES rectangles.

Mobile gear fisheries

- 8.9.7 Cockle dredgers account for the greatest value fishery in the Study Area, and thus arguably the most important fishery in the region. Most of the dredging effort in the region takes place outside the western boundary of the Study Area, with surveillance sightings data suggesting dredgers (and trawlers which may include dredges under tow at the time of sighting) concentrate their efforts to the west of ICES rectangle 31F1. This activity has minimal overlap with the Offshore Scheme (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**).
- 8.9.8 These operating patterns reflect the cockle fishing grounds in ICES rectangle 31F1, that are part of the CFFP bylaw, and overlap with the Offshore Scheme (**Figure 6.4.4.8.2 Cockle Management Areas**). As such, these grounds do not open every year, and when open they are only accessible to permit holders (often only for one trip per year). Additionally, there are other cockle fishing grounds available within ICES rectangle 31F1 (both CFFP and TECFO) areas, none of which are in the vicinity of the Offshore Scheme. No CFFP or TECFO cockle fishing grounds overlap with the Offshore Scheme outside of ICES rectangle 31F1.
- 8.9.9 With consideration of the localised operational range of cockle fishing vessels, and cockle fishing grounds being mostly limited to the Thames Estuary and surrounding coasts, there are still ample fishing grounds available to any vessels affected by localised exclusion zones around the installation works.
- 8.9.10 Additionally, with the restricted access to CFFP grounds around the Offshore Scheme; and the planned communication through notices to mariners and the FLO, the sensitivity of dredgers to the temporary loss of fishing grounds during construction is considered low.
- 8.9.11 As discussed in Section 8.7 trawlers active in the Study Area are predominantly Belgian and French vessels landing catches at EU ports.
- 8.9.12 Notably, demersal and beam trawlers have a large operational range, covering much of the southern North Sea and the English Channel (**Application Document Appendix 4.8.A Commercial Fisheries Technical Report**). The data show that the Offshore Scheme overlaps with a small portion of their grounds, with higher or equally valuable areas located away from the cable route.

- 8.9.13 As such, trawlers are considered to be highly adaptable to the temporary loss of fishing grounds, due to the exclusion zone around the installation works, with little impact to landings. Moreover, with the implementation of a FLO and notices to mariners as mitigation, any potential effect to fishers will be minimised.
- 8.9.14 As such, the sensitivity of trawlers to the temporary loss of fishing grounds access during installation is negligible.

Static gear fisheries

- 8.9.15 Pots and traps are the second most valuable fishery in the Study Area, and thus of high importance to the region. Surveillance sightings data suggest that pots and traps are mainly focused within the western and southern areas of ICES rectangle 31F1, within the 6 NM limit: predominantly in coastal waters (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**).
- 8.9.16 Surveillance sightings and consultation with local fishers indicate that there is likely some overlap between fishing activity and the Offshore Scheme, particularly in the northern half of the Study Area, and approaching landfall at Pegwell Bay (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**).
- 8.9.17 It is considered that the majority of potting vessels will not need to adapt their fishing practices substantially. However, considering the potential for individual vessels based in ports close to landfall to be affected more than others, the sensitivity of potting vessels to the temporary loss of fishing grounds during is considered medium. The baseline data indicate gill netting (fixed nets) efforts are concentrated within the 6 NM limit with some overlap with the Offshore Scheme in ICES rectangle 31F1 though there is relatively little activity around the southern landfall (**Application Document 6.4.3.9 Commercial Fisheries: Figure 4.9.4 Surveillance Sightings Data (2017 – 2021)**). Drift netting appears to be a less commonly deployed gear type than fixed nets; predominantly sighted west of the cable route in ICES rectangle 32F1, and less frequently south and west of the cable route in 31F1, and north of landfall in ICES rectangle 33F1. For both gear types, fishing grounds are regionally spread in 31F1 and 32F1, mostly away from the proposed cable route in both cases. However, due consideration is required for drift nets which can travel reasonable distances during their soak times. In this regard, consultations with bottom drift net fishers identified overlap between the areas covered by nets while soaking, and the southern half of the Offshore Scheme in ICES rectangle 32F1 and approximately 10 km of the cable route offshore from Ramsgate (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**).
- 8.9.18 With the short-term, localised and transitory nature of the installation works (and therefore the exclusion zones), and with effective communication measures planned to mitigate any potential effect to fishers, spatially and temporally, it is considered that the majority of netting vessels will be resilient and able to adapt their fishing practices temporarily. However, drift netters may be more hesitant to deploy their gear as greater care will be needed to ensure the environmental conditions and deployment location will avoid gear drifting over the portion of the Offshore Scheme where cable installation is taking place.
- 8.9.19 Thus, the sensitivity of netting vessels to the temporary loss of fishing grounds during installation is considered medium.

Magnitude

- 8.9.20 All fishing activities will be temporarily excluded from small-scale restricted areas around the installation activities (~500 m). In deeper waters guard vessels will maintain a localised exclusion zone around the vicinity of the installation vessels, support vessels, and areas of exposed cable. In shallower waters (<10 m depth) larger installation vessels will not be able to operate freely and may rely on a series of anchors for positioning. This may result in guard vessels maintaining extended exclusion zones for fishing around both landfall locations. Additionally, the offshore cable route will need to be clear of any static gears during the Construction Phase. This may result in non-placement or removal of pots and nets at some locations during specific periods of time.
- 8.9.21 To minimise the magnitude of impact, timely communication will be upheld via the FLO and notices to mariners throughout the duration of installation activities. This will provide clear information for fishers and a point of contact, thus enabling them to understand exactly where and when restrictions will be introduced, and when restrictions will be lifted allowing fishing to resume. Additionally, a procedure for the claim of loss of / or damage to fishing gear will be developed. The detailed nature of the compensation will be agreed post consent, and thus it is not known if this will include the potential for relocation of static gear during construction. As such, it cannot be accounted for as a mitigation measure in the context of temporary loss of fishing grounds for fishers deploying static gear.
- 8.9.22 The installation work will be completed in sections with installations completed over 0.5 to 5 km a day, operating on a 24 hour, 7-day schedule. As such, exclusion zones will move with the installation vessels. This will minimise the duration of restricted access to fishing grounds as much as practicable.
- 8.9.23 With the localised and transient nature of the exclusion zones the magnitude of impact from temporary loss of fishing grounds is considered small for mobile gear fisheries. However local static gear fisheries with smaller operational ranges have the potential to be temporarily excluded from moderate portions of their relatively active fishing grounds in nearshore areas, particularly approaching landfall. As such, the magnitude of impact from temporary loss of fishing grounds is considered medium for static gear fisheries.

Significance of effect

- 8.9.24 The above appraisal of the effects of temporary loss of fishing grounds on commercial fisheries considers there to be a **negligible** significance of effect on mobile gear fisheries, but potentially a **moderate** significance of effect on static gear fisheries (Table 8.15). Thus, there is considered to be no significant effect on mobile fisheries receptors, but a significant effect on static gear fisheries. However, with additional commitment to define the extent and nature of the compensation measures for static gear as part of an evidence-based cooperation agreement, this could potentially be reduced to a **minor** significance (see Section 8.10 Additional Mitigation and Enhancement Measures).

Table 8.15 The effects of temporary loss of fishing grounds on commercial fisheries, during the Construction Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Low	Small	Negligible
	Demersal and Beam Trawlers	Negligible	Small	Negligible
	Seiners			
Static gear	Pots and Traps	Medium	Medium	Moderate
	Drift and Fixed Nets			

Temporary displacement of commercial fishing activities

- 8.9.25 The temporary lack of access to any fishing grounds that overlap the Offshore Scheme, and the associated exclusion zones, could result in the temporary displacement of fishing activity into other areas.
- 8.9.26 Any loss or restricted access to commercial fishing grounds during installation of the HVDC cable could result in increased competition if vessels are displaced to alternative grounds and fisheries resources.

Sensitivity

- 8.9.27 Consultations with mobile gear fishers have identified overlap between their fishing grounds in the northern half of the cable route (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). AIS data for larger fishing vessels somewhat indicate mobile gears may be mainly active in the northern third of ICES 31F1 west of the cable route, as well as in the northern part of ICES 32F1 and (MMO, 2021a). Sightings records also suggest trawlers are more commonly present in the northern half of the cable route and less commonly in the southern half; with some trawler sightings overlapping with the cable route but most records being located near to the coast (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**). Additionally, landings data show proportionally low landings value for trawling across study area (**Figure 6.4.4.8.5 Landings (£) by Fishing Method and Species (Annual Average 2018 - 2022)**) (MMO, 2023b)), which may indicate a lower number of active fishers, or lower annual effort than other gear types.
- 8.9.28 Similarly, consultations with static gear fishers identified their fishing grounds cover a wide area, overlapping the northern half of the cable route, whereas in the southern half of the cable route there are a series of smaller grounds with relatively smaller overlaps (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical**

Report). Sightings data, on the other hand, show relatively few records overlapping the cable route in ICES 32F1 or 33F1 with most static gear sightings located west of the cable route well within the 6 NM limits (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**). Sightings records suggest the greatest overlap between the Offshore Scheme and static fisheries likely occurs in the southern quarter of the Offshore Scheme, located in ICES rectangle 31F1, where there are substantially more records. This is supported by landings data for the Study Area showing the greatest average annual value of landings for pots and traps to be in ICES 31F1; and lowest average annual value for netters to be ICES 33F1 (**Figure 6.4.4.8.5 Landings (£) by Fishing Method and Species (Annual Average 2018 - 2022)**) (MMO, 2023b)). These data suggest that static fisheries overall are likely most sensitive approaching southern landfall approaching Margate and Pegwell bay.

- 8.9.29 All fisheries appear to have a widespread presence, comprising a combination smaller vessel with localised operational ranges as well as larger vessels that typically have greater operational ranges. Thus, individual vessels are considered adaptable, with a high likelihood of available alternate fishing grounds for all overlapping gear types. Additionally, due to their transient nature they are deemed to have high resilience to temporary displacement, in the context of this Project, particularly as fishers have communicated their ability to switch between gear types. Therefore, mobile gear fisheries are considered to have low sensitivity.
- 8.9.30 For vessels that deploy static gear, there is greater potential for conflicts associated with displacement effects to arise. Gear may have to be temporarily relocated away from the Offshore Scheme into areas where other static gears are present, resulting in increased competition and conflict. Similarly, vessels deploying static gear may be displaced to areas where mobile gears are active, or conversely vessels deploying mobile gear may be displaced to areas where static gear are set, further increasing competition and conflict. Alternatively, fishers may have to set their gear in less productive areas, resulting in decreased yields. This is particularly relevant to potters active in Pegwell Bay, and fixed netters active in the northern third of ICES Rectangle 31F1, which already have a degree of overlap in fishing grounds.
- 8.9.31 With the above in mind, static gear fisheries are considered to have medium sensitivity.

Magnitude

- 8.9.32 It is difficult to predict exactly where fishing activity may be displaced as a result of the installation activities, and how this may affect individual vessels. However, in all cases the level of displacement will vary based on the extent and duration of any loss or restricted access to fishing grounds.
- 8.9.33 The baseline data suggest that all fishers have widespread fishing grounds, and that there is reasonably limited overlap with the majority of fishing activity in the Study Area (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**).
- 8.9.34 Notably, the installation works will be completed in sections with installations completed over between 0.5 and 5 km a day, operating on a 24 hour, 7-day schedule (**Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**). The continuous movement of the installation vessel will minimise the duration of restricted access to fishing grounds as much as practicable.
- 8.9.35 Furthermore, the potential increase in competition and conflict as a result of any displacement may have a regional effect. However, due to the localised nature of the installation works, and the associated small-scale exclusion zone (~500 m), this is

expected to impact comparatively few vessels. Thus, the magnitude of impact is considered to be small for all commercial fisheries receptors.

Significance of effect

8.9.36 It is difficult to fully predict where fishing activity may be displaced to and how this may affect individual vessels but based on known installation methods, the likely effects would be temporary, and unlikely to undermine the stability of the fisheries affected. Therefore, the likely effect of temporary displacement is considered **negligible** for mobile gear fisheries, and **minor** for static gear fisheries (Table 8.16). Thus, there is considered to be no significant effect on all commercial fisheries receptors.

Table 8.16 The effects of the temporary displacement of commercial fishing activities, during the Construction Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Low	Small	Negligible
	Demersal and Beam Trawlers			
	Seiners			
Static gear	Pots and Traps	Medium	Small	Minor
	Drift and Fixed Nets			

Loss or damage to fishing gear

8.9.37 Seabed obstacles that may arise from the Project, including the temporary presence of vulnerable sections of cable awaiting trenching or protection during installation, may pose a snagging risk to fishing gear. The safety implications associated with snagging risk are assessed in **Application Document 6.2.4.7 Part 4 Marine Chapter 7 Shipping and Navigation**.

Sensitivity

8.9.38 In the event that fishing gear snags on a seabed obstacle or section of cable it is likely that the gear will be damaged or irretrievable. As such, fisheries are limited in their ability to adapt to the risk of incidental snagging. In light of this a procedure for the claim of loss of and/or damage to fishing gear will be developed (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**; and **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**).

8.9.39 With the inclusion of guard vessels, navigational aids, NtMs, and the FLO communicating the location and timings of the installation works, fishers whose range overlaps the Offshore Scheme are unlikely to be present in the immediate area. Therefore, it is unlikely that mobile fishing gears will be deployed within the areas where snagging risks are

present. The above mitigation measure mean it is also unlikely for static gear to interact with the section of the proposed cable route that installation activities are taking place; particularly potters and fixed netters, due to anchored to the seabed and thus unlikely to drift through the exclusion zone, and across the cable. Drift nets have some potential to unintentionally overlap in range with the Offshore Scheme if the environmental conditions and deployment location are not carefully considered. Drift nets are often configured to hang vertically either near the surface or in mid water, usually avoiding the seabed where the snag risks are present. However, consultations with fishers have shown that a small proportion of netters use bottom drift nets which can touch the seabed. However, for the purpose of risk avoidance demersal netters are considered able to place their gear at variable depths, and therefore are adaptable during the construction phase.

- 8.9.40 With this in mind, the sensitivity of all commercial fisheries receptors to loss or damage to fishing gear during the Construction Phase is considered low.

Magnitude

- 8.9.41 The exact method for cable burial has not confirmed at the time of writing. It is possible that simultaneous cable lay, and trenching (SLB) may be used (**Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**), which would significantly reduce the duration of cable exposure throughout the Construction Phase. However, it is also possible that surface cable lay followed by post lay trenching of cables (PLB) will be used.
- 8.9.42 For both methods installation activities will take place on a 24-hour 7-day schedule. As such, the duration between cable laying and associated trenching and/or protection works will be reduced as far as reasonably practicable, in order to minimise the period that cables are exposed. In areas where the cable will be exposed between installation and physical protection, it will be protected by the deployment of Guard Vessels and NtMs to inform other users of the cable status. Despite this, some activities, such as the joining of two lengths of cable can take up to 5 - 7 days to complete.
- 8.9.43 In terms of other obstacles resulting from the installation activities, all contractors undertaking work will comply with international offshore policies and legislation. This includes the prohibition of discarding objects or material overboard and the requirement to recover accidentally dropped objects, where possible.
- 8.9.44 The extent of areas where exposed cable or dropped objects may create a risk of snagging will be localised around the immediate footprint of cables and protection. The installation activities will also be transient and therefore of short duration. Furthermore, during installation a ROV will be used to monitor the cable or assurance of adequate burial/protection.
- 8.9.45 Communication of the timings and locations of installation activities and exclusion zones will also be provided; the FLO will also disseminate information and maintain dialogue with fishers.
- 8.9.46 The magnitude of the impact of loss or damage to fishing gear is considered small for all commercial fisheries receptors.

Significance of effect

- 8.9.47 The control and management measures regarding communication and information sharing with fishers, implementation of guard vessels, and adherence of contractors to

international offshore policies and legislation substantially reduces the potential for this impact pathway to occur. As such, the effects of loss or damage to fishing gear during the Construction Phase is considered **negligible**, and therefore not significant for all commercial fisheries receptors (Table 8.17).

Table 8.17 The effects of loss or damage to fishing gear, during the Construction Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Low	Small	Negligible
	Demersal and Beam Trawlers			
	Seiners			
Static gear	Pots and Traps	Low	Small	Negligible
	Drift and Fixed Nets			

Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species

- 8.9.48 There is potential for the Construction Phase of the Project to result in impacts to commercially targeted fish and shellfish species. This could subsequently affect the productivity of the fisheries that rely on them.
- 8.9.49 The assessment of impacts on fish and shellfish species is included in **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology** and should be read in conjunction with this commercial fisheries chapter. The species targeted by the commercial fisheries active in the Study Area are grouped into shellfish, which are targeted by dredges and pots and traps, demersal fish species which are mainly targeted by netters and trawlers. The Fish and Shellfish chapter specifically addresses potential impacts to species of commercial importance.
- 8.9.50 The following impact pathways for the Construction Phase have been scoped into assessment in the fish and shellfish chapter:
- Temporary physical disturbance to fish and shellfish habitat;
 - Temporary increase in suspended sediment concentrations (SSC) and subsequent sediment deposition leading to increased turbidity, smothering effects and contaminant mobilisation, on fish and shellfish;
 - Underwater sound from the operation of the Sub-Bottom Profiling (SBP) during the pre-installation geophysical surveys; and

- Underwater sound from Unexploded ordinance (UXO).

Sensitivity

- 8.9.51 As a result of the impact pathways associated with the Construction Phase, fishing grounds within the Offshore Scheme, and beyond it may be affected on a localised scale.
- 8.9.52 Fisheries which target shellfish such as cockle (dredgers), whelk, crab and lobster (pots and traps) are likely more susceptible to knock on effects as these species are less able to avoid the effects of the cable installation, such as increased physical disturbance to their habitat and increases in SSC.
- 8.9.53 Fisher consultations have highlighted that many vessels deploying mobile gear are now multi-purpose, and therefore relatively more versatile and adaptable to any temporary effects to specific target species.
- 8.9.54 Furthermore, the localised and short-term nature of the impacts associated with the Construction Phase, combined with the high recoverability of the fish and shellfish species targeted in the Study Area would be unlikely to affect regional resource availability. Therefore, fishers will likely be able to access alternative fishing grounds within their operational ranges, in response to any potential small-scale effects of target species quality or availability.
- 8.9.55 As such, dredgers, pots and traps are considered to have a medium sensitivity due to indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species. Whereas demersal and beam trawlers, seiners, drift and fixed nets are considered to have low sensitivity.

Magnitude

- 8.9.56 To assess the magnitude of effect on commercial fisheries, both the sensitivity and magnitude of effect for species assessed in **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology** are considered, to determine how the overall significance of the effect on fish and shellfish species may impact commercial fishing fleets. This is because the area affected relates directly to the availability and quantity of exploitable fish and / or shellfish resources. The determination of magnitude in the fish and shellfish chapter also factors in duration and frequency of effect.

Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology has determined there to be a negligible to low magnitude of impact affecting species of fish and shellfish with sensitivities ranging from low to very high. As such, the significance of the effect for all impact pathways relating to fish and shellfish species are considered to be of negligible or minor significance; with no additional mitigation measures recommended. Therefore, it is expected that no measurable loss of commercial target species availability or quality within fishing grounds will take place will occur as a result of the construction phase activities, and therefore no measurable loss of ability to undertake fishing activities.

- 8.9.57 Subsequently, the magnitude of effect due to indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species is considered negligible.

Significance of effect

- 8.9.58 As all impact pathways relating to fish and shellfish are considered to be not significant, it is highly unlikely for population level effects to occur that would have a substantial knock-on effect on commercial fisheries receptors.
- 8.9.59 Consultation with regulators raised stakeholders concerns regarding the potential effects to species and habitats within the Goodwin Sands MCZ that may indirectly impact fisheries based outside of these protected areas. Notably, the Offshore Scheme has been refined since these concerns were raised, to remove any previous overlap between the Project and Goodwin Sands MCZ. As such, increases in SSC and underwater sound are the only impact pathways that could affect commercially important shellfish and fish within the MCZ. Both these pathways are determined to have no significance in **Application Document 6.2.4.2 Part 4 Marine Chapter 2 Benthic Ecology**, and **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology**.
- 8.9.60 Subsequently, the indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species is considered to be **negligible**, and therefore not significant, for all commercial fisheries receptors (Table 8.18).

Table 8.18 The Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species, during the Construction Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Medium	Negligible	Negligible
	Demersal and Beam Trawlers	Low	Negligible	Negligible
	Seiners	Low	Negligible	Negligible
Static gear	Pots and Traps	Medium	Negligible	Negligible
	Drift and Fixed Nets	Low	Negligible	Negligible

Obstruction of navigation routes to commercial fishing grounds

- 8.9.61 The presence of Project-related vessel traffic, and the implementation of exclusion zones around the cable installation vessel, have the potential to obstruct navigational routes, influencing shipping patterns. This in turn, may result in fishing vessels temporarily needing to take alternative routes, or delay departure times in order to access fishing grounds.

- 8.9.62 Additional, detailed assessment relating to the potential impacts of the Construction Phase on all shipping activity is presented in **Application Document 6.2.4.7 Part 4 Marine Chapter 7 Shipping and Navigation**. Based on the embedded control and management measures identified, the impact of Offshore Scheme operations on all vessel types leading to disruption to established vessel routes and areas is of Very High (Likely) sensitivity and assessed as Minor (Low) Magnitude. The EIA significance is considered to be **Unlikely to be significant (Tolerable if ALARP)**.

Sensitivity

- 8.9.63 Surveillance sightings suggest that fishing vessels in the Study Area are most commonly present landward (west) of the Offshore Scheme Boundary, within the 6 NM limit (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**). Additionally, there is relatively limited overlap between the Offshore Scheme and key active fishing grounds, with the majority of vessel sightings away from the proposed cable route, and fisher consultations showing a relatively wide range of fishing grounds either side of the Offshore Scheme. Consultations with local fishers also indicate that the northern half of the cable route is considered fishing grounds important for pots, nets, and trawling (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). The most southern quarter of the Offshore Scheme, located in ICES rectangle 31F1, has the greatest number of sightings, suggesting overlapping fishing activity with the proposed cable route. In both cases the Offshore Scheme comprises a small part of what appear to be widespread fishing grounds.
- 8.9.64 It is likely that most vessels based at local ports landing catches from the Study Area (Table 8.13) will not need to cross the Offshore Scheme, as they would be able to reasonably access alternative grounds nearby without doing so. However, due to the continuous movement of the cable installation, and the associated exclusion zone (~500 m), those vessels that do need to cross the Offshore Scheme will be able to do so at locations more than 500 m from the installation vessel; and will only need to do so temporarily.
- 8.9.65 Furthermore, timely communication regarding the location of installation activities and exclusion zones, and upcoming plans, will be provided via Kingfisher Bulletins, Navigational Telex (NAVTEX) and Navigational Areas (NAVAREA) warnings.
- 8.9.66 A Fisheries Liaison Officer (FLO) will also disseminate information and maintain dialogue with fishers during the Construction Phase. As such, fishers will be afforded ample time to plan their routes to minimise any potential impact to their fuel costs that avoidance of the temporary work could cause.
- 8.9.67 Thus, in light of the range, versatility, and adaptability of fishers in the Study Area the sensitivity of commercial fisheries to obstruction to navigational routes and fishing grounds is considered to be low for all commercial fishery receptors.

Magnitude

- 8.9.68 During cable installation, which is anticipated to total approximately 20 months over two campaigns, all vessels will be moving systematically along the Offshore Scheme, resulting in a local presence for a very short amount of time that will be communicated in advance.
- 8.9.69 For a large portion of the Offshore Scheme, vessels based at local ports fishing within 6 NM will not need to cross over the Offshore Scheme. Consultations and sighting records

also suggest as there is good availability of alternative fishing grounds landward of the proposed cable route. Despite this, a small proportion of the total number of vessels could be obstructed by installation activities, most likely vessels based in Ramsgate during installation at the southern landfall at Pegwell Bay. However, since the construction activities will be temporary and short term in any one location, any areas of exclusion will also be localised and of limited duration. There will also be clear and timely communication between the FLO and fishers (**Application Document 7.5.2 Offshore Construction Environmental Management Plan**).

8.9.70 Thus, in light of the area of effect and duration of installation activities, and planned liaison with fishers, the magnitude of impact to commercial fisheries resulting from obstruction to navigational routes and fishing grounds is considered to be small for all commercial fisheries receptors.

Significance of effect

8.9.71 The above appraisal of the obstruction of navigation routes to commercial fishing grounds considers there to be a **minor** significance of effect on all commercial fisheries receptors (Table 8.19). Thus, there is considered to be no significant effect on all commercial fisheries receptors.

Table 8.19 The effects of the obstruction of navigation routes to commercial fishing grounds, during the Construction Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Low	Small	Minor
	Demersal and Beam Trawlers			
	Seiners			
Static gear	Pots and Traps	Low	Small	Minor
	Drift and Fixed Nets			

Operation Phase

8.9.72 As detailed in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**, cables will be buried to a minimum depth of lowering (DOL) to the top of the cable of 0.5 m (in areas of bedrock), with a target DOL for the Proposed Project approximately 1 m to 2.5 m throughout the majority of the cable, where the seabed geology allows it.

Loss and alteration of fishing grounds

- 8.9.73 There may be a loss of access to fishing grounds throughout the lifetime of the cable during the operational phase. This predominantly relates to the presence of cable protection where the minimum DOL cannot be achieved, such as locations of cable crossings. While existing guidance from the Mariner's Handbook (UKHO, 2024), the Maritime and Coastguard Agency (MCA, 2021), the European Subsea Cables Association (ESCA, 2014) advise against fishing in the immediate vicinity of known and charted cables, no legislation or private powers currently exists which prevent access to the area where cables will be buried and / or protected.

Sensitivity

- 8.9.74 For the majority of the cable route through ICES rectangles 32F1 and 33F1 (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**), the baseline data suggest there is reasonably limited overlap between the Offshore Scheme and both mobile and static gear fisheries (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). The surveillance sightings show the greatest overlap in records and the Offshore Scheme in the southern quarter of the Offshore Scheme, located in ICES rectangle 31F1, comprising mainly fishing using pots and fixed nets. However, these areas of overlap do not appear to be where gear usage is most concentrated. In all cases fisher consultations and sightings records indicate widespread fishing grounds throughout the Study Area and the surrounding region⁷. Thus, it is highly likely that there is a high availability of alternate fishing grounds for all overlapping gear types.
- 8.9.75 While vessels are expected to follow guidance around the immediate location of the cable, no legislation or private powers currently exists which prevent access to the area where cables will be buried and / or protected, and any avoidance would in an extremely localised portion of fishing grounds.
- 8.9.76 Additionally, all fishing gear deployed within the Study Area operate above the surface of the sediment, with the exception of dredges, which penetrate the surface of the sediment by ~20 mm (scallop dredges (SeaFish, 2024)) to ~50 mm (cockle dredges (Haupt, 2022)).
- 8.9.77 In areas where only shallow burials can be achieved, or the cable is likely to be exposed (e.g., at cable crossings) cable protection will be present. Rock backfills (below the original seabed level) is currently planned between KP 38 to KP 58, and KP 81.5 to KP 96.5. If any remedial berms are required in areas of insufficient back fill will be designed with 1:3 slopes and flat crests in line with industry guidance, intended to prevent the risk of towed fishing gears snagging.
- 8.9.78 Furthermore, pots and fixed nets are weighed to rest on the seabed, and typically remain relatively stationary for the duration of their soak time. Thus, they are only susceptible to snagging risks on the surface of the seabed in the event of substantial accidental drift. Drift nets, on the other hand, intentionally drift and may cross over the installed cables during the net's soak time. Drift nets have multiple configurations and are often set up to float just under the surface, thus avoiding contact with the seabed. In this configuration, the presence of cable protection will not pose a snagging risk. However, bottom drift nets can touch the seabed and may snag on some cable protection types. Rock berms for

⁷ or in the case of drift nets a wide geographical range / variance in where gear on-effort gear may overlap the Offshore Scheme.

example, are likely to have jagged edges, and potentially pose a snagging risk to bottom drift nets, regardless of profile.

8.9.79 With this in mind, mobile gear fisheries and drift nets are considered to have a medium sensitivity to the loss of fishing grounds. Pots and traps, on the other hand, are considered to have a low sensitivity to the loss of fishing grounds.

Magnitude

8.9.80 The locations where cable protection will be placed (as indicated in **Application Document 6.2.4.2 Part 4 Marine Chapter 2 Benthic Ecology: Figure 6.4.4.2.3 Marine Cable Crossings and Areas of Rock Backfill Within the Offshore Scheme Boundary**) will be extremely localised, and even when combined with the cable itself, these areas comprise a very small portion of available fishing grounds in the Study Area. Their location will be clearly communicated to other sea users, and their presence is unlikely to cause the vast majority of fishers to avoid the surrounding area after installation is completed. However, the current design of rock berm cable protection has been highlighted as a concern by bottom drift netters who may feel unable to fish certain localised locations where their gear is likely to pass over cable protection while soaking.

8.9.81 Where mobile sediments are present, there is some potential for small sections of cable to become exposed, presenting a localised risk of snagging. The minimum DOL has been designed with the intention of reducing this possibility as much as practicable. In order to further mitigate against this occurrence, regularly scheduled surveys will be undertaken at areas of mobile substrate along the cable route to monitor the continuing levels of protection to the cable provided by burial in the seabed.

8.9.82 Thus, the worst-case magnitude of impact for the loss of fishing grounds in this manner is considered small for all commercial fisheries receptors, with the exception of drift netters which are considered medium.

Significance of effect

8.9.83 The above appraisal of the effects of the loss of fishing grounds on commercial fisheries considers there to be a **minor** significance of effect for mobile gear fisheries, and **negligible** significance of effect on pots and traps (Table 8.20). Thus, there is considered to be no significant effect on these commercial fisheries receptors. However, there is considered to be a **moderate** effect for drift netters, and therefore a significant effect. With additional commitment to a cable protection review and consultation with fishers on the topic previous developments in the Study Area have been able to reduce this impact pathway to **minor** (see **section 8.10 Additional Mitigation and Enhancement Measures**).

Table 8.20 The effects of temporary loss of fishing grounds on commercial fisheries, during the Operation Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
	Dredgers	Medium	Small	Minor

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Demersal and Beam Trawlers			
	Seiners			
Static gear	Pots and Traps	Low	Small	Negligible
	Drift and Fixed Nets	Medium	Medium	Moderate

Displacement of commercial fishing activities

- 8.9.84 Any loss or restricted access to commercial fishing grounds during operation phase of the HVDC cable could result in vessels being permanently displaced to alternative grounds and fisheries resources, resulting in increased competition.

Sensitivity

- 8.9.85 While existing guidance from the Mariner's Handbook (UKHO, 2024), the Maritime and Coastguard Agency (MCA, 2021), the European Subsea Cables Association (ESCA, 2014) advise against fishing in the immediate vicinity of known and charted cables, no legislation or private powers currently exists which prevent access to the area where cables will be buried and / or protected. Any avoidance will result in loss of localised fishing grounds to trawlers.
- 8.9.86 Consultations with mobile gear fishers have identified overlap between their fishing grounds in the northern half of the cable route (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). AIS data for larger fishing vessels somewhat indicate mobile gears may be mainly active in the northern third of ICES 31F1 west of the cable route, as well as in the northern part of ICES 32F1 and (MMO, 2021a). Sightings records also suggest trawlers are more commonly present in the northern half of the cable route and less commonly in the southern half; with some trawler sightings overlapping with the cable route but most records being located near to the coast (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**). Additionally, landings data show proportionally low landings value for trawling across study area (**Figure 6.4.4.8.5 Landings (£) by Fishing Method and Species (Annual Average 2018 - 2022)**) (MMO, 2023b)), which may indicate a lower number of active fishers, or lower annual effort than other gear types.
- 8.9.87 Similarly, consultations with static gear fishers identified that their fishing grounds cover a wide area, overlapping the northern half of the cable route, whereas in the southern half of the cable route there are a series of smaller grounds with relatively smaller overlap (**Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**). Sightings data, on the other hand, show relatively few records overlapping the cable route in ICES 32F1 or 33F1 with most static gear sightings located west of the cable route well within the 6 NM limits (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 –**

2022)). Sightings records suggest the greatest overlap between the Offshore Scheme and static fisheries likely occurs in the southern quarter of the Offshore Scheme, located in ICES rectangle 31F1, where there are substantially more records. This is supported by landings data in for the Study Area showing the greatest average annual value of landings for pots and traps to be in ICES 31F1; and lowest average annual value for netters to be ICES 33F1 (**Figure 6.4.4.8.5 Landings (£) by Fishing Method and Species (Annual Average 2018 - 2022)**) (MMO, 2023b)). These data suggest that static fisheries are likely most sensitive in approaching southern landfall approaching Margate and Pegwell bay.

- 8.9.88 All fisheries appear to have a widespread presence, comprising a combination smaller vessel with localised operational ranges as well as larger vessels that typically have greater operational ranges. Thus, individual vessels are considered adaptable, with a high likelihood of available alternate fishing grounds for all overlapping gear types. Additionally, due to their transient nature they are deemed to have high resilience to temporary displacement, in the context of this Project, particularly as fishers have communicated their ability to switch between gear types. Therefore, mobile gear fisheries are considered to have low sensitivity.
- 8.9.89 As discussed in section 8.9 (Operation Phase: Loss and alteration of fishing grounds), mobile gear fisheries are more likely to be cautious with their on-effort routes, and drift net fisheries are likely to be more cautious with where they deploy their nets relative to known areas of cable protection. Therefore, both are considered to have medium sensitivity to displacement during the operational phase. Pots and traps, on the other hand, are less susceptible to the potential risks the presence of cable protection poses and are able to deploy gear types with accuracy. Therefore, pots and traps fisheries are considered to have a low sensitivity to displacement during the operational phase.

Magnitude

- 8.9.90 If there is any displacement of fishing activity it is difficult to predict exactly where fishing activity may be displaced to as a result of the presence of the cable, and how this may affect individual vessels. However, in all cases the level of displacement will vary based on the extent and duration of any loss or restricted access to fishing grounds.
- 8.9.91 For the majority of the cable route, the baseline evidence suggests that there is reasonably limited overlap between the Offshore Scheme and active fishing grounds (**Figure 6.4.4.8.4 Surveillance Sightings Data (2013 – 2022)**, and **Application Document 6.3.4.8.A Appendix 4.8.A Commercial Fisheries Technical Report**), and that the localised areas where cable protection will be required will comprise a small part of what the baseline data indicate are widespread fishing grounds; both within the Study Area and the wider region beyond it.
- 8.9.92 Furthermore, the potential increase in competition and conflict because of any displacement may have a regional effect. However, due to the extremely localised nature of the cable and its associated protection, and the design of the installed protection to not pose a risk to towed fishing activities, this is expected to impact comparatively few vessels. Thus, the magnitude of impact is considered to be small for all commercial fisheries receptors.

Significance of effect

- 8.9.93 It is difficult to fully predict where fishing activity may be displaced to and how this may affect individual vessels. However, based on the current Project design the effects are likely to be minimal.

- 8.9.94 Therefore, the appraisal of the effects of displacement of commercial fishing activities considers there to be a **minor** significance of effect for mobile gear and drift net fisheries, and **negligible** significance of effect on pots and traps fisheries receptors (Table 8.20). Thus, there is considered to be no significant effect on all commercial fisheries receptors.

Table 8.21 The effects of the temporary displacement of commercial fishing activities, during the Operation Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers			
	Demersal and Beam Trawlers	Medium	Small	Minor
	Seiners			
Static gear	Pots and Traps	Low	Small	Negligible
	Drift and Fixed Nets	Medium	Small	Minor

Loss or damage to fishing gear

- 8.9.95 Seabed obstacles which occur as a result of the operational phase of the Project, including the presence of cable protection and of vulnerable sections of cable (should sections of cable become exposed over time) may pose a snagging risk to fishing gear over the lifetime of the cable.
- 8.9.96 The safety implications associated with snagging risk are assessed in **Application Document 6.2.4.7 Part 4 Marine Chapter 7 Shipping and Navigation**.

Sensitivity

- 8.9.97 In areas of bedrock (e.g., chalk) the minimum DOL will be 0.5 m. However, the target DOL for the cable installation is 1 to 2.5 m and expected to be achievable throughout the majority of the cable route.

All fishing gear deployed within the Study Area operate above the surface of the sediment, with the exception of dredges, which penetrate the surface of the sediment by ~20 mm (scallop dredges (SeaFish, 2024)) to ~50 mm (cockle dredges (Haupt, 2022)). Pots and fixed nets are weighted to rest on the seabed and typically remain relatively stationary for the duration of their soak time. As such, they would be expected to continue to be deployed in the relative proximity of cables. Drift nets, which intentionally drift and may cross over the installed cables during the net's soak time, some drift nets are configured to float mid-water or just under the surface. These nets would avoid contact with the seabed and thus are unlikely to be at risk of snagging, however, bottom drift nets drift close to the seabed and are therefore more susceptible to snagging risks.

Over time it is possible that the movement of the substrate will cause the cable to become exposed. To mitigate against this occurrence depth of burial surveys will be conducted at 12 and 24 months to monitor the integrity of cable and subsequently schedule future surveys, maintenance works, and inform mitigation planning moving forward.

- 8.9.98 The current Offshore Scheme is expected to have ten cable crossings where protection will be required to protect the HVDC cable. Protection will be designed in line with industry guidance, reducing the potential for snagging. Where burial cannot be achieved, rock backfill (placement of rock in the cable trench up to or below seabed level) or external protection (e.g. rock berms) may be required where the soil or rock conditions are too hard to achieve effective burial. Expected areas of rock backfill are located between KP 38 to KP 58, and KP 81.5 to KP 96.5. Indicative contingency for remedial rock protection is 15% of non-high-risk length.
- 8.9.99 Where cable protection is used rock backfill (KP 38 to KP 58, and KP 81.5 to KP 96.5) and remedial berms will be installed to reduce the potential for snagging further. The current Offshore Scheme is expected to require ~12 km of remedial rock berms, with a 1:3 profile and flat crests. This will mitigate against towed gear but will still pose a snagging risk for bottom drift nets.
- 8.9.100 However, should fishing gear snag on a seabed obstacle or section of cable it is likely that the gear will be damaged or irretrievable. However, a procedure for the claim of loss of / or damage to fishing gear will be developed.
- 8.9.101 As such, bottom drift nets are considered to have a medium sensitivity to loss or damage to fishing gear. All other fisheries are able to adapt their practices to minimise the risk of snagging, though they are limited in their ability to adapt to the risk of incidental snagging. Thus, the sensitivity of all other commercial fisheries to loss or damage to fishing gear is considered to be low.

Magnitude

- 8.9.102 An ROV will be used during installation to monitor the cable as assurance of adequate burial/protection. Post installation surveys and reporting will then be completed to provide a record of safe installation and/or identify any areas along the cable route that require further work to meet the target burial depth of 1 – 2.5 m, and/or require additional protection. Further surveys are expected to be scheduled for 12 and 24 months to monitor the integrity of cable and subsequently schedule future surveys, maintenance works, and inform mitigation planning moving forward.
- 8.9.103 The potential for this impact pathway to occur is long-term in duration, essentially the life of the cable, but it is highly likely to be localised around the immediate footprint of cable protection and discrete areas where cables may become exposed, and therefore small in extent.
- 8.9.104 With regard to bottom drift nets, the locations where cable protection will be placed (as indicated in **Application Document 6.2.4.2 Part 4 Marine Chapter 2 Benthic Ecology: Figure 6.4.4.2.3 Marine Cable Crossings and Areas of Rock Backfill Within the Offshore Scheme Boundary**) will be extremely localised. The current design of rock berm cable protection has been highlighted as a concern by bottom drift netters who may feel unable to fish in certain locations where their gear is likely to pass over cable protection while soaking. However, the locations where cable protection is expected to be used comprise a very small portion of available fishing grounds in the Study Area.

- 8.9.105 In light of the above, the magnitude of impact from loss or damage to fishing gear is considered to be small for all commercial fisheries receptors.

Significance of effect

- 8.9.106 The above appraisal of the potential effect of fishing gear being snagged on cable protection considers there to be a negligible significance of effect on all commercial fisheries receptors (Table 8.22). Thus, there is considered to be no significant effect on all commercial fisheries receptors.

Table 8.22 The effects of loss or damage to fishing gear, during the Operation Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely	Significance of effect
Mobile gear	Dredgers	Low	Small		Negligible
	Demersal and Beam Trawlers				
	Seiners				
Static gear	Pots and Traps	Medium	Small	Minor	
	Drift and Fixed Nets				

Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species

- 8.9.107 There is potential for the operation phase of the Project to result in impacts to commercially sensitive fish and shellfish species. This could subsequently affect the productivity of the fisheries that rely on them.
- 8.9.108 The assessment of impacts on fish and shellfish species, including those of commercial importance, is included in **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology**, and should be read in conjunction with this commercial fisheries chapter. The species most valuable to the commercial fisheries active in the Study Area are grouped within shellfish, which are targeted by dredges and pots and traps, and demersal fish species which are mainly targeted by drift and fixed nets and trawlers.
- 8.9.109 The following impact pathways for the operation phase are included in the fish and shellfish chapter:
- Potential effects on fish and shellfish due to subsea cable thermal emissions; and
 - Potential effects on fish and shellfish due to subsea cable electromagnetic field (EMF) emissions.

Sensitivity

- 8.9.110 As a result of the impact pathways associated with the Operation Phase, fishing grounds within the Offshore Scheme, and beyond it may be affected on a localised scale; subsequently affecting the fisheries that target them.
- 8.9.111 Fisheries which target shellfish such as cockle (dredgers), whelk, crab and lobster (pots and traps) are likely more susceptible to knock on effects as these species are less able to avoid the effects of the cable installation, such as increased physical disturbance to their habitat and increases in SSC.
- 8.9.112 Fisher consultations have highlighted that many vessels deploying mobile gear are now multi-purpose, and therefore relatively more versatile and adaptable to any temporary effects to specific target species.
- 8.9.113 Furthermore, the localised and short-term nature of the impacts, combined with the high recoverability of the fish and shellfish species targeted in the Study Area would be unlikely to affect regional resource availability. Therefore, fishers will likely be able to access alternative fishing grounds within their operational ranges, in response to any potential small-scale effects of target species quality or availability.
- 8.9.114 As such, dredgers, and pots and traps are considered to have a medium sensitivity to indirect effects on commercial fisheries because of impacts on the ecology of commercial species. Whereas demersal and beam trawlers, seiners, drift and fixed nets are considered to have low sensitivity.

Magnitude

- 8.9.115 To assess the magnitude of effect on commercial fisheries, both the sensitivity and magnitude of effect for species assessed in **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology** are considered, to determine how the overall significance of the effect on fish and shellfish species may impact commercial fishing fleets. This is because the area affected relates directly to the availability and quantity of exploitable fish and / or shellfish resources. The determination of magnitude in the fish and shellfish chapter also factors in duration and frequency of effect.
- 8.9.116 Table 8.23 summarises the results of the fish and shellfish ecology assessment. Evidence and justifications for these assessments are detailed in **Application Document 6.2.4.3 Part 4 Marine Chapter 3 Fish and Shellfish Ecology**.
- 8.9.117 In light of the above information, this appraisal considers the magnitude of effect to all commercial fisheries receptors to be negligible.

Significance of effect

- 8.9.118 As all impact pathways relating to fish and shellfish are considered to be **not significant**, it is highly unlikely for population level effects to occur that would have a substantial knock-on effect on commercial fisheries receptors.
- 8.9.119 Consultation with regulators raised stakeholders concerns regarding the potential effects to species and habitats within the Goodwin Sands MCZ that may indirectly impact fisheries based outside of these protected areas. While protected features of the MCZ are related to commercially important fish and shellfish species, they are known to be present within the MCZ's boundaries. Notably the Offshore Scheme has been refined since these concerns were raised, to remove any previous overlap between the Project

and Goodwin Sands MCZ. As such, there are no longer any impact pathways that could affect commercially important shellfish and fish within the MCZ. Subsequently, the indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species is considered to be **negligible**, and therefore not significant, for all commercial fisheries receptors.

Table 8.23 The Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species, during the Operation Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Medium	Negligible	Negligible
	Demersal and Beam Trawlers	Low	Negligible	Negligible
	Seiners	Low	Negligible	Negligible
Static gear	Pots and Traps	Medium	Negligible	Negligible
	Drift and Fixed Nets	Low	Negligible	Negligible

Maintenance Phase

8.9.120 As detailed in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**, maintenance activity along the marine cable route is expected to be limited to non-intrusive inspections and cable repairs, as required.

8.9.121 As such, the same impact pathways appraised as part of the Construction Phase are relevant to the appraisal of the Maintenance Phase.

Sensitivity

8.9.122 The sensitivity of commercial fisheries receptors are likely to be similar or lower than those during the Construction Phase; particularly as exclusion zones will be required around any required temporary maintenance works.

8.9.123 Applying the precautionary principle, the worst-case sensitivity of dredgers, potters, and drift and fixed nets is considered medium during the Maintenance Phase, and low for trawlers and seiners.

Magnitude

8.9.124 The magnitude of potential impacts to commercial fisheries receptors are likely to be less than those during the Construction Phase. While exclusion zones will still be required, the extremely localised and short-term nature of any maintenance works, as opposed to systematic works along the entirety of the Offshore Scheme, will reduce the magnitude of effect. As such, the sensitivity all commercial fisheries receptors during the Maintenance Phase is considered negligible.

Significance of effect

- 8.9.125 It is expected that maintenance activity along the marine cable route would be limited to non-intrusive inspections and cable repairs. The activities required for cable repair (most commonly jetting and rock placement) would be comparable to those used in cable installation, requiring similar implementation of vessels, clearance of obstacles (i.e. static gears), and maintaining a safe working area. As such, the potential impact pathways to commercial fisheries mirror those identified for the marine portion of the Construction Phase.
- 8.9.126 Regularly scheduled surveys will be undertaken at areas of mobile substrate along the cable route to monitor the continuing levels of protection to the cable provided by burial in the seabed. In turn, this will be used to inform the need for any remedial works to maintain depth of cover to the cables. Cable repairs may be required at any time, however good design and installation will mitigate this. Any repair works are likely to be highly localised to the area of concern. Therefore, the spatial extent of any impacts would be small. Furthermore, any maintenance or repairs works would be of a significantly shorter duration in comparison to installation activities.
- 8.9.127 Routine maintenance and unforeseen cable repair (although unlikely) have well defined procedures and processes which are commonplace within the industry. Ultimately, the impacts of maintenance and cable repair works would be of smaller magnitude than cable installation. As such, the overall level of effect **negligible** for and therefore not significant for all commercial fisheries receptors.

Table 8.24 The significance of effect resulting from the Maintenance Phase, by gear type

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely Significance of effect
Mobile gear	Dredgers	Medium	Negligible	Negligible
	Demersal and Beam Trawlers	Low	Negligible	Negligible
	Seiners			
Static gear	Pots and Traps	Medium	Negligible	Negligible

Receptor	Gear type	Sensitivity	Magnitude of impact	Likely	Significance of effect
	Drift and Fixed Nets				

Decommissioning Phase

- 8.9.128 An initial decommissioning plan will be written once the final route and installation methodology is chosen; and will follow all applicable legislation and best practice guidance at the time of writing. Notably, the decommissioning of the cable will likely be many decades into the future, by which time regulatory requirements and industry best practice will likely change. Therefore, the decommissioning plan will be updated throughout the life of the project in line with changes in regulatory requirements and industry best practice, in preparation for the commencement of decommissioning.

Sensitivity

- 8.9.129 In the worst-case scenario of decommissioning, which is the removal of a buried cable, the sensitivity of commercial fisheries receptors are likely to be similar to those during the Construction Phase. This is due to the likelihood that similar activities and mitigation measures will be required, albeit in reverse for some activities; For example, exclusion zones will be required to protect constantly moving small scale works along the cable route.
- 8.9.130 Applying the precautionary principle, the worst-case sensitivity of dredgers, potters, and drift and fixed nets is considered medium during the Decommissioning Phase, and low for trawlers and seiners.

Magnitude

- 8.9.131 Decommissioning activities, and mitigation measures are likely to be similar to those in the Construction Phase, and therefore a similar magnitude of effect is to be expected.
- 8.9.132 As discussed in the Construction Phase assessment, there could be a moderate temporary loss to fishers' ability to fishing activities within their operational range, resulting in a medium magnitude of effect. However, with additional commitment to the development of the extent and nature of the compensation measures as part of an evidence-based cooperation agreement, this could potentially be reduced. For all other fisheries receptors the magnitude of effect is considered small.

Significance of effect

- 8.9.133 If Sea Link is required to be decommissioned, the proposed marine HVDC cable could be decommissioned as part of this process. In this event, the redundant cables could either be left in-situ, or all or parts of the cable could be removed for recycling. This is often dependent on the burial depth of the cable and the mobility of the seabed, which may change substantially between installation and the end of the cable's life.
- 8.9.134 The principal options for decommissioning are described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**.

- 8.9.135 The effects of removal of the cables to commercial fisheries should be incorporated into the assessment for the best method of cable removal, or the value of the decommissioned cables remaining in situ.
- 8.9.136 The techniques for decommissioning are often simpler than for installation, prioritising minimising seabed disturbance over cable integrity. However, should full removal from the seabed be required, this could potentially cause similar impacts to those during the Construction Phase of the Offshore Scheme, depending upon the decommissioning option chosen.
- 8.9.137 As such, the impacts identified in the appraisal undertaken in respect of the Construction Phase are considered to also apply to decommissioning activities. Thus, applying the precautionary principle, the significance of the effects to potters is considered **moderate** at the time of writing; but this would be considered minor with additional mitigation (see section 8.10). The significance of effect for all other commercial fisheries is considered to be **negligible**.

8.10 Additional Mitigation

- 8.10.1 Mitigation measures are additional topic and site-specific measures that have been applied to mitigate or offset any likely significant effects.
- 8.10.2 There is currently potential for effects of **moderate** significance to occur on static gear fisheries, related to the temporary loss of access to or temporary alteration of fishing grounds during construction.
- 8.10.3 To mitigate these potential effects, a Fisheries Liaison and Co-existence Plan (FLCP) will be prepared which will include procedures for compensating impacted fishers for the relocation or removal of fishing gear. This commitment is set out in **Application Document 7.5.3.2 (B) CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** – commitment CF04, submitted at deadline 1.
- 8.10.4 The detailed nature of the compensation will be agreed post consent as part of an evidence-based cooperation agreement between fisheries and the developer; as has been enacted during surveys, and for previous developments in the region. In particular, this mitigation will be refined to outline which gear must be relocated during construction or maintenance work, with focus given primarily regarding smaller vessels with limited ranges, particularly in nearshore areas approaching landfall. In these areas there could be a moderate temporary loss to fishers' ability to undertake fishing activities within their operational range. However, with additional commitment to the extent and nature of the compensation measures to be developed and included in the FLCP, this potential impact will be reduced to a **minor** and will not be significant.
- 8.10.5 Additionally, there is potential for effects of **moderate** significance to occur on static gear fisheries, related to the loss and alteration of fishing grounds during the operational phase. This predominantly relates to the risk of bottom drift nets snagging on the current cable protection design, due to the use of rock berms. The 1:3 profile will provide mitigation for towed gears, but fishers have communicated that the jagged and uneven nature of the rocks can snag their nets.
- 8.10.6 In addition to setting out procedures for agreeing evidence-based compensation for gear loss, damage, relocation and removal, the FLCP will also set out measures for engaging with the fisheries sector on cable protection design pre-construction and set out proposals for long term engagement with the fisheries sector. This commitment is set out in

Application Document 7.5.3.2 (B) CEMP Appendix B Register of Environmental Actions and Commitments (REAC) – commitment CF06.

- 8.10.7 It is understood that other developments in the region have implemented these mitigation measures, adapting the design of their cable protection slightly, which in turn allowed bottom drift net fishers to continue their activity in the areas surrounding those developments. Furthermore, the Project is also committed to post installation surveys along the Offshore Scheme to confirm depth of lowering and monitor cable protection for potential snag risk. This commitment is also included in **Application Document 7.5.3.2 (B) CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** under Commitment CF05, submitted at deadline 1.
- 8.10.8 With a commitment to setting out procedures for agreeing evidence-based compensation for gear loss, damage, relocation and removal and a commitment to engaging with the fisheries sector on cable protection design included in an overarching FLCP and a commitment to post construction surveys to monitor potential snag risks where cable protection is required, potential impacts on fixed and drift net fishers during operation will be reduced to **minor** and will not be significant in EIA terms.
- 8.10.9 For all other impact pathways, no significant effects on commercial fisheries receptors have been found, and thus, these pathways have no additional mitigation measures recommended. For these impact pathways, the residual significance of effect is not altered from the initial determination of significance (Table 8.25).
- 8.10.10 Of additional note, consultation with regulators revealed that fishers feel engagement from the FLO on behalf of the project could be earlier and more frequent. While consideration must be given to the potential for consultee fatigue, in the event of communicating too frequently, fishers state they would appreciate if FLO engagement, and NtMs could be provided at the earliest possible convenience on each occasion. This would minimise the effects to commercial fishery receptors as much as practicable and would also help maintain positive relations with fishers.

8.11 Sensitivity Test

- 8.11.1 The construction of the Offshore Scheme could commence in any year up to five years from the granting of the DCO which is assumed to be in 2026. The effects reported within this chapter would not be any different if the works were to commence in any year up to year five.

8.12 Residual Effects and Conclusions

Table 8.25 Summary of appraisal

Phase	Potential Impact	Receptor	Gear type	Sensitivity	Magnitude	Significance	Additional mitigation	Residual significance
Construction Phase	Temporary loss and alteration of fishing grounds	Mobile gear fisheries	Dredgers	Low	Small	Negligible	No	Negligible
			Beam and demersal trawlers	Negligible	Small	Negligible	No	Negligible
			Seiners					
		Static gear fisheries	Pots and traps	Medium	Medium	Moderate	Yes	Minor (not significant)
	Temporary displacement of commercial fishing activities	Mobile gear fisheries	Fixed and drift nets					
			Dredgers	Low	Small	Negligible	No	Negligible
			Beam and demersal trawlers					
			Seiners					
		Static gear fisheries	Pots and traps	Medium	Small	Minor	No	Minor (not significant)

Phase	Potential Impact	Receptor	Gear type	Sensitivity	Magnitude	Significance	Additional mitigation	Residual significance
	Loss or damage to fishing gear	Mobile gear fisheries	Fixed and drift nets	Low	Small	Negligible	No	Negligible
			Dredgers					
		Static gear fisheries	Beam and demersal trawlers					
			Pots and traps					
	Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species	Mobile gear fisheries	Fixed and drift nets	Medium	Small	Minor	No	Minor (not significant)
			Dredgers	Medium	Negligible	Negligible	No	Negligible
			Beam and demersal trawlers	Low	Negligible	Negligible	No	Negligible
		Static gear fisheries	Seiners	Low	Negligible	Negligible	No	Negligible
			Pots and traps	Medium	Negligible	Negligible	No	Negligible
			Fixed and drift nets	Low	Negligible	Negligible	No	Negligible
			Dredgers	Low	Small	Minor	No	

Phase	Potential Impact	Receptor	Gear type	Sensitivity	Magnitude	Significance	Additional mitigation	Residual significance
Operation Phase	Obstruction of navigation routes to commercial fishing grounds	Mobile gear fisheries	Beam and demersal trawlers					Minor (not significant)
		Static gear fisheries	Pots and traps					
			Fixed and drift nets					
	Loss and alteration of fishing grounds	Mobile gear fisheries	Dredgers	Medium	Small	Minor	No	Minor (not significant)
			Beam and demersal trawlers					
			Seiners					
		Static gear fisheries	Pots and traps	Low	Negligible	Negligible	No	Negligible
			Fixed and drift nets	Medium	Medium	Moderate	Yes	Minor (not significant)
	Displacement of commercial fishing activities	Mobile gear fisheries	Dredgers	Medium	Small	Minor	No	Minor (not significant)
			Beam and demersal trawlers					
			Seiners					

Phase	Potential Impact	Receptor	Gear type	Sensitivity	Magnitude	Significance	Additional mitigation	Residual significance
	Loss or damage to fishing gear	Static gear fisheries	Pots and traps	Low	Small	Negligible	No	Negligible
			Fixed and drift nets	Medium	Small	Minor	No	Minor (not significant)
		Mobile gear fisheries	Dredgers					
			Beam and demersal trawlers					
			Seiners					
		Static gear fisheries	Pots and traps					
			Fixed and drift nets					
	Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species	Mobile gear fisheries	Dredgers	Medium	Negligible	Negligible	No	Negligible
			Beam and demersal trawlers	Low	Negligible	Negligible	No	Negligible
			Seiners	Low	Negligible	Negligible	No	Negligible
		Static gear fisheries	Pots and traps	Medium	Negligible	Negligible	No	Negligible

Phase	Potential Impact	Receptor	Gear type	Sensitivity	Magnitude	Significance	Additional mitigation	Residual significance
			Fixed and drift nets	Low	Negligible	Negligible	No	Negligible
Maintenance Phase	Temporary loss and alteration of fishing grounds	Mobile gear fisheries	Dredgers	Medium	Negligible	Negligible	No	Negligible
			Beam and demersal trawlers	Low	Negligible	Negligible	No	Negligible
	Temporary displacement of commercial fishing activities		Seiners					
	Loss or damage to fishing gear	Static gear fisheries	Pots and traps	Medium	Negligible	Negligible	No	Negligible
	Obstruction of navigation routes to commercial fishing grounds		Fixed and drift nets					
	Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species							
Decommissioning Phase	Temporary loss and alteration of fishing grounds	Mobile gear fisheries	Dredgers	Medium	Small	Negligible	No	Negligible
			Beam and demersal trawlers	Low	Small	Negligible	No	Negligible
	Temporary displacement of							

Phase	Potential Impact	Receptor	Gear type	Sensitivity	Magnitude	Significance	Additional mitigation	Residual significance
	commercial fishing activities		Seiners					
	Loss or damage to fishing gear	Static gear fisheries	Pots and traps	Medium	Medium	Moderate	Yes	Minor (not significant)
	Obstruction of navigation routes to commercial fishing grounds		Fixed and drift nets					
	Indirect effects on commercial fisheries as a result of impacts on the ecology of commercial species							

8.13 Transboundary Effects

- 8.13.1 A transboundary effect is any significant adverse effect on the environment resulting from human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of another State.
- 8.13.2 All works associated with the Proposed Project fall within the UK jurisdiction (12 NM). Given the distance of the Proposed Project from French waters (approximately 25 km), no significant transboundary effects have been identified. Predicted disturbance from the Proposed Project is short term and local and are therefore not anticipated to be sufficient to influence commercial fisheries receptors outside UK waters substantially and subsequently cause transboundary effects.
- 8.13.3 Furthermore, this ES has concluded that with additional mitigation, no significant effects on any commercial fisheries receptors are to be expected in UK waters.

8.14 References

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