# XLinks Morocco-UK Power Project Preliminary Environmental Information Report Navigational Risk Assessment

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# Abbreviations Table

| Abbreviation | Definition |
|---|---|
| **AIS** | Automatic Identification System |
| **ALARP** | As Low as Reasonably Practicable |
| **ALB** | All-Weather Lifeboat |
| **AtoN** | Aid to Navigation |
| **CBRA** | Cable Burial Risk Assessment |
| **CD** | Chart Datum |
| **CEMP** | Construction Environmental Management Plan |
| **CLV** | Cable Lay Vessel |
| **COLREGS** | Convention on the International Regulations for Preventing Collisions at Sea |
| **DCO** | Development Consent Order |
| **DfT** | Department for Transport |
| **DWT** | Deadweight Tonnage |
| **EEZ** | European Economic Zone |
| **EIA** | Environmental Impact Assessment |
| **EMF** | Electric and Magnetic Fields |
| **ES** | Environmental Statement |
| **EU** | European Union |
| **FLO** | Fisheries Liaison Officer |
| **FOC** | Fibre Optic Cable |
| **FSA** | Formal Safety Assessment |
| **GT** | Gross Tonnage |
| **HDD** | Horizontal Directional Drilling |
| **HMCG** | His Majesty's Coastguard |
| **HVDC** | High Voltage Direct Current |
| **ILB** | Inshore Lifeboat |
| **IMO** | International Maritime Organization |
| **ITZ** | Inshore Traffic Zone |
| **JRCC** | Joint Rescue Coordination Centre |

| Abbreviation | Definition |
|---|---|
| **LOA** | Length Overall |
| **MAIB** | Marine Accident Investigation Branch |
| **MARPOL** | International Convention for the Prevention of Pollution from Ships |
| **MCA** | Maritime and Coastguard Agency |
| **MGN** | Marine Guidance Note |
| **MHWS** | Mean High Water Springs |
| **MMO** | Marine Management Organisation |
| **MoD** | Ministry of Defence |
| **MPCP** | Marine Pollution Contingency Plan |
| **MRCC** | Maritime Rescue Coordination Centre |
| **NAVTEX** | Navigational Telex |
| **NRA** | Navigational Risk Assessment |
| **NtM** | Notice to Mariners |
| **NTZ** | No Take Zone |
| **OWF** | Offshore Wind Farm |
| **PEIR** | Preliminary Environmental Information Report |
| **PEXA** | Practice Exercise Area |
| **PLL** | Potential Loss of Life |
| **RAM** | Restricted in Ability to Manoeuvre |
| **RNLI** | Royal National Lifeboat Institution |
| **ROV** | Remotely Operated Vehicle |
| **RYA** | Royal Yachting Association |
| **SAR** | Search and Rescue |
| **SOLAS** | International Convention for the Safety of Life at Sea |
| **TCE** | The Crown Estate |
| **TEU** | Twenty Foot Equivalent Units |
| **TSS** | Traffic Separation Scheme |
| **UK** | United Kingdom |
| **UKHO** | United Kingdom Hydrographic Office |
| **UNCLOS** | United Nations Convention on the Law of Sea |

| Abbreviation | Definition |
|---|---|
| **VHF** | Very High Frequency |
| **VMS** | Vessel Monitoring System |

# Units

| Abbreviation | Definition |
|---|---|
| **DWT** | Deadweight Tonnage |
| **km** | Kilometre(s) |
| **kV** | Kilovolt(s) |
| **m** | Metre(s) |
| **mG** | Milligauss |
| **mm** | Millimetre(s) |
| **nm** | Nautical Mile(s) |
| **µT** | Microtesla |

# 1 Introduction

## 1.1 Project Summary

Anatec Ltd were commissioned by Xlinks 1 Limited to undertake a Navigational Risk Assessment (NRA) for the United Kingdom (UK) elements of the Xlinks Morocco-UK Power Project. For ease of reference, the UK elements of the Xlinks Morocco-UK Power Project are referred to in this chapter as the 'Proposed Development'. Specifically, this appendix relates to the offshore elements of the Proposed Development seaward of Mean High Water Springs (MHWS).This NRA presents information on the Proposed Development relative to existing and estimated future navigational activity and forms a technical appendix to Volume 3, Chapter 5: Shipping and Navigation of the Preliminary Environmental Information Report (PEIR). The NRA presents preliminary findings at this stage and will be finalised alongside the final Environmental Statement (ES) chapter, with the next steps following the PEIR detailed in Section 12.4.

## 1.2 Objectives

The NRA methodology follows the Maritime and Coastguard Agency (MCA) Marine Guidance Note (MGN) 654 (Ref. i), but takes into consideration that the offshore elements of the Proposed Development consist of subsea cables only, and there is no surface infrastructure. The NRA undertaken for the Xlinks Morocco-UK Power Project includes:

- Overview of NRA methodology;
- Summary of consultation undertaken with shipping and navigation stakeholders to date;
- Lessons learnt from previous subsea cable projects;
- Summary of the project description relevant to shipping and navigation;
- Baseline characterisation of the existing environment;
- Discussion of potential impacts on navigation;
- Future case marine traffic characterisation;
- Assessment of navigational risk (following the Formal Safety Assessment (FSA) process); and
- Outline of embedded mitigation measures.

Potential hazards are considered for each of the following Proposed Development phases:

- Construction
- Operation
- normal operation
- repairs
- Decommissioning
- cables left in-situ
- cables removed.

The assessment of the Proposed Development is based on a parameter-based Project Design Envelope (PDE) approach, in accordance with industry best practice. This approach allows for a project to be assessed on the basis of maximum project design parameters (i.e., the worst-case scenario) and includes conservative assumptions to form a Maximum Design Scenario (MDS) which is considered and assessed for all risks. Further details on the design envelope are provided in Volume 1, Chapter 3: Project Description of the PEIR.

The shipping and navigation baseline and risk assessment has been undertaken based upon the information available and responses received at the time of preparation.

# 2 Project Overview

## 2.1 Project Location

The Offshore Cable Corridor within UK waters is approximately 370 km in length, running from the landfall area at Cornborough Range within Bideford Bay, passing 23 nm to the west of the Isles of Scilly and south across the entrance to the English Channel, to the boundary with French Waters.

The study area for the assessment of baseline data is defined as a five nautical mile (nm) buffer around the Offshore Cable Corridor within UK waters. This is standard practice and is sufficient to characterise the shipping activity and navigational features close to the Offshore Cable Corridor and to encompass any vessel traffic that may be impacted by the cable and associated operations, while also remaining project-specific in terms of the vessel activity and navigational features that it captures. Where navigational features have been identified outside of the study area, this is done for context and wider discussion purposes. The study area has been presented within introductory stakeholder meetings and will continue to be consulted on, during consultations following the PEIR stage.

The study area is presented in Figure 2.1.

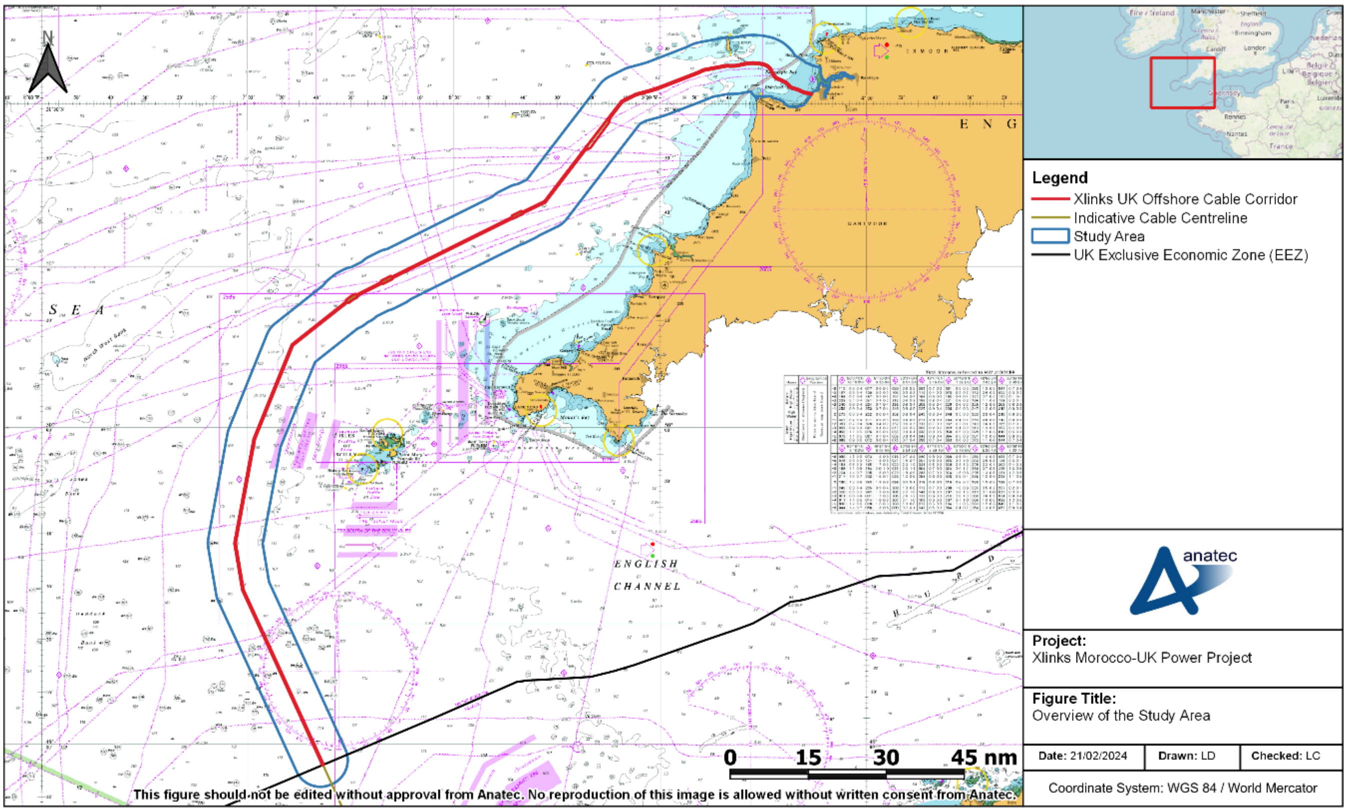



**Figure 2.1 Overview of the Study Area**

## 2.2 Details of Works

### 2.2.1 Project Design

A summary of project parameters is shown in Table 2.1. Further details on the Proposed Development are presented in Volume 1, Chapter 3: Project Description of the PEIR.

## Table 2.1 Summary of Project Parameters

| Aspect | Parameter | Value | Notes |
|---|---|---|---|
| Offshore Cable corridor | Length | 370 km | |
| | Width | 500 m | Extending up to 1500 m in some locations to provision for greater micro-routing flexibility e.g., at crossings of existing cables). |
| Offshore Cable Design | Number of power cables | 4 | |
| | Number of cable bundles | 2 | Each bundle consists of two power cables and one FOC |
| | Diameter of power cable | 175 mm | |
| | Voltage | 525 kilovolts (kV) High Voltage Direct Current (HVDC) | |
| | Cable Electromagnetic Field (EMF) | 79 microtesla (µT) (790 milligauss (mG)) | |
| | Number of fibre optic cables (FOC) | 2 | One per cable bundle |
| | Diameter of FOC | 35 – 40 mm | |
| Cable Protection | Number of trenches | 2 | |
| | Target burial depth | 1.5 m | |
| | Trench width | 0.5 – 1.5 m | |
| | Trench spacing | 50 – 180 m | May increase to 250 m in certain areas |
| | Length of cable requiring external protection | 150 km | Based on provisional Cable Burial Risk Assessment (CBRA) |
| | Maximum height of external protection above seabed | 1.0 m | Above seabed cable protection – rock placement – is last |

| Aspect | Parameter | Value | Notes |
|---|---|---|---|
| | | | resort where in-trench protection is not sufficient. |
| | Cable crossings requiring additional protection | 21 | |
| | Maximum height of cable crossing protection | 1.4 m | |
| Horizontal Directional Drilling (HDD) | Number of HDD boreholes | 4 | |
| | Distance offshore at exit points | 540 m or 1360 m | Options considered at both distances |
| | Water depth at exit points | 6 m at 540 m offshore<br>9 m at 1360 m offshore | |

### 2.2.2 Cable Construction Works

Details of construction activities are presented in Volume 1, Chapter 3: Project Description of the PEIR. Key construction activities include the following:

- HDD works;
- Pre-lay activities;
- Cable laying;
- Burial and protection activities; and
- Crossing the cable over existing in-service subsea cables.

Offshore installation works for Bipole 1 (the first cable bundle) would be scheduled to begin in 2028 and it is anticipated that these works would be completed by the end of 2029. For Bipole 2 (second cable bundle), works would begin in 2030 and are also anticipated to be completed in 2031. The landfall HDD works would be provisionally scheduled to be undertaken in advance of cable laying. Pre-lay works (route preparation works) would take place ahead of cable lay activities, and these may commence in 2027.

Cable installation works would be carried out on a 24 hours per day, 7 days per week basis, unless interrupted by weather or other disruptions. It is anticipated that all construction phase activities would avoid the winter season to minimise weather disruption.

Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be up to a few days apart (noting that burial and protection activities would take longer to complete than the cable lay). Guard vessels would be provisioned for any periods after the cable has been laid, but has not yet been buried or protected, to minimise the risk of interactions with other marine traffic.

#### 2.2.2.1 HDD Works

HDD works are expected to be carried out in proximity to the cable landfall at Cornborough Range in advance of the cable lay, and may involve the use of up to two jack-up vessels. The HDD works will involve the drilling of holes seaward from land, to agreed 'punch out' locations, where the drill emerges from the seabed. Excavated trenches may be required around the exit points, to remove sediment from the seabed (undertaken using either back-hoe dredger (long arm barge mounted excavator), mass flow excavation (MFE) or a Trailing Suction Hopper Dredger (TSHD)) excavating an area of approximately 15 m x 15 m around the exit points. Following the drilling of the boreholes, ducting will be installed in each hole. This may be carried out using either a pushed or pulled installation. Both methods would require vessels to carry out the operation, however a pulled installation would require additional vessels either to tow the duct into position or to pull the duct through the borehole.

#### 2.2.2.2 Pre-lay Activities

Marine investigation surveys have already been carried out on the Offshore Cable Corridor, with the potential for further surveys to be required prior to the cable lay. Route preparation works will also be required in advance of the cable lay, involving the clearance of debris, sandwaves and boulders from the cable route.

To remove debris including lost or discarded fishing gear, a pre-lay grapnel run would be carried out, involving a vessel towing a grapnel hook of 1 m width and 1 m penetration depth along the path of both cable bundles. There are also 28 crossings of out of service cables along the Offshore Cable Corridor. Subject to discussions with the cable owners, these would be cut, with a section recovered for onshore disposal.

To facilitate cable burial, the flattening of the seabed using either mass flow excavation or surface ploughing may be necessary, where sandwaves, large ripples and other areas of mobile sediment cannot be avoided.

A further pre-lay surface plough may also be required to remove boulders from the cable route to increase the probability of successful burial. It is anticipated that up to 200 km of the route will require boulder removal. Depending on the timings, and the local seabed character this final pre-lay plough can also be used to perform trench cutting to enable cable burial. These two steps may be carried out independently, or simultaneously.

#### 2.2.2.3 Cable Lay

Cable lay will take place from Cable Lay Vessels (CLVs). Each CLV would carry three turntables, to install the three cables (including FOC) within a single cable bundle simultaneously, with cables bundled together and fed overboard at the stern of the vessels. Two cable lay vessels are expected to be used (in sequence) for each cable bundle. It is anticipated that burial and protection works will take place concurrently, with burial works commencing shortly after cable lay. Guard vessels will be deployed during periods when the cable has been laid but protection or burial works are yet to be carried out.

#### 2.2.2.4 Burial and Protection Works

Mechanical trenching carried out by a remotely operated vehicle (ROV) is anticipated to be the main burial method in UK waters. Trench jetting is unsuitable for the majority of the Offshore Cable Corridor but may be used as a remedial measure following mechanical trenching. Trenching is typically carried out at a rate of 50 – 400 m per hour.

It is anticipated that burial may not be possible, or possible to a full 1.5 m target depth, along 150 km of the Offshore Cable Corridor. Where burial is not be possible, additional rock protection will be installed, with height up to 1 m above the seabed, and width up to 7 m. Any rock protection installed would be designed in line with best practice, including designing the protection to be overtrawlable in order to avoid fishing gear snagging.

External protection will also be required at crossings of the 21 in-service cables identified along the Offshore Cable Corridor. Cable crossings would involve rock protection or concrete mattresses above the existing cable to create separation between the two cables, with further rock or concrete protection installed to protect the Proposed Development. The maximum height of external protection would be 1.4 m, with crossings being up to 500 m in length and 7 m in width (footprint dimensions dependent on angle of crossing).

#### 2.2.2.5 Construction Programme

Pre-lay works such as route clearance and boulder removal may take place in 2027 ahead of cable lay and protection works.

Cable lay works for Bipole 1 (first cable bundle) are scheduled to begin in Q1 2028 and it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a section laid in 2029.

Dates are indicative at this time, and may be influenced by e.g. weather limitations of the CLV.

For Bipole 2 (second cable bundle), offshore works would begin in 2030 and would follow a similar schedule. The landfall HDD works are provisionally scheduled to be undertaken in advance of cable laying.

Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

- Vessels Required for Cable Installation

Table 2.2 presents the indicative number of vessels anticipated to be required for the installation of the Proposed Development. In addition to the vessels shown, a number of tugs, workboats and survey vessels may be required to support the cable installation (and pre-lay works).

**Table 2.2 Construction Vessel Numbers**

| Vessel Type | Number Required |
|---|---|
| CLV | One (Two at changeovers) |
| Trenching Vessels | Four |
| Guard Vessels | 20 |
| Rock Placement Vessels | Two |
| Jack-up/Multi-cat Vessels (for HDD works) | Two |

### 2.2.3 Operational Phase

During the operational phase, cable inspection surveys will be carried out to ensure the cable protection measures deployed remain in place. It is anticipated that surveys would be carried out up to once per year for the first five years of the operational phase, then approximately once every five years over the remainder of the expected 50 year life of the cables. Surveys would be undertaken using a single survey vessel, equipped with an ROV and geophysical survey equipment.

Unplanned maintenance or repair works may be required during the operational phase, should the cable become exposed over time, or if damage to the cable is identified. Repaired sections of the cables may have a greater footprint than the original cable, however these would be expected to fall within the Offshore Cable Corridor.

### 2.2.4 Decommissioning Phase

Decommissioning of the installed cable will take place after the operational phase is complete. The exact methodology of these works will be determined prior to decommissioning in a timely manner, with an Offshore Decommissioning Plan developed in due course.

Current best practice is to de-energise the cable, and secure it to be left in-situ on the seabed. Should full or partial removal of the cable be necessary, it is anticipated that methods for this would be broadly similar to those used in the construction phase. The impact assessment presented in Section 10 considers both options for decommissioning.

## 2.3 Maximum Design Scenario

Based on the information provided, the maximum design scenario relevant to shipping and navigation considered in the impact assessment (Section 10) is presented in Volume 3, Chapter 5: Shipping and Navigation of the PEIR. This ensures a conservative assessment of a worst case scenario.

# 3 Guidance and Legislation

## 3.1 Legislation

The following legislation has been considered in this assessment:

- United Nations Convention on the Law of the Sea (UNCLOS) (Ref. ii);
- International Regulations for Preventing Collisions at Sea (COLREGS) (Ref. iii);
- Merchant Shipping (Vessel Traffic Monitoring and Reporting Requirements) Regulations 2004 (as amended in 2011) (Ref. iv); and
- Chapter V, Safety of Navigation, of the Annex to the International Convention for the Safety of Life at Sea (SOLAS) (Ref. v).

## 3.2 Primary Guidance

Impacts on shipping and navigation receptors are assessed using an FSA compliant with International Maritime Organization (IMO) guidelines. The primary guidance document used during the assessment is therefore given below:

- *Revised Guidelines for FSA for use in the IMO Rule-Making Process* (Ref vi).

## 3.3 Secondary Guidance

The secondary guidance documents used during the assessment are listed below:

- *Marine Guidance Note (MGN) 654 (Merchant and Fishing) Safety of Navigation: Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response* and its annexes[1] (Ref vii); and
- *MGN 661 (Merchant and Fishing) Navigation – Safe and Responsible Anchoring and Fishing Practices* (Ref. viii)

[1] Although this guidance is focused on offshore renewables, it highlights issues to be taken into consideration when assessing the effects of offshore developments on navigational safety and includes guidance on cable protection and burial within UK waters.

# 4 Navigational Risk Assessment Methodology

## 4.1 FSA Methodology

A shipping and navigation user can only be exposed to a risk caused by a hazard if there is a pathway through which a risk can be transmitted between the source activity and the user. In cases where a user is exposed to a risk, the overall significance of risk to the user is determined. This process incorporates a degree of subjectivity. The assessments presented for shipping and navigation users have considered the following criteria:

- Baseline data and assessment;
- Expert opinion;
- Level of stakeholder concern; and
- Number of transits of specific vessels and/or vessel types.

## 4.2 FSA Process

The IMO FSA process approved under the IMO circular MSC-MEPC.2/Circ.12/Rev.2 (Ref. vi) has been applied within this assessment. This is a structured and systematic methodology based on risk analysis and cost benefit analysis (if applicable) to reduce impacts to As Low as Reasonably Practicable (ALARP). There are five basic steps within this process (this assessment focuses on Steps 1-3):

- Step 1: Identification of hazards (a list of all relevant accident scenarios with potential causes and outcomes);
- Step 2: Assessment of risks (evaluation of risk factors);
- Step 3: Risk control options (devising regulatory measures to control and reduce the identified risks);
- Step 4: Cost benefit analysis (determining cost effectiveness of risk control measures); and
- Step 5: Recommendations for decision-making (information about the hazards, their associated risks and the cost effectiveness of alternative risk control measures).

A flow diagram of the FSA methodology applied is presented in Figure 4.1.


**Figure 4.1 Formal Safety Assessment Process**

The FSA assigns each impact a "severity of consequence" and "frequency of occurrence" to evaluate the significance during the Construction, Operational and Decommissioning phases of the proposed development.

Table 4.1 and Table 4.2 identify how the severity of consequence and the frequency of occurrence has been defined, respectively.

**Table 4.1 Severity of Consequence Ranking Definitions**

| Rank | Description | Definition | | | |
|---|---|---|---|---|---|
| | | People | Property | Environment | Business |
| 1 | Negligible | No perceptible risk | No perceptible risk | No perceptible risk | No perceptible risk |
| 2 | Minor | Slight injury(ies) | Minor damage to property, i.e., superficial damage | Tier 1[2] local assistance required | Minor reputational risks – limited to users |
| 3 | Moderate | Multiple minor or single serious injury | Damage not critical to operations | Tier 2[3] limited external assistance required | Local reputational risks |

[2] Tier 1 – Local (within the capability of one local authority, offshore installation operator or harbour authority)
[3] Tier 2 – Regional (beyond the capability of one local authority or requires additional contracted response from offshore operator or from ports or harbours)

| Rank | Description | Definition | | | |
|---|---|---|---|---|---|
| | | People | Property | Environment | Business |
| 4 | Serious | Multiple serious injuries or single fatality | Damage resulting in critical risk to operations | Tier 2 regional assistance required | National reputational risks |
| 5 | Major | More than one fatality | Total loss of property | Tier 3[4] national assistance required | International reputational risks |

### Table 4.2 Frequency of Occurrence Ranking Definitions

| Rank | Description | Definition |
|---|---|---|
| 1 | Negligible | Less than 1 occurrence per 10,000 years |
| 2 | Extremely unlikely | 1 per 100 to 10,000 years |
| 3 | Remote | 1 per 10 to 100 years |
| 4 | Reasonably probable | 1 per 1 to 10 years |
| 5 | Frequent | Yearly |

The severity of consequence and frequency of occurrence are then used to define the significance of risk via a tolerability matrix approach as shown in Table 4.3. The significance of risk is defined as Broadly Acceptable (low risk), Tolerable (intermediate risk) or Unacceptable (high risk).

[4] Tier 3 – National (requires national resources coordinated by the MCA for a shipping incident and the operator for an offshore installation incident)

### Table 4.3 Tolerability Matrix and Risk Rankings

| | | | | | | |
|---|---|---|---|---|---|---|
| **Severity of Consequence** | 5 | | | | | |
| | 4 | | | | | |
| | 3 | | | | | |
| | 2 | | | | | |
| | 1 | | | | | |
| | | 1 | 2 | 3 | 4 | 5 |
| | | **Frequency of occurrence** | | | | |

| | |
|---|---|
| | Unacceptable (high risk) |
| | Tolerable (intermediate risk) |
| | Broadly Acceptable (low risk) |

Once identified, the significance of risk will be assessed to ensure it is ALARP. Further risk control measures may be required to further mitigate a hazard in accordance with the ALARP principles. Unacceptable risks are not considered to be ALARP.

For the purposes of this assessment, impacts assessed to be ‘broadly acceptable’ or ‘tolerable’ (if ALARP) are considered to be not significant in terms of the EIA Regulations. Impacts assessed to be ‘unacceptable’ are considered significant in terms of the EIA Regulations.

# 5 Data Sources

The data sources used to inform this assessment are listed below, and described in detail in the following sections:

- Automatic Identification System (AIS) data;
- Marine Management Organisation (MMO) satellite fishing data;
- Marine Accident Investigation Branch (MAIB) incident data;
- Royal National Lifeboat Institution (RNLI) incident data;
- UK Department for Transport (DfT) Search and Rescue (SAR) Helicopter Taskings;
- United Kingdom Hydrographic Office (UKHO) Admiralty Charts;
- Admiralty Sailing Directions, West Coasts of England and Wales NP37;
- Marine aggregate dredging areas (The Crown Estate (TCE)); and
- Offshore wind farm (OWF) lease boundaries and export cable corridors (TCE).

Data sources used will continue to be presented and agreed during consultation and updated where necessary for the final ES.

## 5.1 AIS Data

The baseline shipping analysis is based on an up-to-date data set consisting of 12-months of AIS data, covering the period from September 2022 to August 2023.

AIS equipment is required to be fitted on all vessels of 300 Gross Tonnage (GT) and upwards engaged on international voyages, cargo vessels of 500 GT and upwards not engaged on international voyages, and passenger vessels irrespective of size, built on or after 1$^{st}$ July 2002. Under the Merchant Shipping (Vessel Traffic Monitoring and Reporting Requirements) Regulations 2004 (Ref. iv) (as amended in 2011), fishing vessels of 15 m or more in length overall (LOA), UK registered or operating in UK waters, must be fitted with an approved (Class A) AIS (regulation 8A). In addition, all European Union (EU) registered fishing vessels of length 15 m and above are required to carry AIS equipment by EU Directive. Smaller fishing vessels (below 15 m) as well as recreational craft are not required to carry AIS, but a proportion does so voluntarily. It is also noted that military vessels are not obligated to broadcast on AIS at all times. Therefore, these vessels (e.g., fishing, recreational and military vessels) will be under-reported within the AIS data.

The reporting interval between position reports for a given vessel typically ranges between a few seconds and up to three minutes, depending on its speed and navigational status (less frequent for anchored and moored vessels).

## 5.2 Satellite Fishing Data

The MMO provides Vessel Monitoring Service (VMS) satellite data, covering all fishing vessels of 15 m or greater, in a density-based grid for the UK. Fishing data from 2020, which was latest available dataset, was reviewed.

## 5.3 Incident Data

The baseline assessment includes an analysis of incident data from the RNLI and MAIB.

The RNLI logs details of incidents it responds to, including the cause of the incident. Data was available for 2013 to 2022.

All UK commercial vessels are required to report accidents to the MAIB. Non-UK vessels do not have to report accidents unless they are in a UK port or are inside the UK 12 nm territorial waters and carrying passengers to a UK port. There are no requirements for non-commercial recreational craft to report accidents to the MAIB. The MAIB will record details of significant accidents of which they are notified by bodies such His Majesty's Coastguard (HMCG), or by monitoring news and other information sources for relevant accidents. When reporting the location of incidents, the MAIB aim for 97% accuracy. Data was available from 2012 to 2021.

The DfT UK civilian Search and Rescue (SAR) helicopter taskings between 2015 and 2023 were used to review maritime incidents in proximity to the cable corridor.

## 5.4 UK Admiralty Charts

Admiralty charts are nautical charts issued by the UKHO. Charts have been used to identify the key navigational features in proximity to the Proposed Development. The main charts used in this study were chart numbers 1121, 1123, 1164, 1178, 1179, 2565, 2649 and 2675.

## 5.5 Admiralty Sailing Directions

Admiralty Sailing Directions, also known as Pilot Books, are used by mariners to identify established routes when steaming on passage, as well as coastline features, anchorages, ports, etc. The "West Coasts of England and Wales Pilot" (Ref. ix) has been used in this assessment to identify the significant navigational features in the vicinity of the cable corridor.

## 5.6 Aggregate Dredging Areas

Marine aggregate dredging areas were obtained from TCE. TCE are responsible for licensing capital and maintenance dredging projects which enable navigational channels to be created and maintained on the UK seabed. The latest available data is from January 2023.

## 5.7 Offshore Wind Farms

The OWF boundaries, export cable corridors and potential areas of extension which are in proximity to the Proposed Development were obtained from TCE. The latest available layer is from January 2023.

## 5.8 Data Limitations

### 5.8.1 AIS Data

It is assumed that all vessels under an obligation to broadcast information via AIS have done so. It has also been assumed that that the details broadcast via AIS (such as vessel type and dimensions) are accurate, unless clear evidence to the contrary was identified. There may be occasional range limitations in tracking certain vessels, especially smaller (Class B AIS) vessels in winter. However, it is not considered that the comprehensiveness of the AIS data compromises confidence in the assessment.

Since the vessel traffic data for the study area consists of AIS only, the data has limitations associated with non-AIS vessels, such as recreational vessels and fishing vessels of less than 15 m in length. Therefore, additional data sources such as VMS data have been considered when assessing the baseline environment. Consultation will also be undertaken to provide further information on small vessel activity to inform the ES.

Military vessels are not required to broadcast on AIS and may therefore be under-represented. It is assumed that the Ministry of Defence (MoD) will be consulted as part of the consenting programme.

### 5.8.2 Historical Incident Data

Although all UK commercial vessels are required to report incidents to the MAIB, this is not mandatory for non-UK vessels unless they are in a UK port, within territorial waters or carrying passengers to a UK port. There are also no requirements for non-commercial recreational craft to report incidents to the MAIB. Nevertheless, the MAIB incident database is considered to be a suitable source for the characterisation of historical incidents and adequate for the assessment.

The RNLI incident data cannot be considered comprehensive of all incidents in the Study Area. Although hoax and false alarms are excluded, any incident to which a RNLI resource was not mobilised has not been accounted for in this dataset. Nevertheless, the RNLI incident data is still considered to be an appropriate resource for the characterisation of historical incidents and adequate for the assessment.

### 5.8.3 Admiralty Charts

The Admiralty Charts published by the UKHO are updated periodically, and therefore the information shown may not reflect the real-time features within the region with total accuracy. Taking into account consultation undertaken, the characterisation of navigational features is considered to be suitably comprehensive and adequate for the assessment. For aids to navigation, only those charted and considered key to establishing the shipping and navigation baseline are shown.

# 6 Navigational Features

## 6.1 Introduction

The following sections present the navigational features in proximity to the Proposed Development. The following elements are considered:

- Ports, harbours and related facilities;
- IMO routeing measures;
- Charted wrecks;
- Aggregate dredging areas;
- Offshore wind farms (OWF);
- Military practice areas; and
- Subsea cables.

An overview of the navigational features is presented in Figure 6.1.

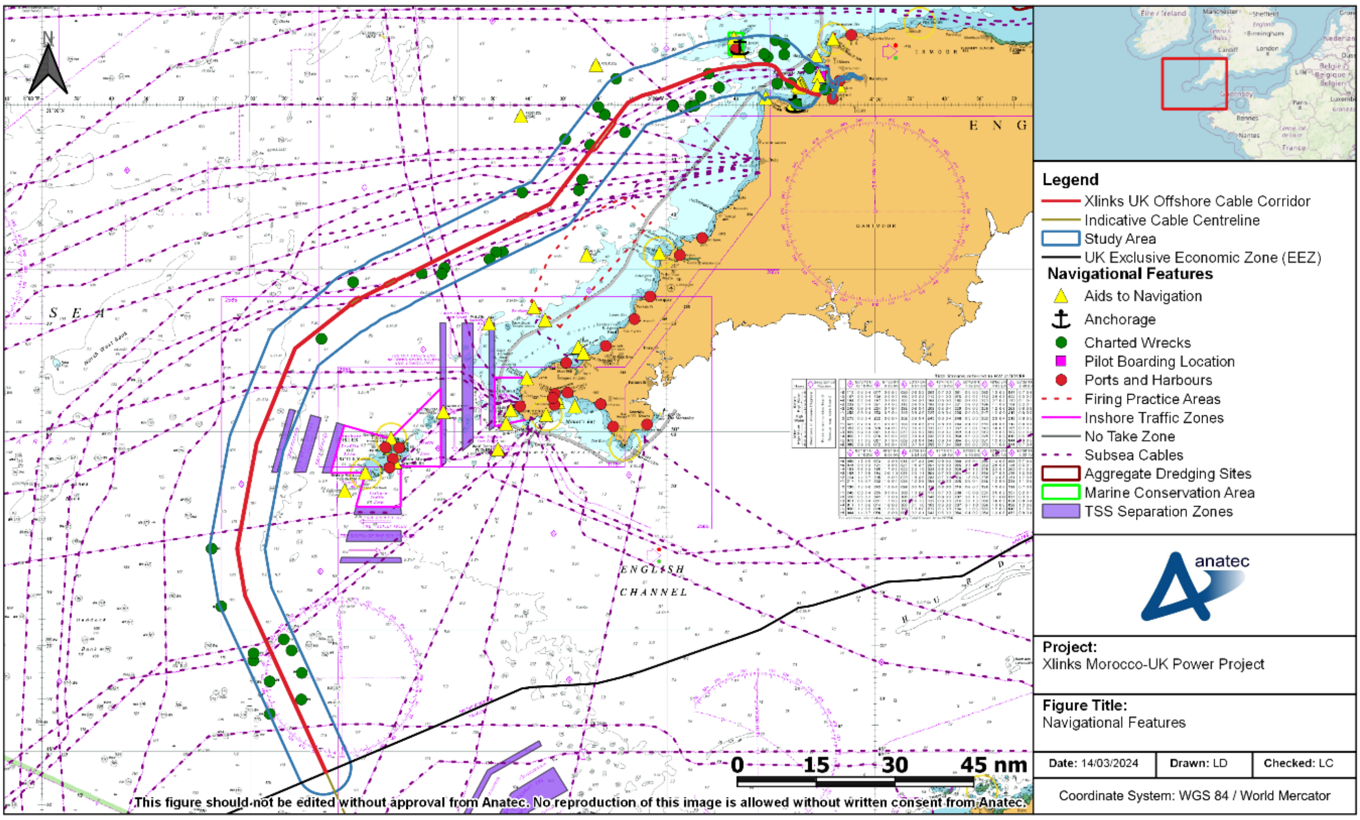
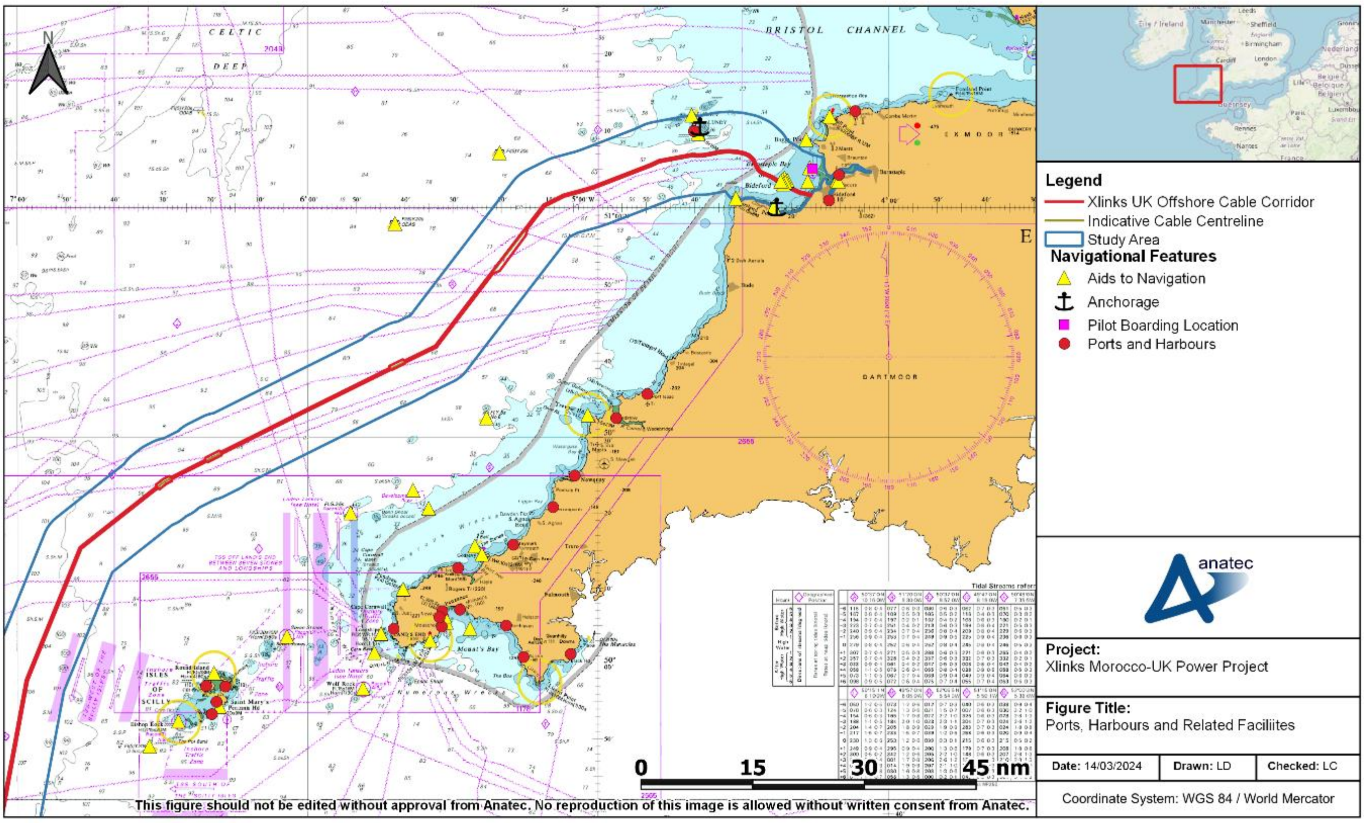



Figure 6.1 Navigational Features

## 6.2 Ports, Harbours and Related Facilities

Figure 6.2 presents the locations of ports, harbours and related facilities in proximity to the Proposed Development.




### Figure 6.2 Ports, Harbours and Related Facilities

Numerous ports and harbours are located along the south west coast of England. The nearest to the Offshore Cable Corridor are Bideford, Appledore and Yelland, accessed through the rivers Torridge and Taw respectively. At the Port of Bideford, commercial vessels up to 96 m in length are accepted, whereas Appledore is mostly frequented by fishing and recreational vessels. Yelland is a largely disused quay formerly used by a power station which operated alongside the river.

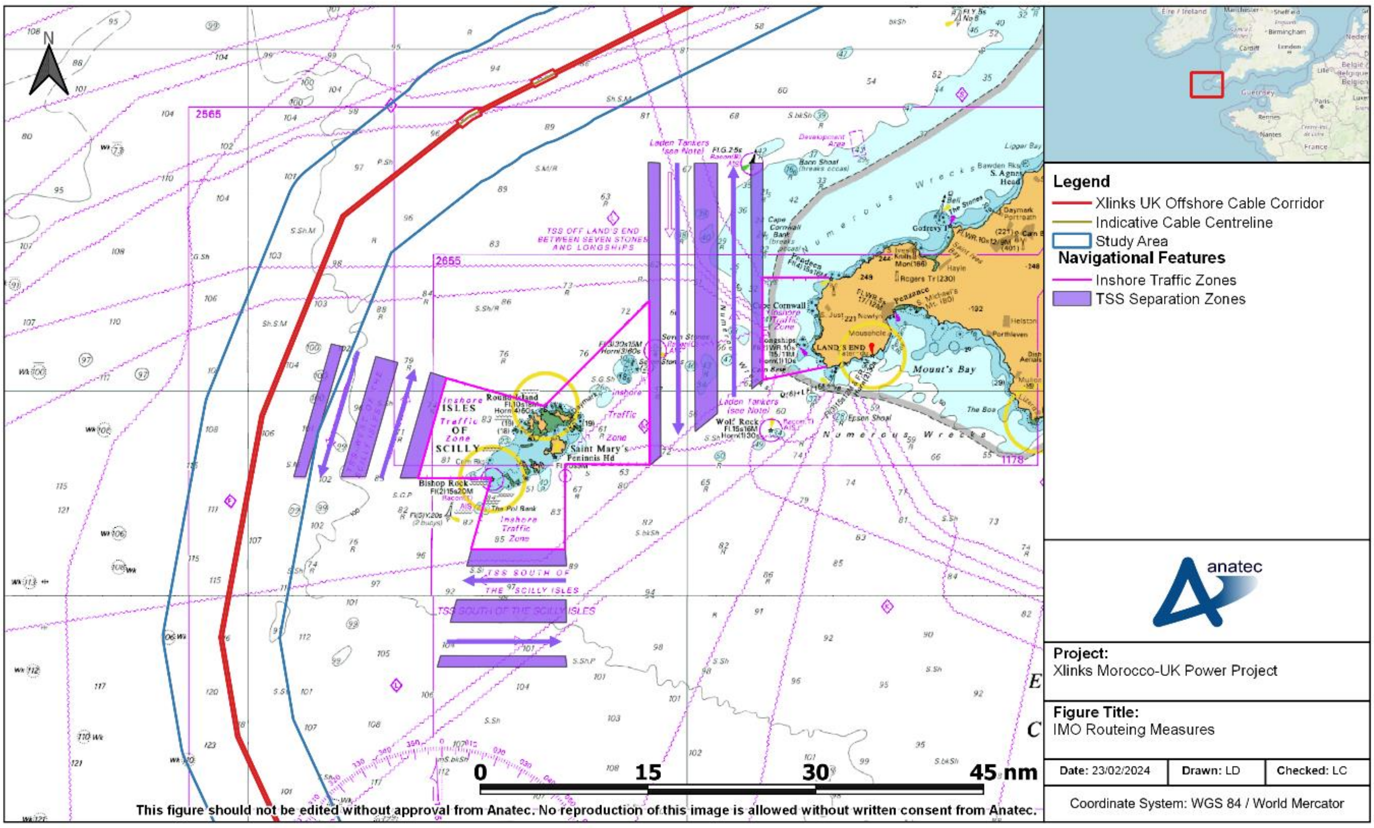
Other harbours along the coast include Padstow, Port Isaac, Newquay, Perranporth, Portreath, St Ives, Penzance and Porth Mellin. In addition to the harbours on the English mainland, there are also a number of harbours on the Isles of Scilly. Due to the international nature of the shipping in the area, ports of relevance to the shipping traffic may be further afield, such as Southampton, Rotterdam and a number of ports on the north coast of France.

There are two charted anchorages in the vicinity of the Offshore Cable Corridor; Lundy Road east of Lundy Island, 3.6 nm to the north of the Offshore Cable Corridor and Clovelly Road 4.8 nm southwest of the cable landfall.

The closest pilot boarding station is 2.6 nm north of the landfall, near Bideford Fairway Light Buoy. Pilotage provides assistance to vessels crossing the Bideford Bar due to the danger of shifting sands. It is compulsory for all vessels over 350 GT transiting to Appledore, Bideford and Yelland. Entry is only advised at certain times of day. Prior to pilotage, anchoring is advisable in Bideford Bay as well as Lundy Road.

## 6.3 IMO Routeing Measures

Figure 6.3 presents the locations of IMO routeing measures in proximity to the Proposed Development.




### Figure 6.3 IMO Routeing Measures

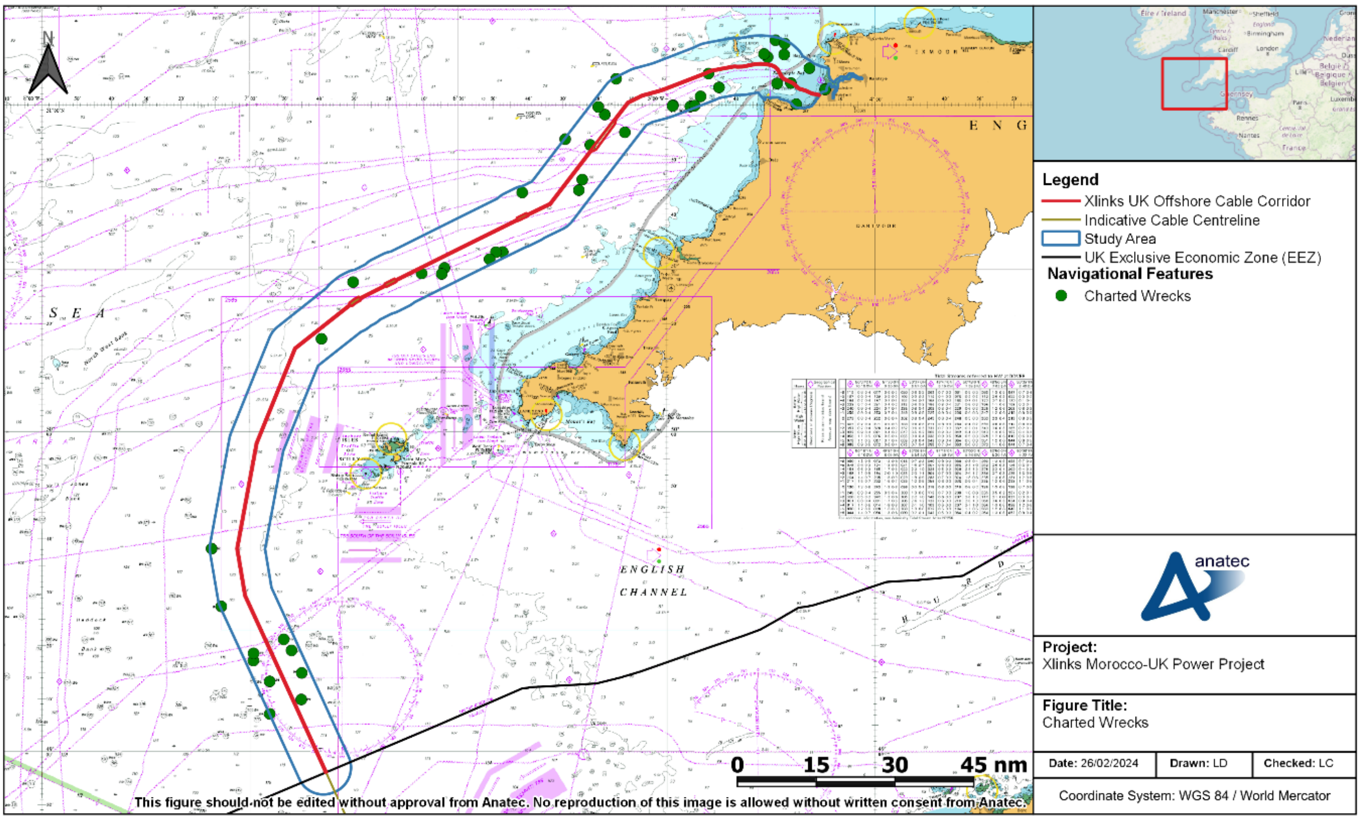
The main routeing measures in proximity to the Proposed Development are the Traffic Separation Schemes (TSSs) in place around the Isles of Scilly.

There are three sets of TSS lanes around the Isles of Scilly, located to the west, to the south and to the east between the Isles of Scilly and Land's End on the UK mainland. A chart note warns that laden tankers over 10,000 GT should keep a safe clearance of 3 nm to Wolf Rock, located at the south of the TSS off Land's End, and that such vessels should not use the TSS in restricted visibility or other adverse weather conditions. The closest TSS to the Proposed Development is located approximately 5 nm to the east of the Offshore Cable Corridor, to the west of the Isles of Scilly.

There are also Inshore Traffic Zones (ITZs) landward of the TSSs, around the Isles of Scilly and off the coast of Cornwall. Vessels may only enter these zones if they are recreational craft, vessels less than 20 m in length, or engaged in fishing. Vessels can also enter the ITZ to avoid immediate danger.

## 6.4 Charted Wrecks

Figure 6.4 presents the locations of charted wrecks in proximity to the Proposed Development.

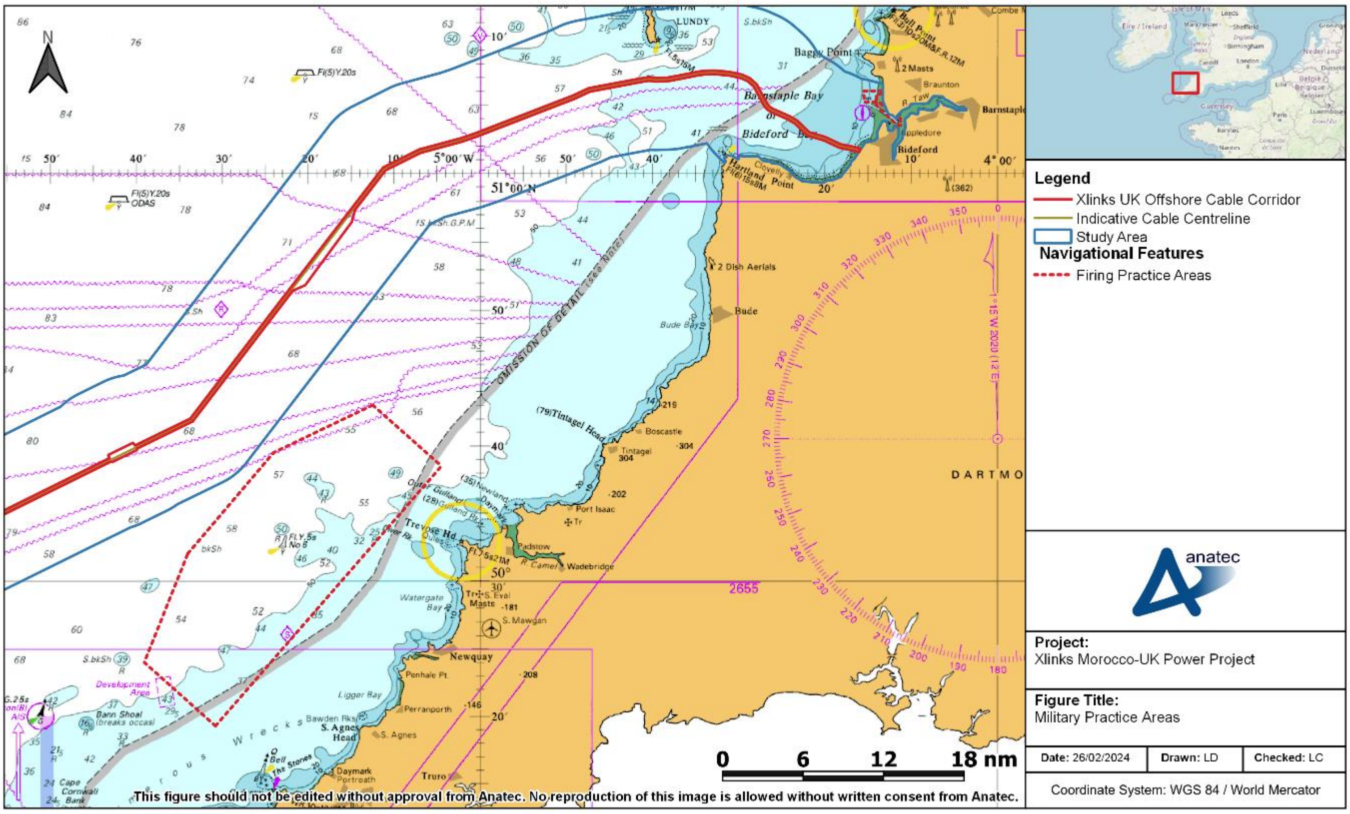



### Figure 6.4 Charted Wrecks

There are a number of charted wrecks located throughout the study area, with none located within the Offshore Cable Corridor (noting that archaeological and heritage features were avoided when developing the route; c.f. Volume 3, Chapter 7: Marine Archaeology and Cultural Heritage, of the PEIR). The closest wreck to the Offshore Cable Corridor is located just outside of its boundary, within Bideford Bay.

## 6.5 Military Practice Areas

Figure 6.5 presents the locations of military practice areas in proximity to the Proposed Development.




### Figure 6.5 Military Practice Areas

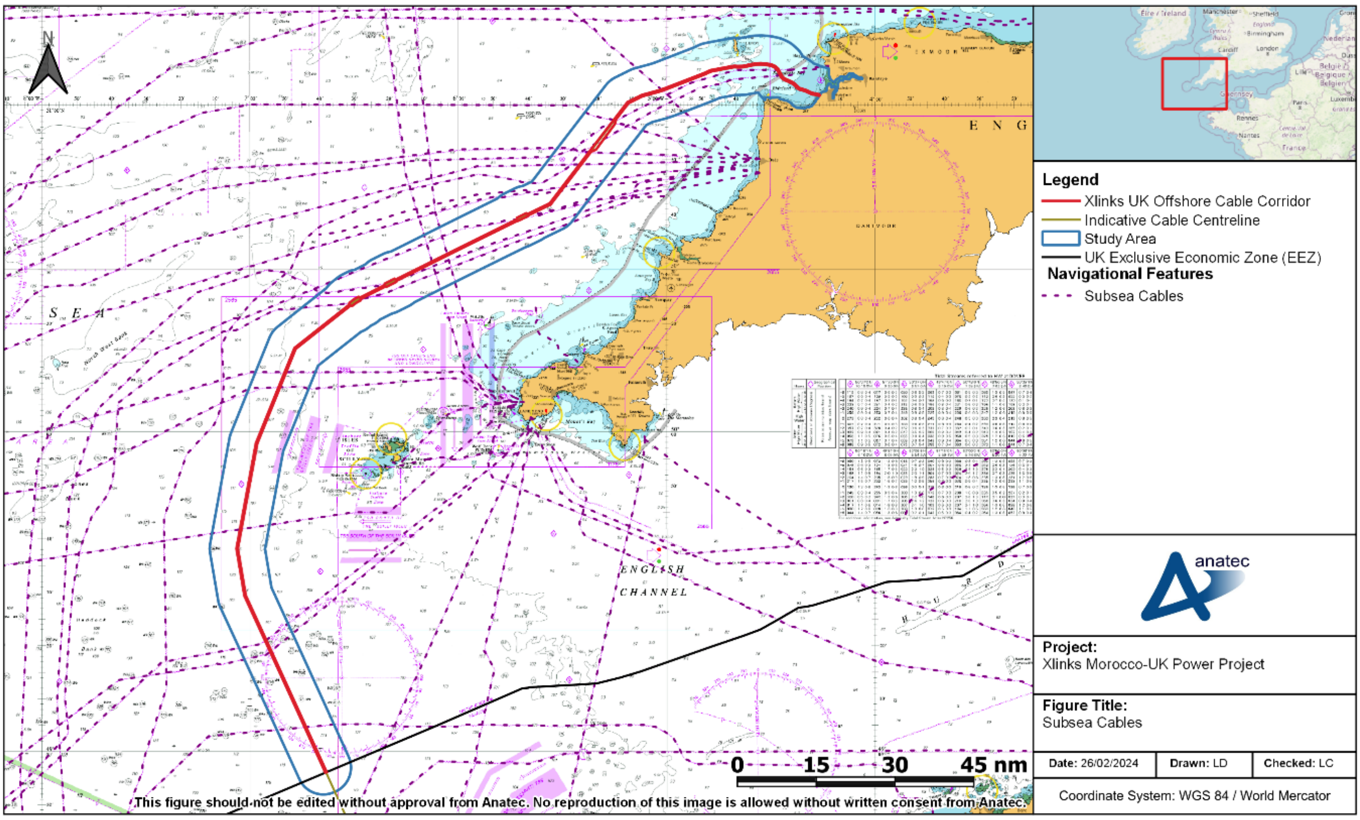
Three firing practice areas are located within the vicinity of the Offshore Cable Corridor, the nearest being 3.5 nm north of the cable landfall. A larger firing practice area exists west of Trevose Head covering an area of 230 $nm^2$ but does not intersect the study area. These firing practice areas are operated using a clear range procedure, meaning that firing and exercises take place when the areas are considered to be clear of shipping. No restriction is placed on the right to transit the firing practice areas at any time.

In addition to the firing practice areas, there are four military practice exercise areas (PEXAs) overlapping the Offshore Cable Corridor, not shown on charts. These include D064A, D064B and D064C, which are used by the Air Force, and X5001, the Southern Fleet Exercise Area, which is used by the Navy. X5001 overlaps the majority of the Offshore Cable Corridor, including the areas north and southeast of the Isles of Scilly.

Specific consultations with the MoD will be undertaken following issue of the PEIR.

## 6.6 Subsea Cables

Figure 6.6 presents the locations of charted subsea cables in proximity to the Proposed Development.




### Figure 6.6 Subsea Cables

As can be seen, there are numerous charted subsea cables in the vicinity of the Offshore Cable Corridor. As noted in Volume 1, Chapter 3: Project Description of the PEIR, there are 21 anticipated crossings of in-service cables within UK waters, with the majority of these intersections occurring towards the north of the study area associated with cables extending westwards from Bude. It is advised that vessels should not anchor or trawl in the vicinity of subsea cables.

## 6.7 Offshore Wind Farms

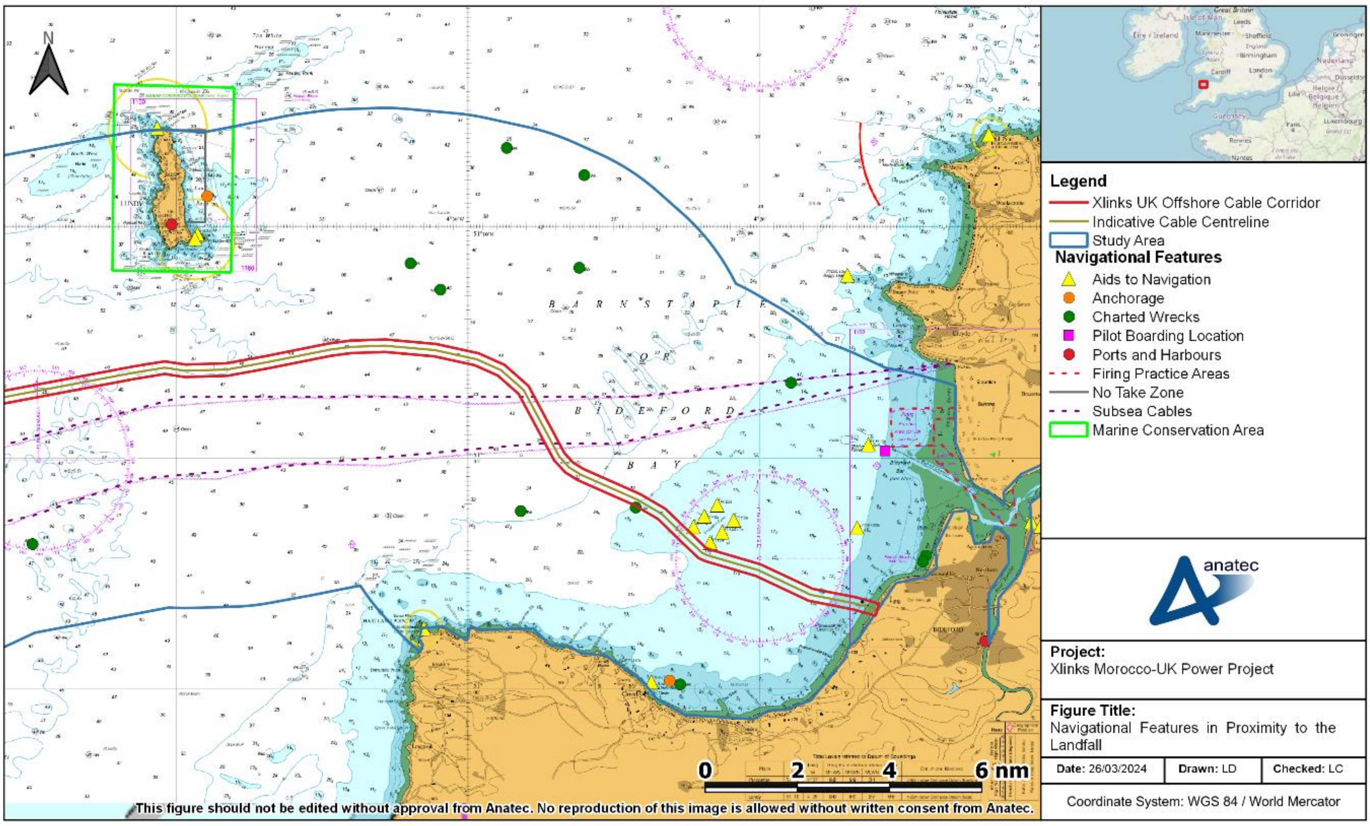
There are no operational or under construction OWFs in the vicinity of the Offshore Cable Corridor. Proposed OWFs are discussed in Section 9.9.

## 6.8 Aggregate Dredging Areas

There are no aggregate dredging areas in proximity to the Offshore Cable Corridor. The closest area is approximately 19 nm north of the Offshore Cable Corridor, at Nobel Banks in the Bristol Channel.

## 6.9 Navigational Features in Proximity to the Landfall

Figure 6.7 presents an overview of the navigational features in proximity to the landfall.




## Figure 6.7 Navigational Features in Proximity to the Landfall

The Island of Lundy is situated within the study area roughly 2.6 nm north of the Offshore Cable Corridor and is encompassed within a marine conservation area which is subject to restricted anchoring and diving activities. A No Take Zone (NTZ) exists on the eastern side of the Island. It should be noted that no living natural resources such as lobsters, crabs and fish are allowed to be removed from this zone.

There are a number of charted wrecks within Bideford Bay, including one on the southern edge of the Offshore Cable Corridor. There are also a number of Aids to Navigation (AtoNs) close to the landfall, with the closest being a lighted buoy 500 north of the Offshore Cable Corridor, marking a seaweed farm along with five other AtoNs. Other AtoNs within the Bideford Bay area include a fairway buoy marking the approach to Bideford, lighted scientific buoys and the Lundy South and Hartland lighthouses.

To the north of the Offshore Cable Corridor landfall, there are two firing practice areas as discussed in Section 6.5.

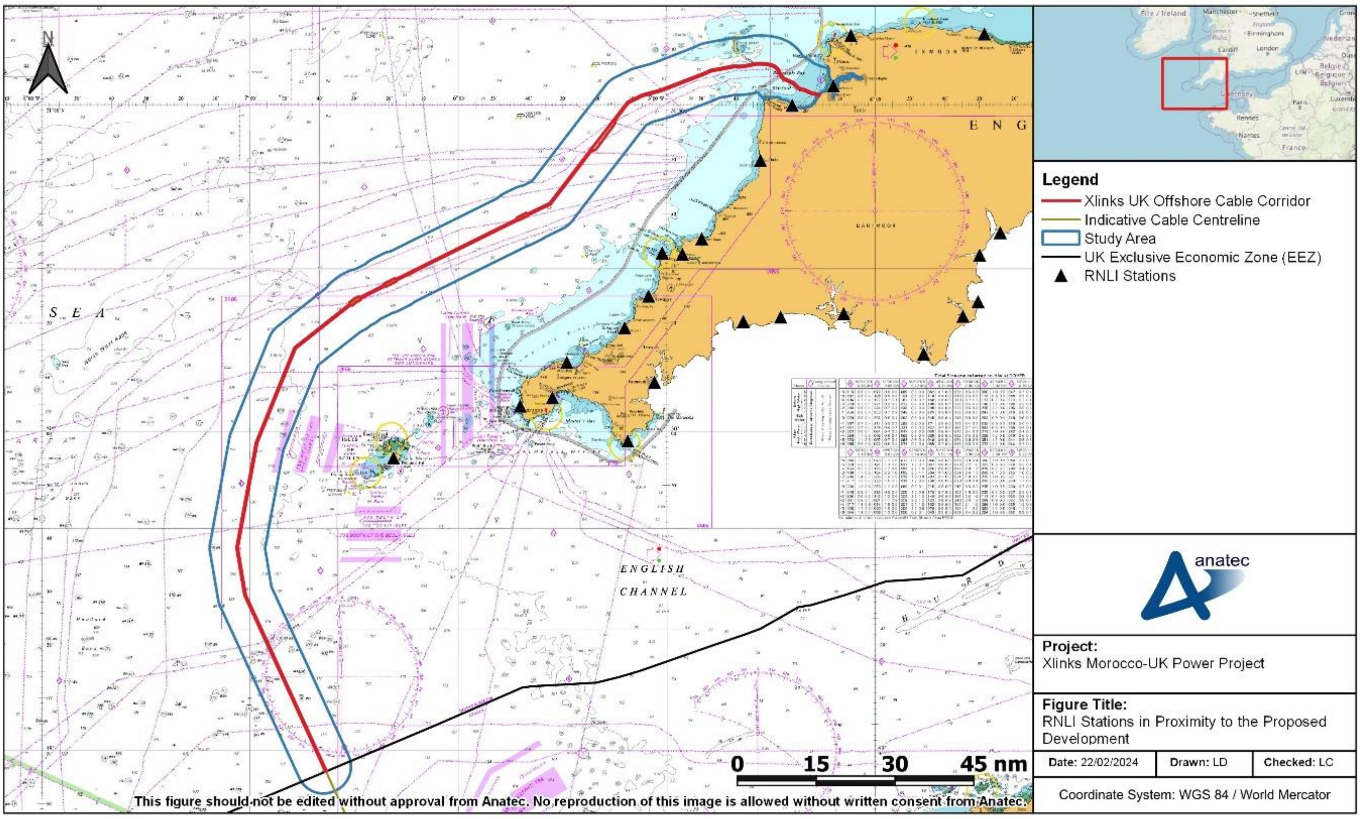
# 7 Emergency Response Overview

## 7.1 Introduction

This section summarises the existing emergency response resources (including SAR) and reviews historical maritime incident data to establish baseline incident rates in proximity to the Proposed Development.

## 7.2 RNLI

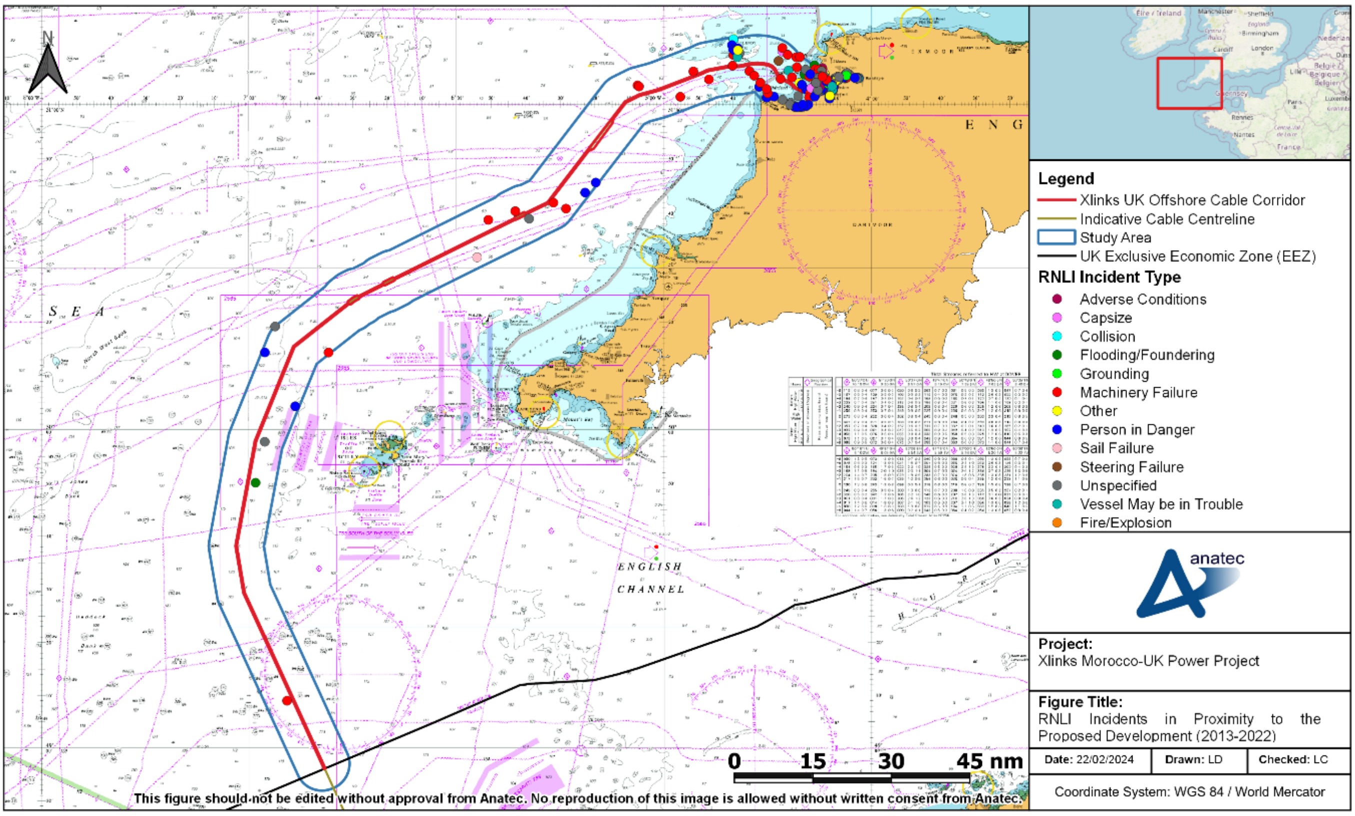
The RNLI is organised into six divisions, with the region relevant for the Proposed Development being the South West division. Based out of more than 230 stations, there are more than 350 lifeboats across the RNLI fleet, including both all-weather lifeboats (ALBs) and inshore lifeboats (ILBs). There are numerous RNLI stations within proximity to the Offshore Cable Corridor, presented in Figure 7.1.




### Figure 7.1 RNLI Stations in Proximity to the Proposed Development

The closest stations to the Offshore Cable Corridor are at Appledore, 2.9 nm to the northeast of the landfall in the entrance to the Rivers Taw and Torridge, and Clovelly, 3 nm south of the Offshore Cable Corridor at the south of Bideford Bay. Along the west coast, nearby stations are located at Bude, Port Isaac, Rock, Padstow, Newquay, St Agnes, St Ives and Sennen Cove, with the St Mary's station also located on the Isles of Scilly

RNLI incident data covering the ten year period from 2013 to 2022 (inclusive) was reviewed. The locations of incidents recorded within the study area are shown in Figure 7.2, colour-coded by incident type.




## Figure 7.2 RNLI Incidents in Proximity to the Proposed Developments (2013 – 2022)

It can be seen that RNLI incidents were typically recorded in nearshore areas within Bideford Bay, with a further concentration around the island of Lundy. 85% of incidents were responded to by the Appledore RNLI station, located at the mouth of the River Torridge. Clovelly (7%) and Ilfracombe (3%) also responded to a significant number of incidents within the study area. Three incidents were located within the Offshore Cable Corridor, all of which were machinery failures.

The distribution of incident types is presented in Figure 7.3.

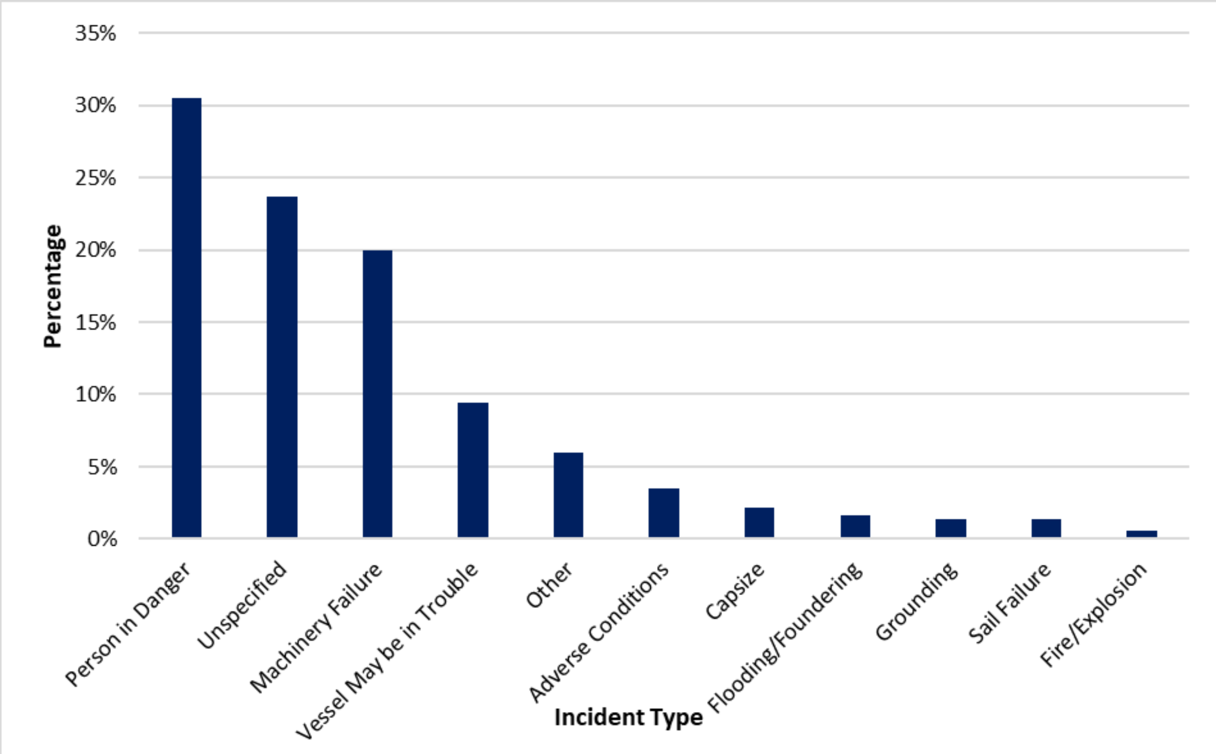
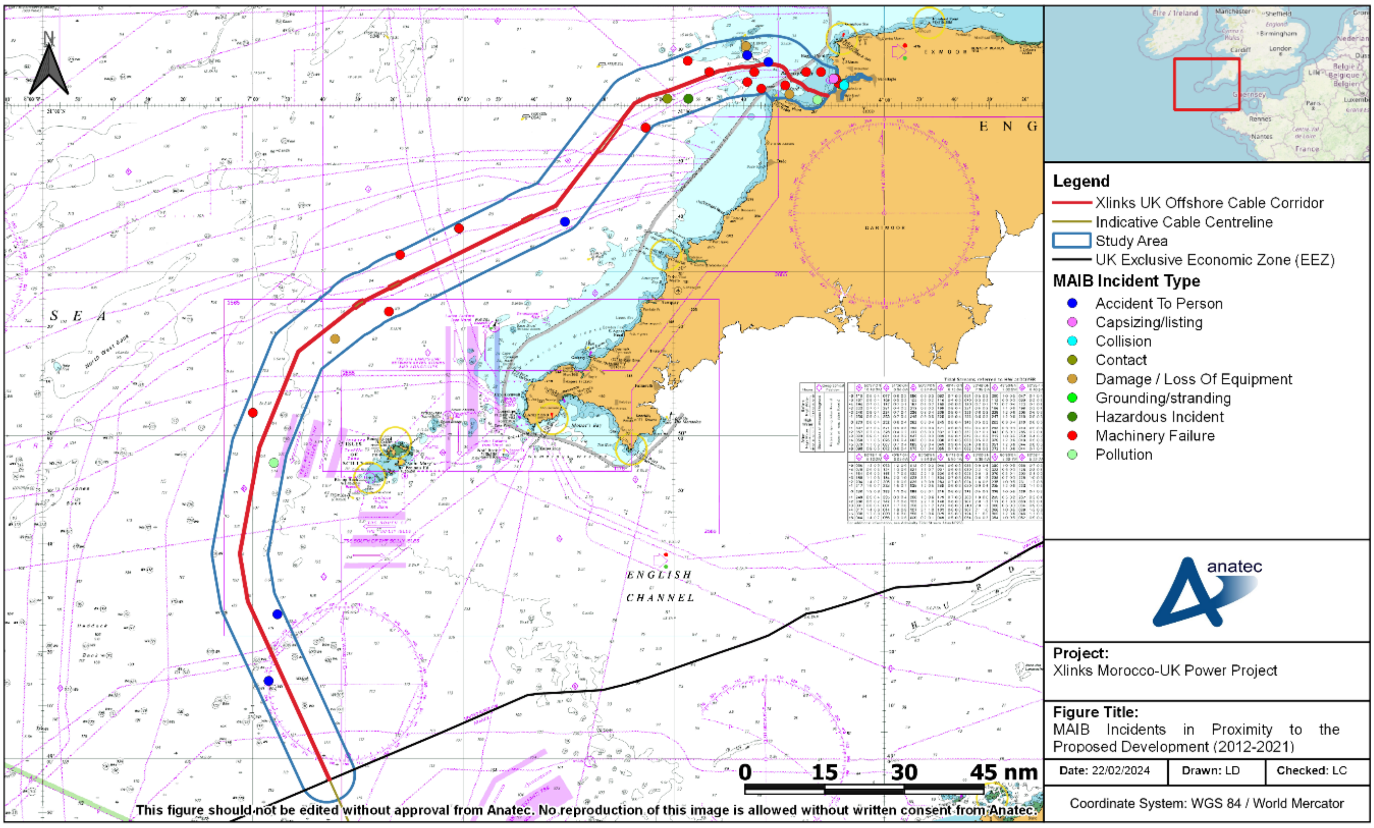



**Figure 7.3 RNLI Incident Type Distribution (2013 – 2022)**

In the ten-year period between 2013 and 2022, there was an average of 37 incidents per year within the study area. The most common incident types were "person in danger" incidents in near-shore areas, accounting for 30% of the incidents. Machinery failures were also common, making up 20% of incidents within the study area. Recreational vessels were the most common casualty type, accounting for 38% of RNLI callouts. Non-vessel based incidents accounted for 25% of callouts.

## 7.3 MAIB

All UK flagged vessels, and non-UK flagged vessels within UK waters which are within harbour limits or carrying passengers to or from a UK port, are required to report accidents to the MAIB. The MAIB also investigate incidents involving UK flagged vessels worldwide, or vessels of any flag within UK territorial waters, as detailed in MGN 564 (Ref x). Data arising from these reports are assessed within this section, covering the ten-year period from 2012 to 2021 (inclusive). Figure 7.4 presents the locations of incidents recorded within the study area between 2012 and 2021, colour-coded by incident type.




### Figure 7.4 MAIB Incidents in Proximity to the Proposed Development (2012 – 2021)

The MAIB recorded incidents throughout the study area, with a higher concentration of incidents recorded within Bideford Bay close to the landfall. It is noted that machinery failures may lead to drifting and a requirement to drop anchor to avoid further incidents from developing. Machinery failures were recorded both within Bideford Bay and further south, close to the TSS lanes around the Isles of Scilly. Figure 7.5 presents the distribution of incident types recorded by the MAIB.

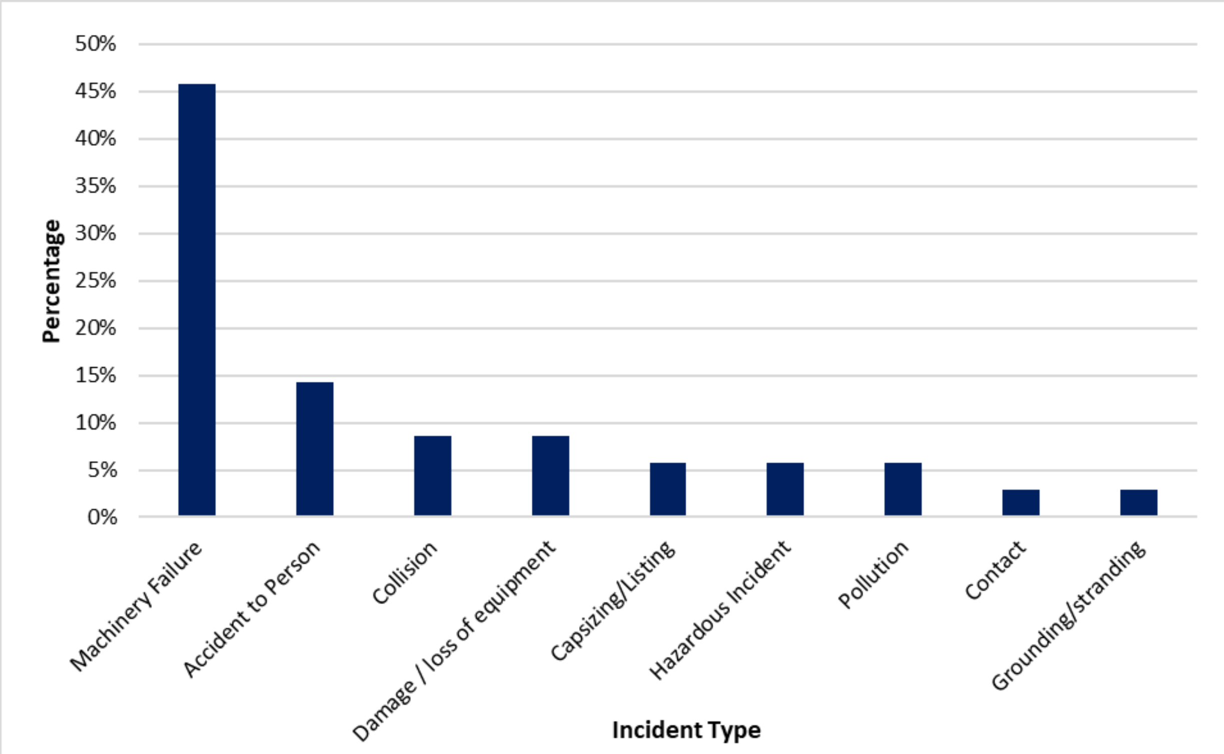



**Figure 7.5 MAIB Incident Type Distribution**

In the ten-year period from 2012 to 2021, there was an average of three to four incidents per year recorded by the MAIB, with 46% of these being machinery failures. Accident to person incidents (14%), damage/loss of equipment (9%) and collision incidents (9%) also made up significant proportions of the incidents recorded by the MAIB.

Fishing vessels accounted for 49% of MAIB-recorded incidents, with other commercial vessels (17%) and dry cargo vessels (14%) also notable.

## 7.4 SAR Helicopters

In July 2022, the Bristow Group were awarded a new 10-year contract by the MCA (as an executive agency of the DfT) commencing in September 2024 to provide helicopter SAR operations in the UK. Bristow have been operating the service since April 2015.

There are currently ten base stations for the SAR helicopter service, responding to incidents overland, around the coast and at sea. The most relevant stations to the Proposed Development are Newquay, located 25 nm east of the Offshore Cable Corridor on the north coast of Cornwall, and St Athan, approximately 38 nm to the northeast of the Offshore Cable Corridor in the Bristol Channel.

Figure 7.6 presents the locations of SAR helicopter taskings recorded within the study area between 2015 and 2023, colour-coded by tasking type.

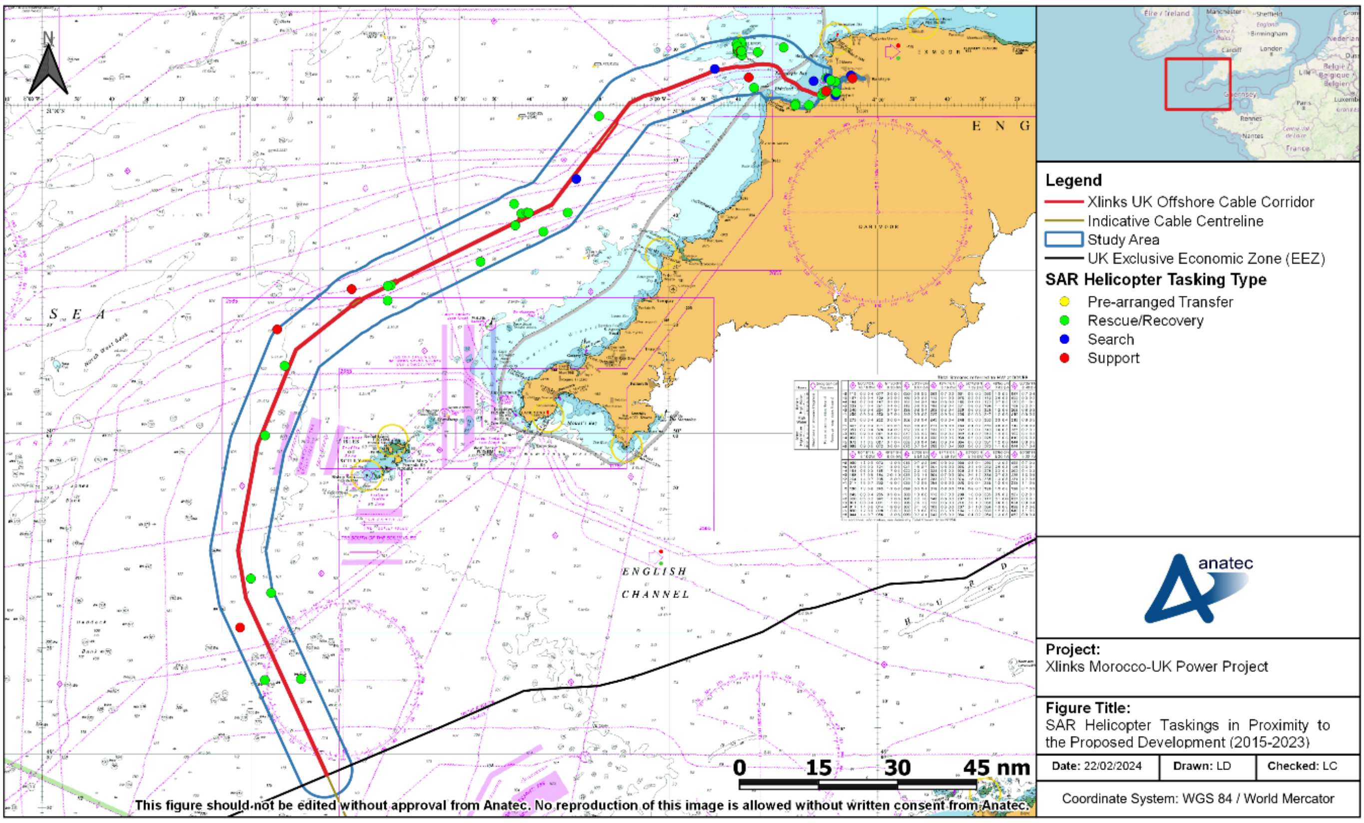



**Figure 7.6 SAR Helicopter Taskings in Proximity to the Proposed Development (2015 – 2023)**

From April 2015 to March 2023, there were a total of 89 SAR helicopter taskings within the study area, with 41 of these clustered around the island of Lundy. A further 20 were located around the Offshore Cable Corridor Landfall in Bideford Bay. The remaining taskings were spread across the length of the Offshore Cable Corridor. The most common type of tasking was "Rescue/Recovery" accounting for 75% of taskings within the study area. All taskings were launched from St Athan or Newquay.

## 7.5 Marine Rescue Coordination Centres and Joint Rescue Coordination Centres

HMCG, a division of the MCA, is responsible for requesting and tasking SAR resources made available to other authorities and for coordinating the subsequent SAR operations (unless they fall within military jurisdiction).

The HMCG coordinates SAR operations through a network of 11 Maritime Rescue Coordination Centres (MRCC), including a Joint Rescue Coordination Centre (JRCC) based in Hampshire.

All of the MCA's operations, including SAR, are divided into 18 geographical regions. The Proposed Development lies within Areas 11 and 12, "Cornwall including Isles of Scilly" and

"North Devon including Severn Estuary". The closest MRCCs to the Proposed Development are at Falmouth, 38.5 nm to the southeast of the Offshore Cable Corridor in Cornwall, and Milford Haven, approximately 37.0 nm north of the Offshore Cable Corridor in Wales. It is noted that incident response is not necessarily coordinated by the nearest MRCC, as operators may be unavailable, and calls re-routed to another MRCC.

# 8 Consultation

Shipping and navigation stakeholders have been consulted to date as part of the NRA process. Prior to the submission of the Scoping Report, introductory meetings were held with both the MCA and Trinity House, in December 2023. A summary of the consultation undertaken has been presented in Volume 3: Chapter 5: Shipping and Navigation of the PEIR. Key responses to the Scoping Report, received on 07 March 2024, relevant to shipping and navigation have also been presented.

To inform the NRA process, further consultation will be undertaken, as described in Section 12.4.

# 9 Baseline Shipping Analysis

## 9.1 Introduction

This section presents analysis of the AIS shipping data within the study area including assessments of the vessel numbers, types, sizes, and densities. An AIS data set covering 12 months from September 2022 to August 2023 was used to provide up-to-date coverage of the study area and cover seasonal variations in vessel traffic.

It is noted that a number of tracks of vessels were considered to be temporary or non-routine and have been removed to ensure the analysis is not skewed and gives a fair representation of normal vessel traffic movements in the area. These included vessels undertaking surveys along the Offshore Cable Corridor and throughout the study area. The tracks of vessels entirely within the Rivers Taw and Torridge were also excluded from the analysis, as these are not considered to be relevant to the Offshore Cable Corridor.

## 9.2 Vessel Numbers

Figure 9.1 presents the average daily vessel count per month, based on the number of unique vessels per day[5] over the month, recorded within the study area and intersecting the Offshore Cable Corridor.

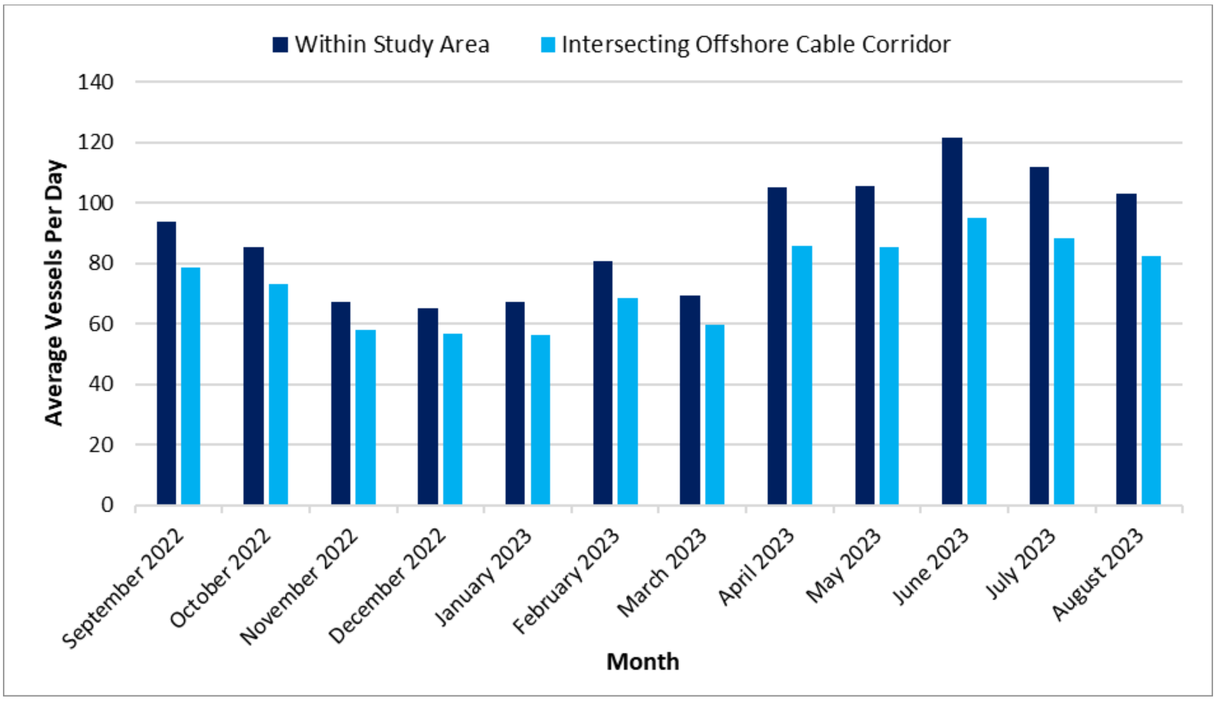


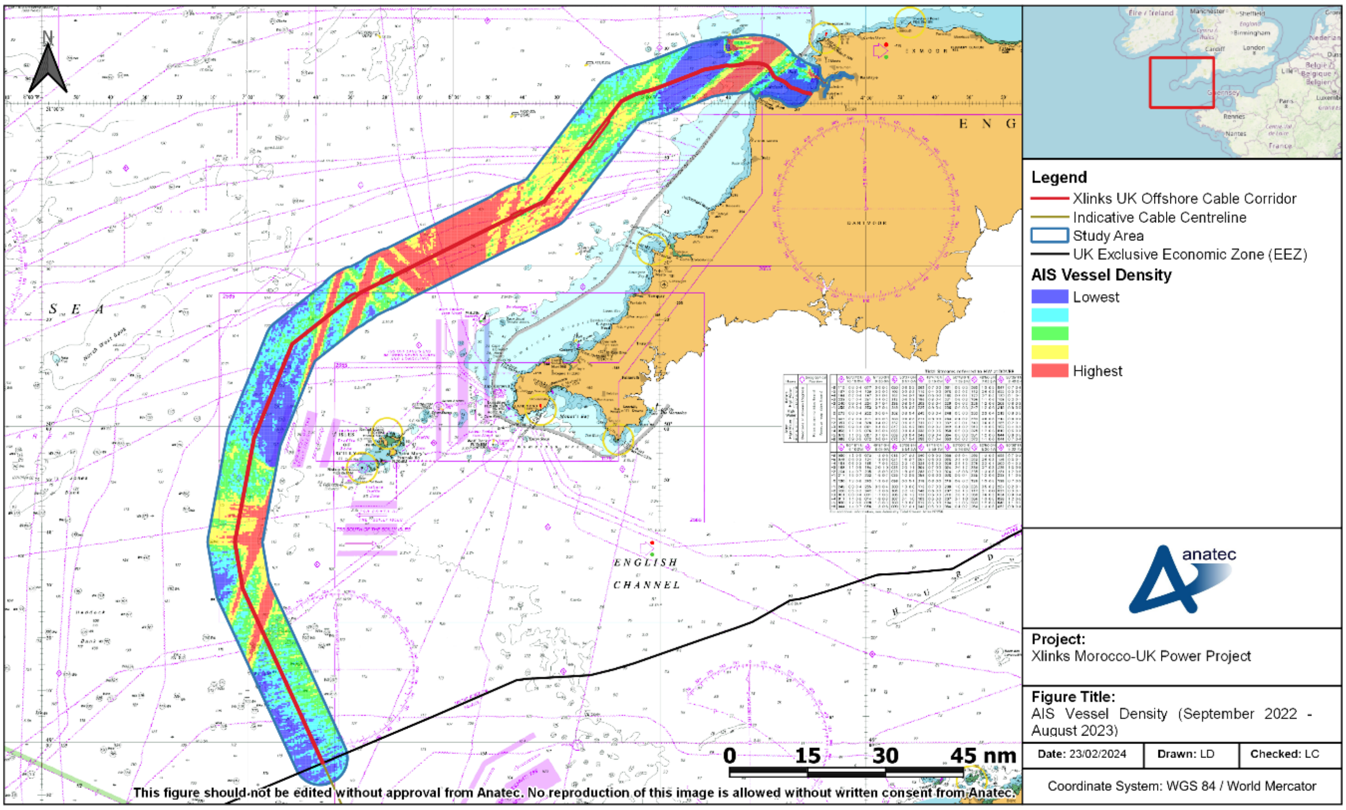

**Figure 9.1 Average Daily Vessel Count per Month**

[5] i.e., each vessel is counted only once per day within the Study Area to avoid over-counting if the vessel leaves and re-enters.

There was an average of 90 vessels per day recorded within the study area, with 74 per day intersecting the Offshore Cable Corridor. Vessel numbers were typically higher in summer months, which can be attributed to a greater volume of recreational, fishing and passenger vessels present during these months than in winter. This is underlined by June 2023 being the busiest month, with an average of 122 vessels per day within the study area compared with the quietest month, December 2022, seeing an average of 65 vessels per day.

## 9.3 Vessel Density

Figure 9.2 presents the vessel density within the study area, based on the number of tracks intersecting the cells of a 500m x 500m grid covering the study area.



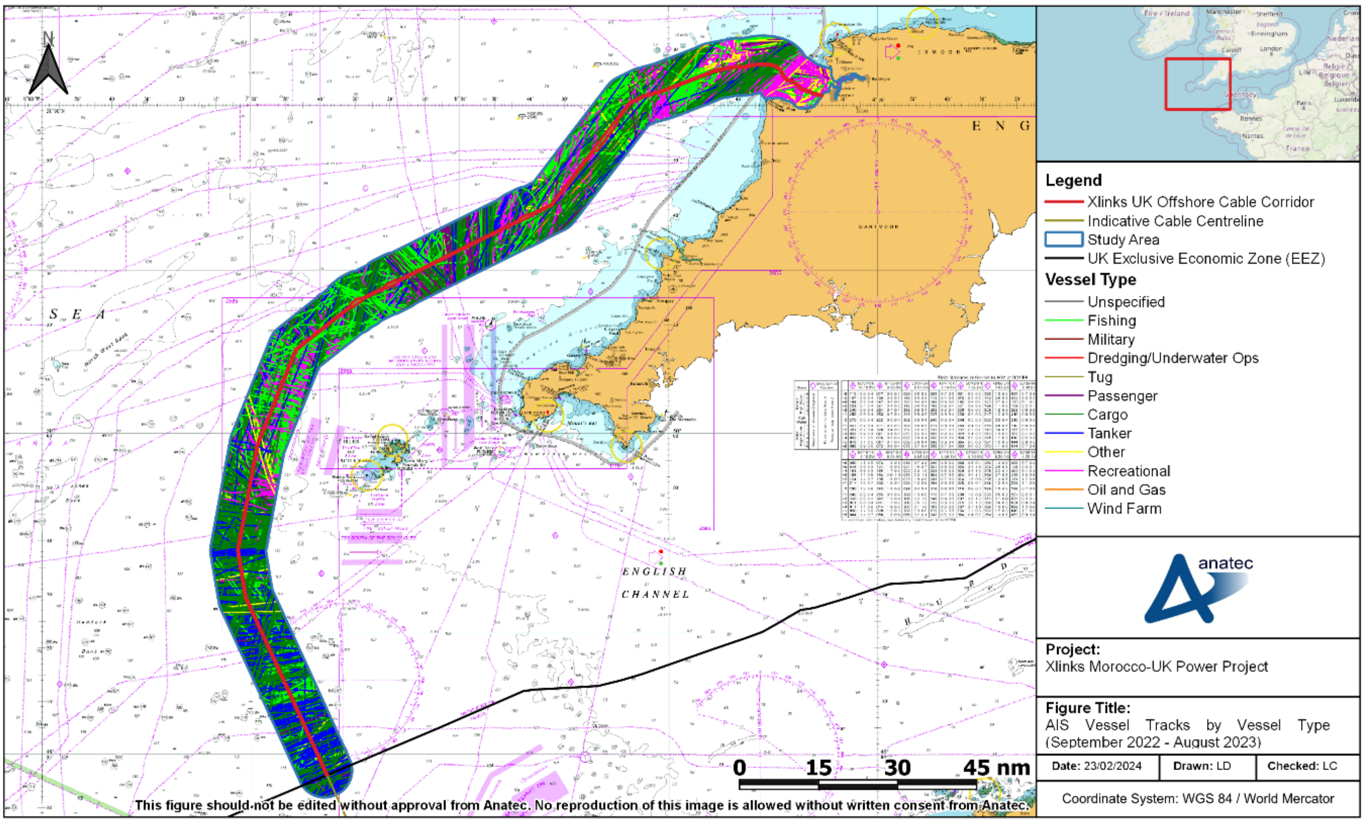

### Figure 9.2 AIS Vessel Density (September 2022 – August 2023)

Key routes can be seen crossing the Offshore Cable Corridor corresponding to vessels using the TSS lanes around the Isles of Scilly, as well as traffic to/from ports in the Bristol Channel such as Bristol and Newport. High density routes between Lundy, Ilfracombe and Bideford are also visible in the north of the study area, close to the landfall.

## 9.4 Vessel Type

This section presents analysis of the vessel types recorded within the study area, as well as anchoring and fishing activity. It is noted that vessel type is broadcast in the AIS data, however this information is not always provided/correct, as this information is required to be input correctly by vessel crew. As a result, research was carried out to update missing or incorrect vessel types. Where information was not available, vessels have been categorised as unspecified, which amounted to less than 1% of all vessel traffic.

Figure 9.3 presents the tracks of vessels recorded on AIS within the study area, colour-coded by vessel type.




## Figure 9.3 AIS Vessel Tracks by Vessel Type (September 2022 – August 2023)

Vessel traffic was recorded throughout the study area, with particular dense regions of traffic associated with cargo vessels and tankers using the TSS lanes around the Isles of Scilly. Recreational activity was also recorded throughout the study area, particularly in coastal areas near the landfall in Bideford Bay, while fishing activity was typically recorded off the west coast to the north of the Isles of Scilly. These vessel types are presented in further detail in the following sections.

Figure 9.4 presents the distribution of vessel types recorded within the study area.

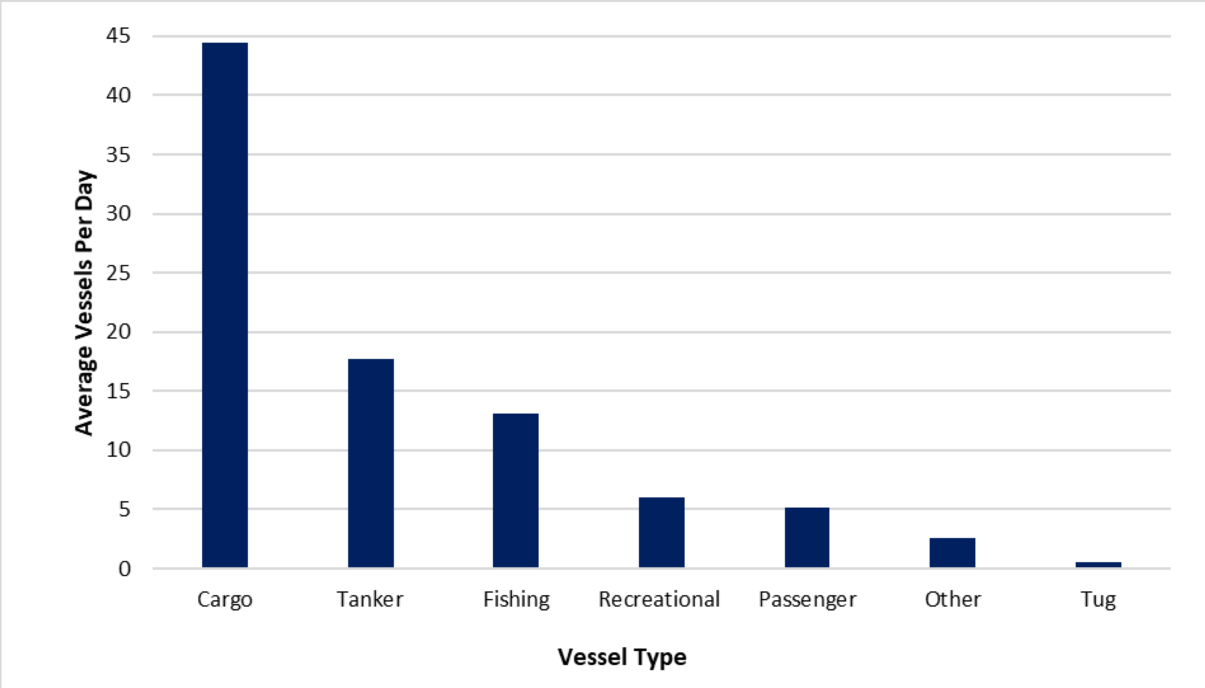



**Figure 9.4 Distribution of Vessel Type**

The most common vessel type was cargo vessels, accounting for 50% of vessels within the study area with an average of 44 vessels per day. Tankers (20%), fishing vessels (15%) and recreational vessels (7%) also accounted for a large proportion of vessel traffic. Passenger vessels (6%) were recorded frequently, including both cruise ships and regular ferries. Vessels in the "other" category included RNLI lifeboats, guard and survey vessels on passage and dive support vessels.

### 9.4.1 Cargo Vessels and Tankers

Figure 9.5 presents the tracks of cargo vessels and tankers recorded within the study area.

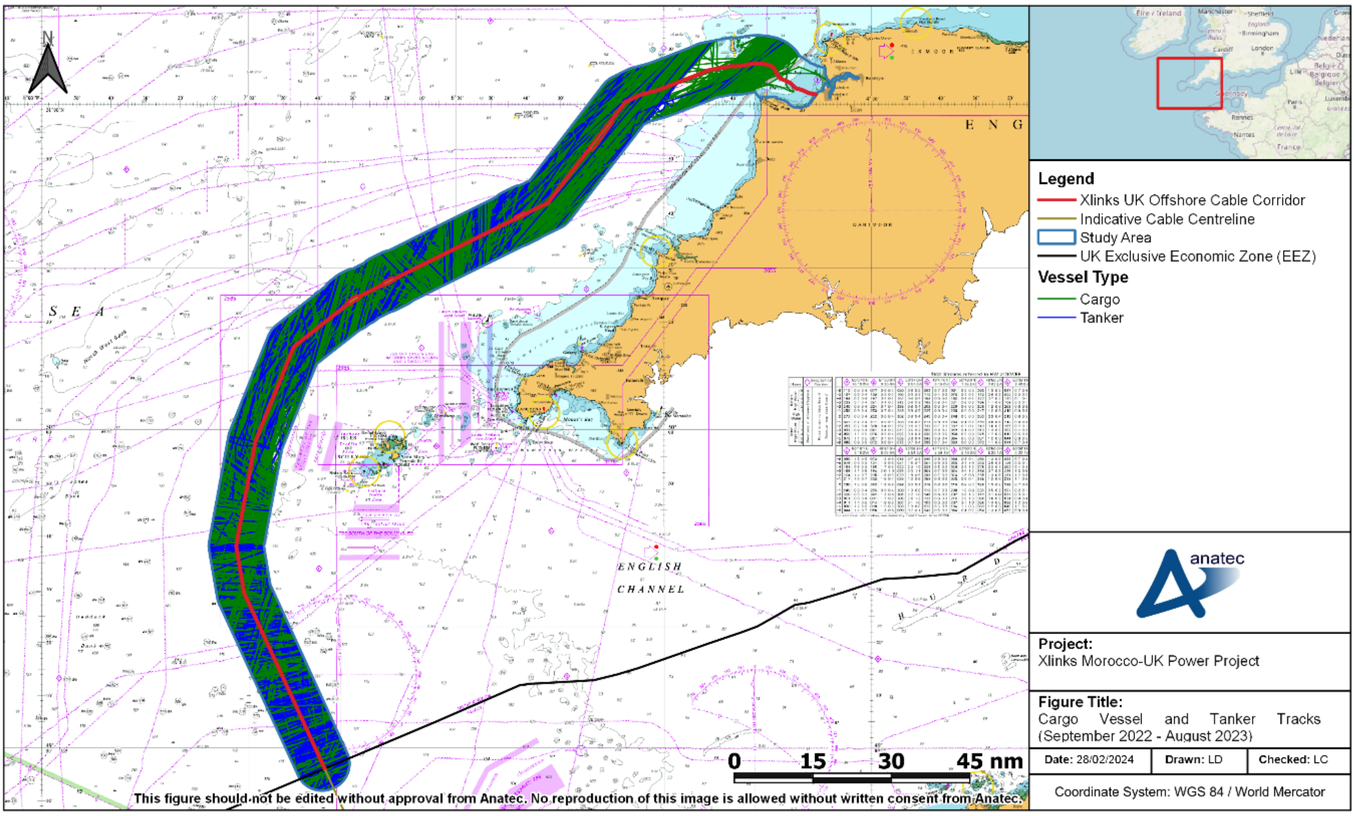



**Figure 9.5 Cargo Vessel and Tanker Tracks (September 2022 – August 2023)**

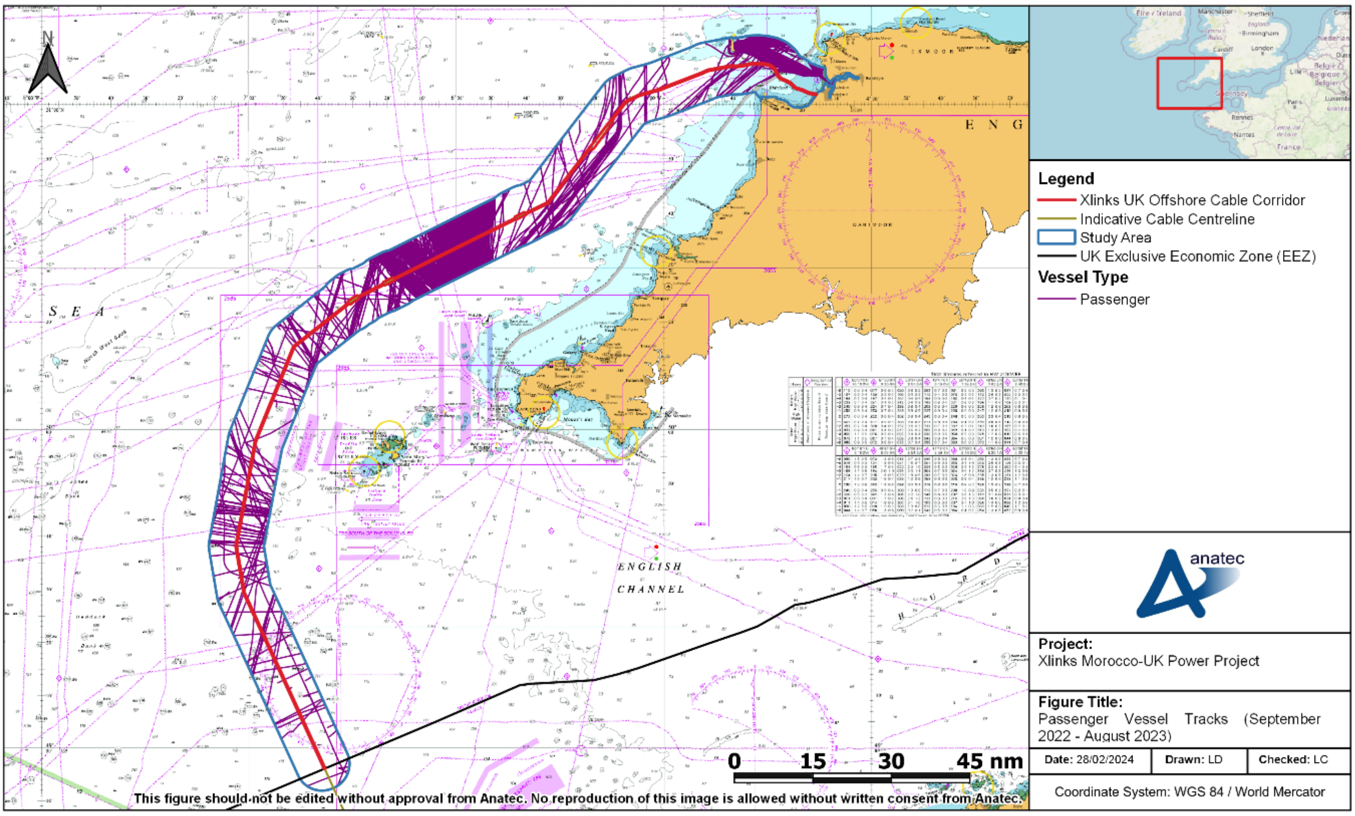
On average there were 44 cargo vessels and 18 tankers per day within the study area. Common destinations for these vessel types included major European ports such as Rotterdam, Antwerp, Zeebrugge and Cherbourg, reflecting the volume of traffic using the English Channel and crossing the southern extents of the Offshore Cable Corridor. Popular UK ports included Southampton, Liverpool and Belfast, with Irish ports such as Dublin, Cork and Rosslare also being very common destinations. Commercial vessel destinations were reflective of the English Channel being a major thoroughfare for international shipping, with vessels frequently recorded transiting between the European and UK ports above, as well as ports in the USA and Canada, such as New York, Halifax, Charleston and Baltimore.

Cargo vessels and tankers were recorded throughout the study area, with particularly dense regions of traffic associated with vessels using the TSS lanes around the Isles of Scilly, and passing Bideford Bay on passage to or from the Bristol Channel. The largest of cargo vessels and tankers were typically recorded crossing the southern extent of the Offshore Cable Corridor using the English Channel.

A single 88 m cargo vessel was recorded entering the Port of Bideford over the data period.

### 9.4.2 Passenger Vessels

Figure 9.6 presents the tracks of passenger vessels recorded within the study area.

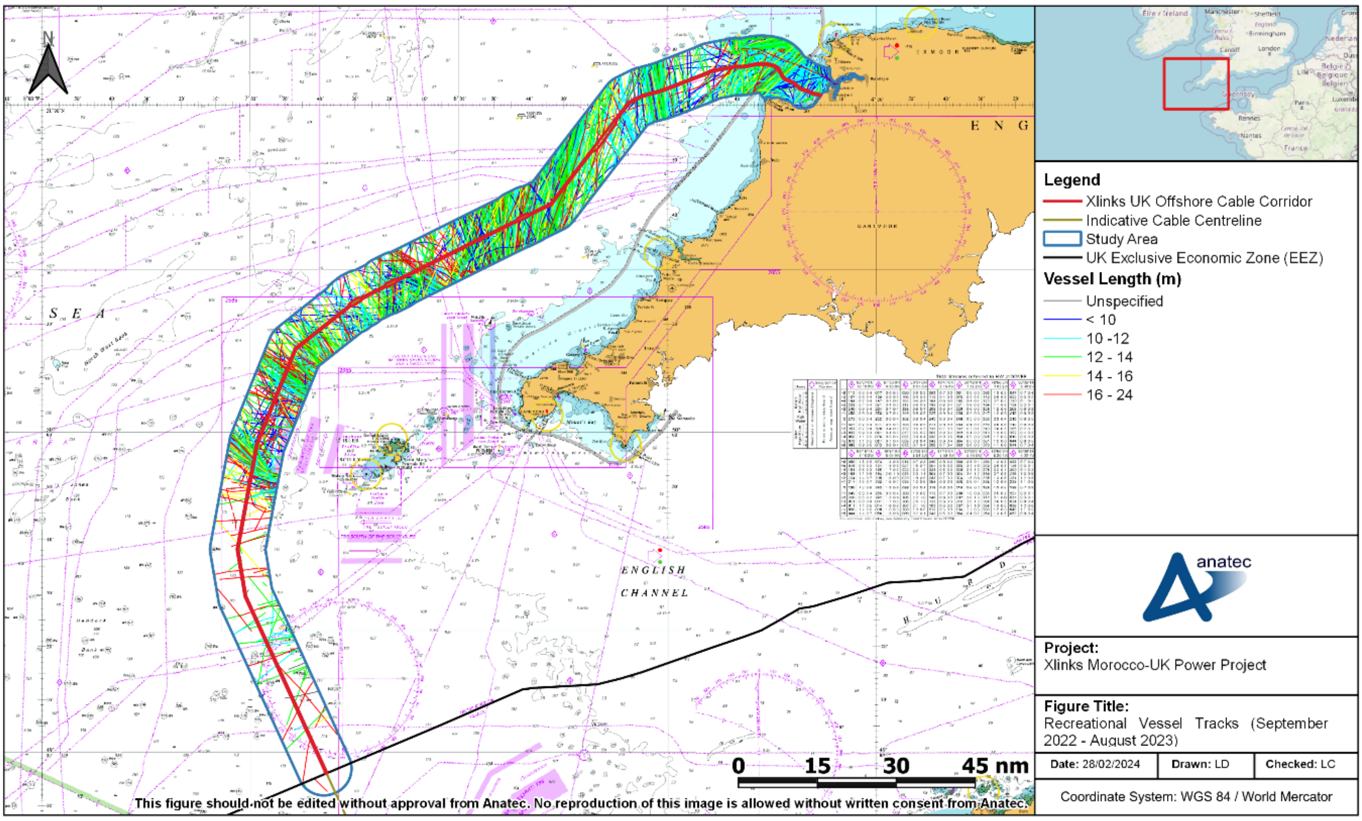



## Figure 9.6 Passenger Vessel Tracks (September 2022 – August 2023)

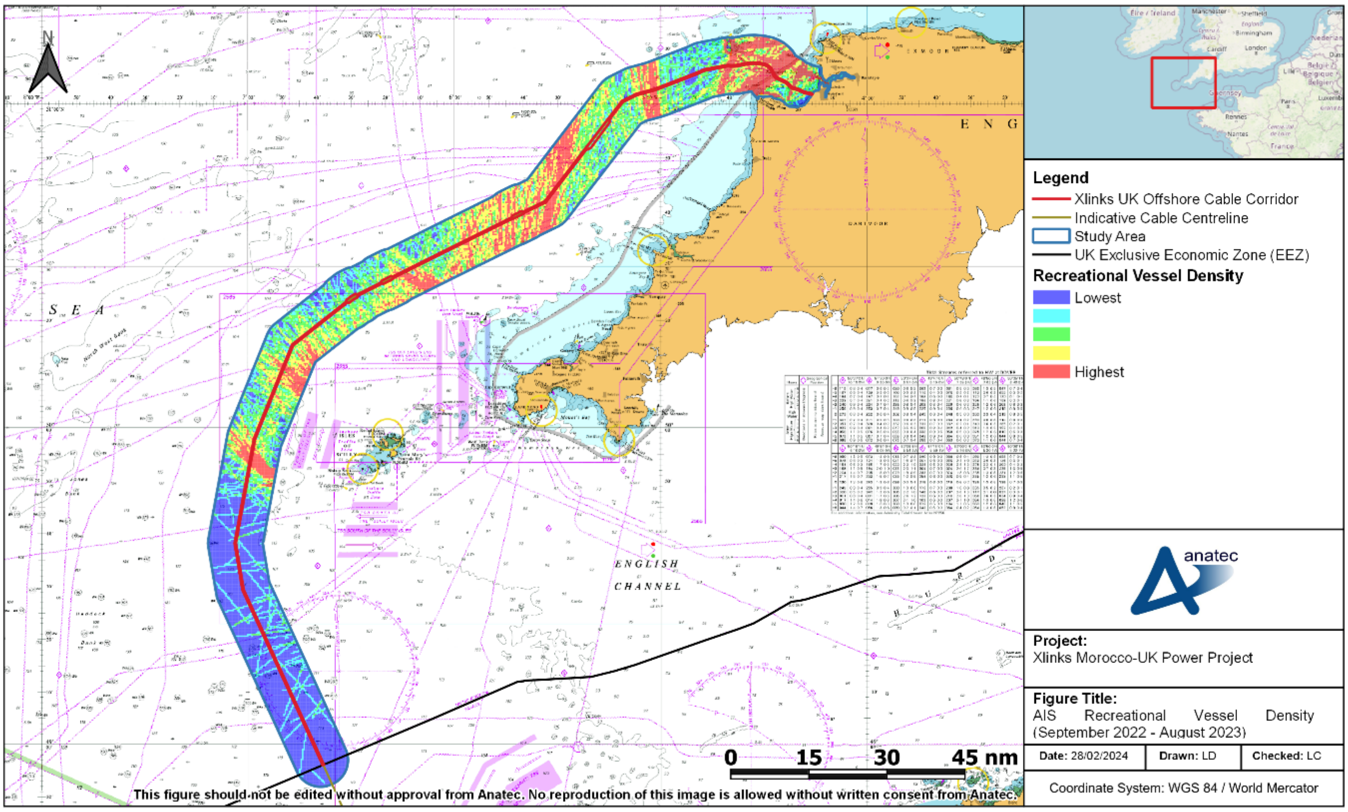
There was an average of five passenger vessels recorded within the study area per day, including both regular ferries and large cruise ships. Regular ferry routes in the study area included a 38 m vessel passing regularly between Bideford, Lundy and Ilfracombe in the vicinity of the Offshore Cable Landfall. Another 186 m ferry was recorded frequently crossing the Offshore Cable Corridor while using the TSS east of Isles of Scilly on passage between Dunkirk, France and Rosslare, Ireland. The largest passenger vessel recorded within the study area was a 345 m cruise ship which was recorded making several trips between New York and Southampton over the 12-month period, crossing the Offshore Cable Corridor while using the TSS south of the Isles of Scilly.

### 9.4.3 Recreational Vessels

Figure 9.7 presents the tracks of recreational vessels recorded on AIS within the study area, colour-coded by vessel length. Following this, Figure 9.8 presents the density of recreational vessel tracks, based on a grid of 500 m x 500 m cells. It is noted that recreational vessels are not required to broadcast on AIS, and will therefore be under-represented.




## Figure 9.7 Recreational Vessel Tracks (September 2022 – August 2023)




### Figure 9.8 AIS Recreational Vessel Density (September 2022 – August 2023)

Over the course of the 12-month data period, there was an average of six recreational vessels per day within the study area. Recreational vessels were recorded throughout the study area, with particularly dense areas of activity recorded in Bideford Bay. Recreational activity was less common in the south of the study area within the English Channel.

## 9.4.4 Fishing Vessels

Figure 9.9 presents the average daily count of fishing vessels each month.

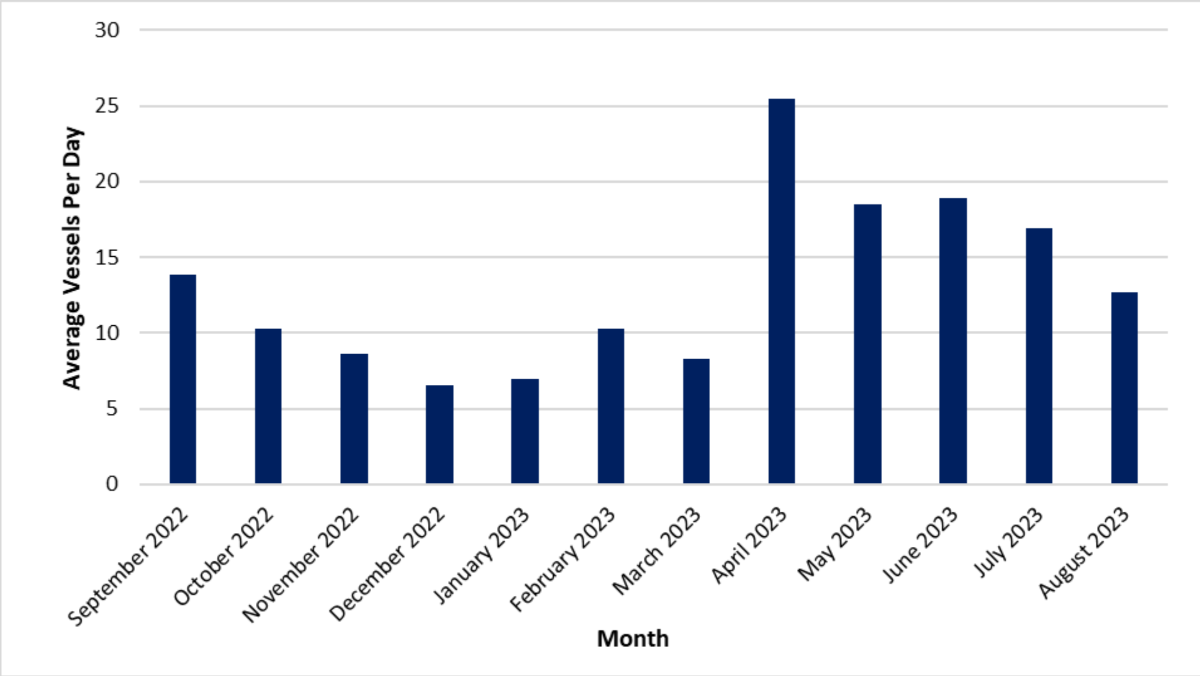



**Figure 9.9 Average Daily Fishing Vessel Count per Month**

During the 12-month data period, there was an average of 13 fishing vessels per day recorded within the study area, with significant seasonal variation observed over the course of the year. April was the busiest month for fishing, with an average of 25 vessels per day recorded within the study area. Generally the autumn and winter months were quieter in terms of fishing vessel activity compared to late spring and summer months, with December and January being the quietest with 6 to 7 vessels per day.

Figure 9.10 presents the tracks of fishing vessels recorded within the study area, colour-coded by fishing gear type.

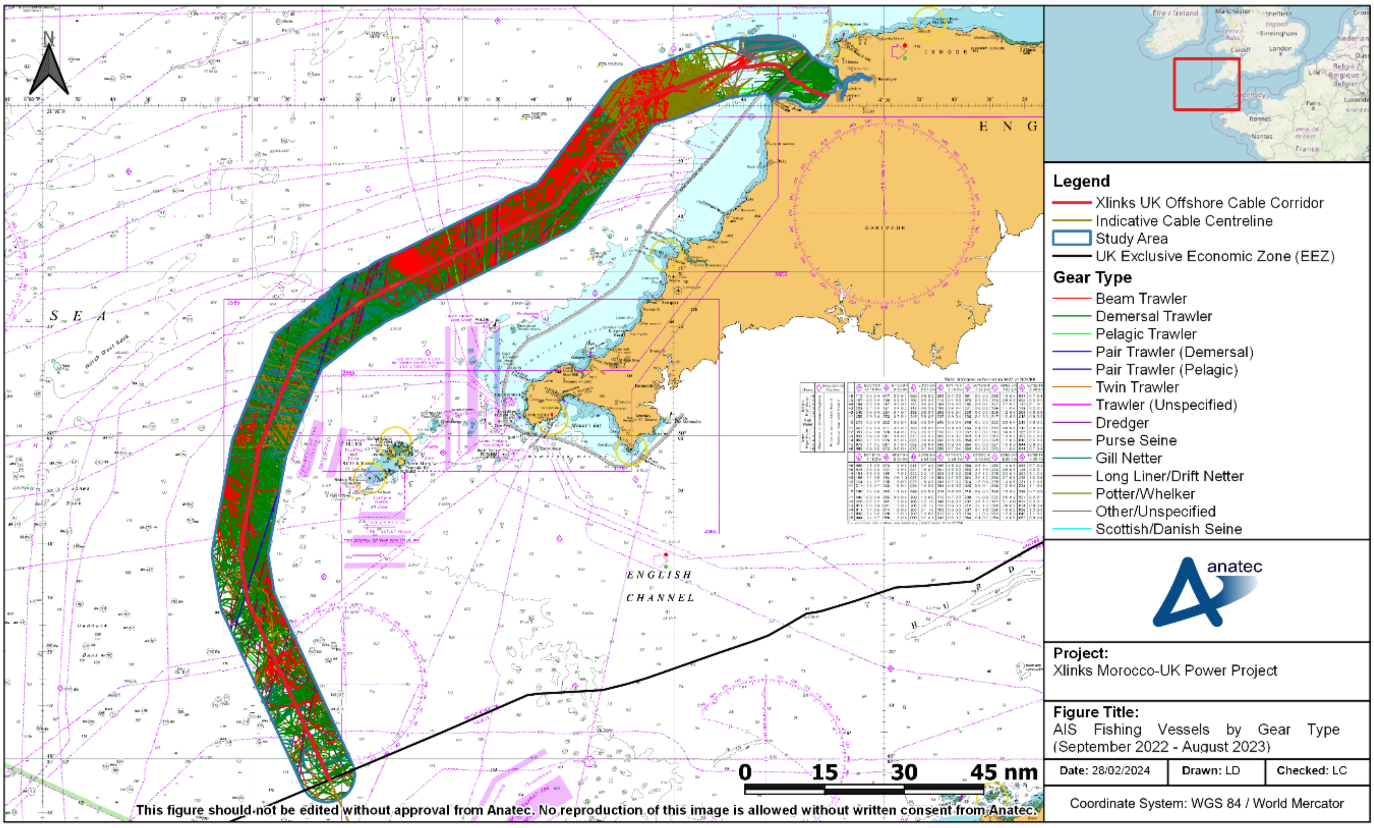
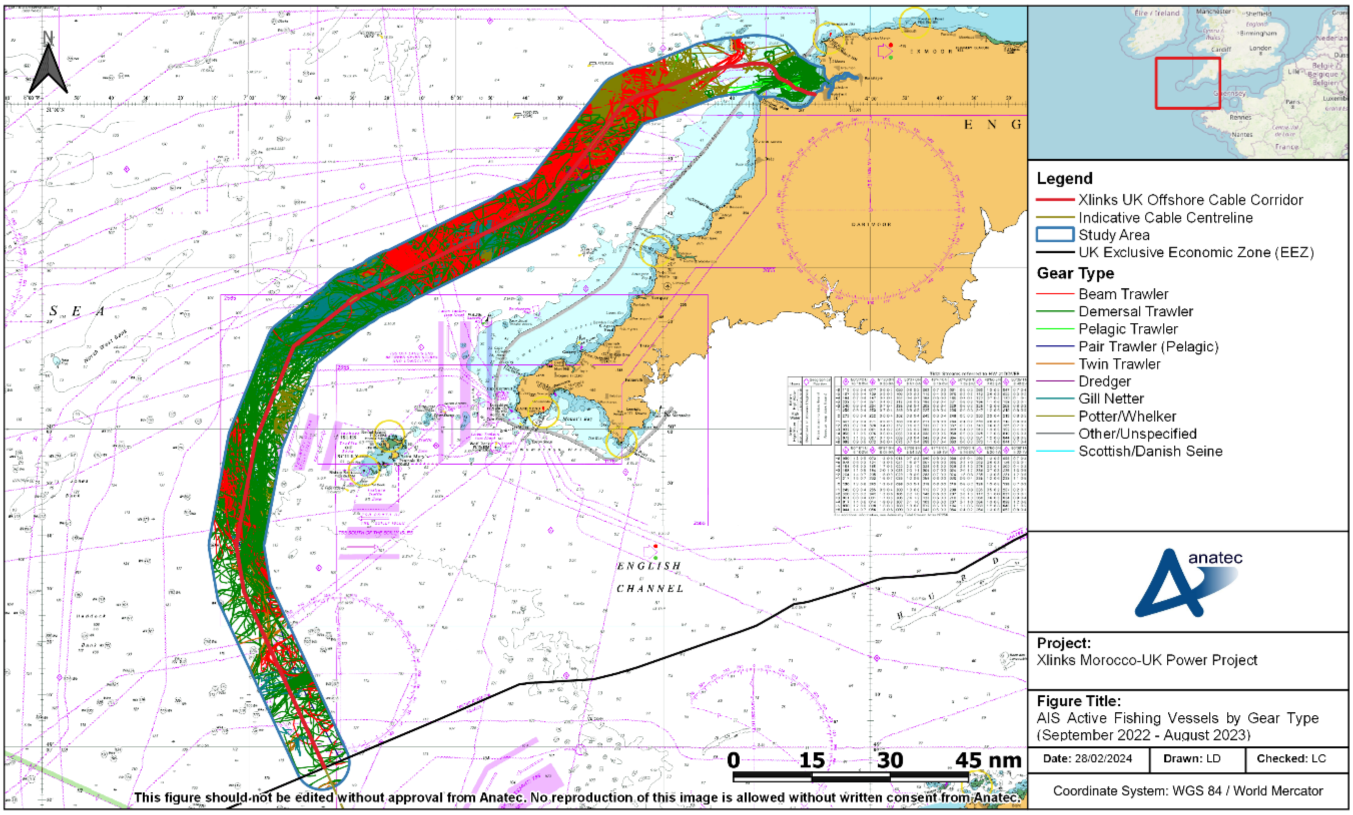



**Figure 9.10 AIS Fishing Vessels by Gear Type (September 2022 – August 2023)**

Fishing vessels were recorded throughout the study area, noting that this includes the tracks of transiting fishing vessels as well as those actively engaged in fishing. A wide variety of fishing gear types were recorded within the study area, with demersal and beam trawlers being the most prominent throughout, with beam trawlers most commonly recorded along the southwest coast of the UK mainland. Potters/whelkers were notably recorded in the north of the study area to the west of Bideford Bay and south of Lundy, while gill netters were also frequently present in the area to the north of the Isles of Scilly. The average speed of fishing vessels within the study area was 5.0 knots, indicative that many vessels were likely to be actively engaged in fishing.

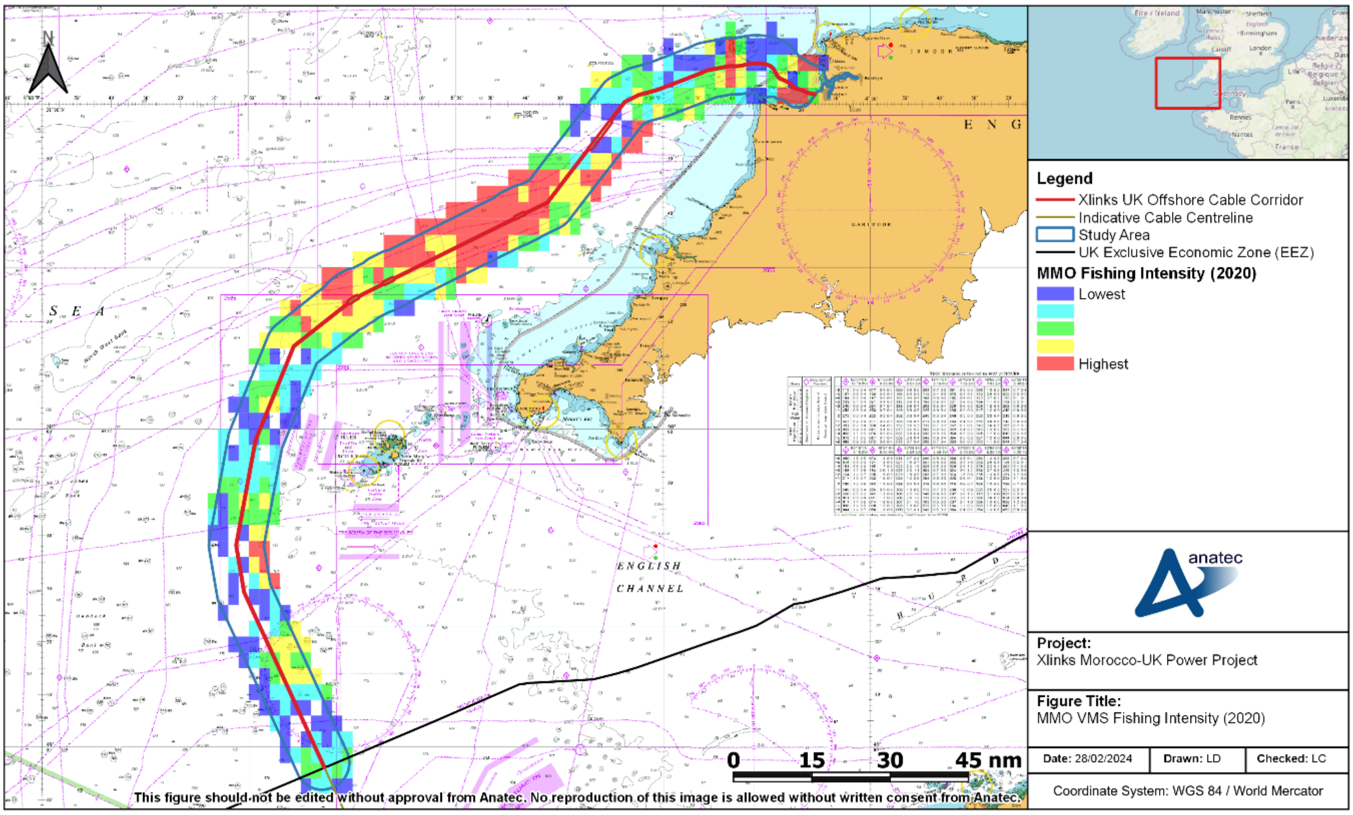
Figure 9.11 presents the tracks of fishing vessels deemed to be actively engaged in fishing, colour-coded by fishing gear type. Approximately 63% of fishing vessels recorded within the study area were considered to be actively engaged in fishing.




### Figure 9.11 AIS Active Fishing Vessels by Gear Type (September 2022 – August 2023)

It can be seen that the most active area of fishing within the study area is the central region, parallel to the coast of the UK mainland, where demersal trawlers, beam trawlers, gill netters and potters/whelkers were all recorded actively fishing in significant numbers.

In addition to AIS, VMS satellite data for 2020 was reviewed to inform on fishing vessel movements. Figure 9.12 presents the intensity of fishing vessel activity within the study area.

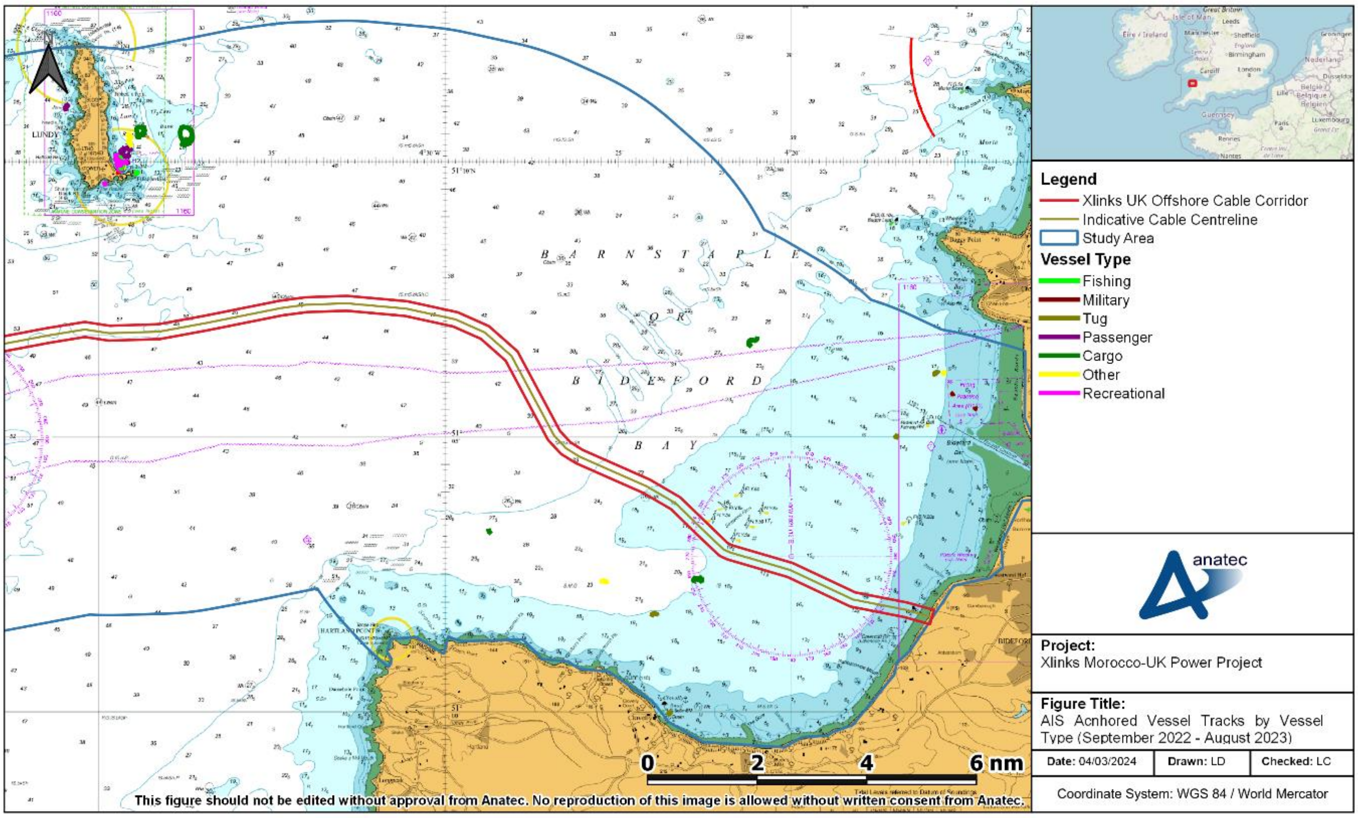



## Figure 9.12 MMO VMS Fishing Intensity (2020)

Fishing density as reported by the MMO showed a good correlation with the baseline as established using AIS data, with the region of highest activity being the centre of the study area, off the UK mainland and north of the Isles of Scilly.

### 9.4.5 Anchored Vessels

Figure 9.13 presents the tracks of vessels at anchor within the study area, colour-coded by vessel type. These were identified using the navigation status transmitted via AIS and an analysis based on vessel speed and duration. Any vessels determined by Anatec to wrongly broadcast their status as "At Anchor", based on the behaviour of the vessel, were filtered out of the analysis. In addition, AIS tracks from vessels which transmitted a navigation status other than 'At Anchor' were used as input to Anatec's Speed Analysis model. The program detects any tracks of vessels that were travelling at speeds less than one knot for a minimum of 30 minutes. This output is then manually checked, and any tracks that can be confirmed as coming from an anchored vessel are added to the tracks from the first step.




## Figure 9.13 AIS Anchored Vessel Tracks by Vessel Type (September 2022 – August 2023)

Anchoring activity was limited in the study area, with vessels only recorded within Bideford Bay and off the east coast of Lundy, and a low level of anchoring recorded in these locations. There was an average of approximately one unique anchored vessel recorded within the study area every three days during the 12 months. No anchoring was recorded within the Offshore Cable Corridor, with the closest vessel being an 83 m cargo vessel recorded 0.5 nm to the south within Bideford Bay.

Figure 9.14 presents the distribution of the types of anchored vessels recorded within the study area.

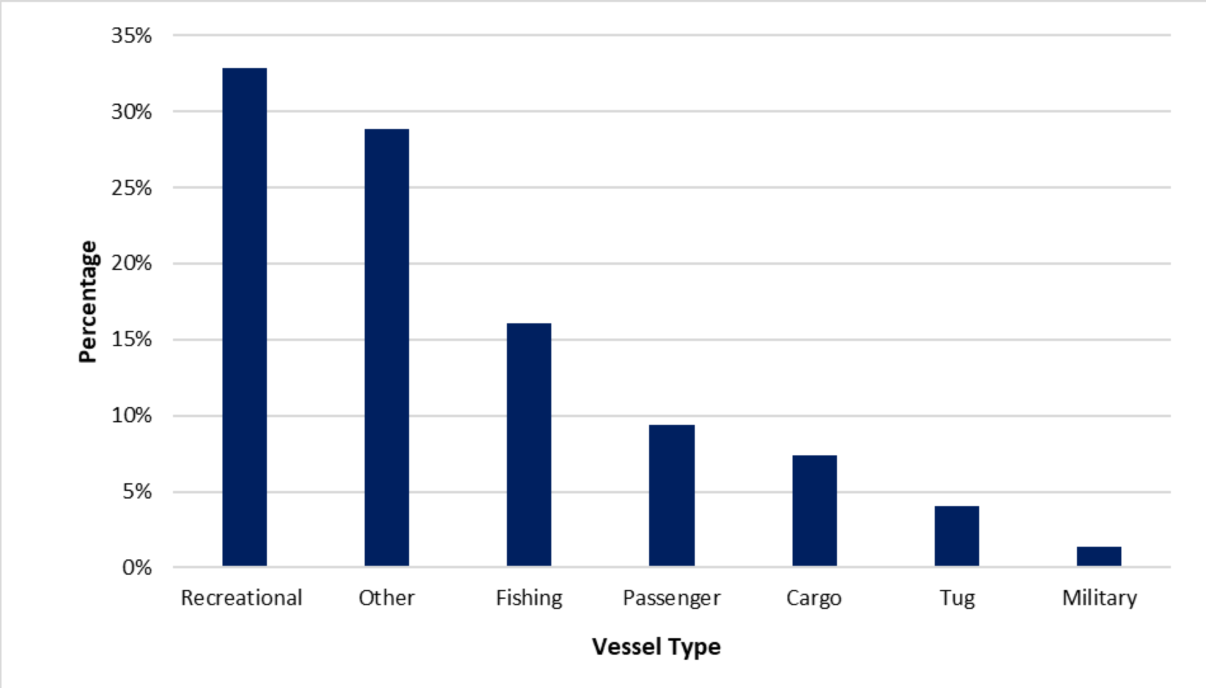



**Figure 9.14 Anchored Vessel Type Distribution**

The most common types of anchored vessels were recreational vessels (33%) and fishing vessels (16%). "Other" vessels accounted for 29% of anchored vessels, and typically consisted of dive vessels off Lundy.

## 9.5 Vessel Length

Figure 9.15 presents the AIS vessel tracks recorded in the study area, colour-coded by vessel length. Vessel length information was available for 99% of vessels.

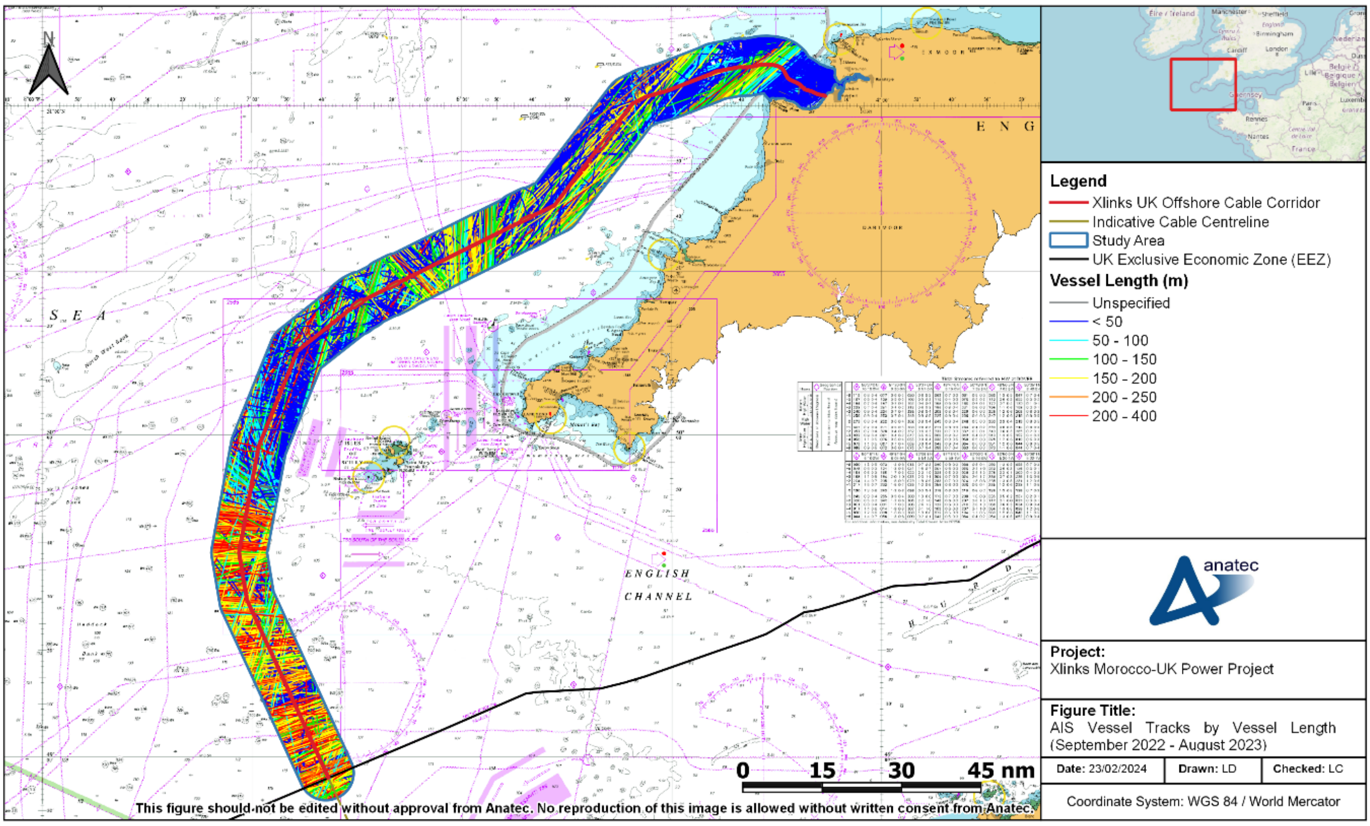



**Figure 9.15 AIS Vessel Tracks by Vessel Length (September 2022 – August 2023)**

Large vessels of greater than 300 m in length were most commonly recorded crossing the southern extents of the study area, while on passage to/from the English Channel. Small vessels (less than 20 m in length) were more typically recorded in greater numbers in the Celtic Sea to the north and west of the Isles of Scilly, and were primarily recreational and fishing vessels, as well as some other vessels including RNLI lifeboats.

Figure 9.16 presents the distribution of vessel lengths recorded within the study area, excluding the 1% of vessels for which length information was not available.

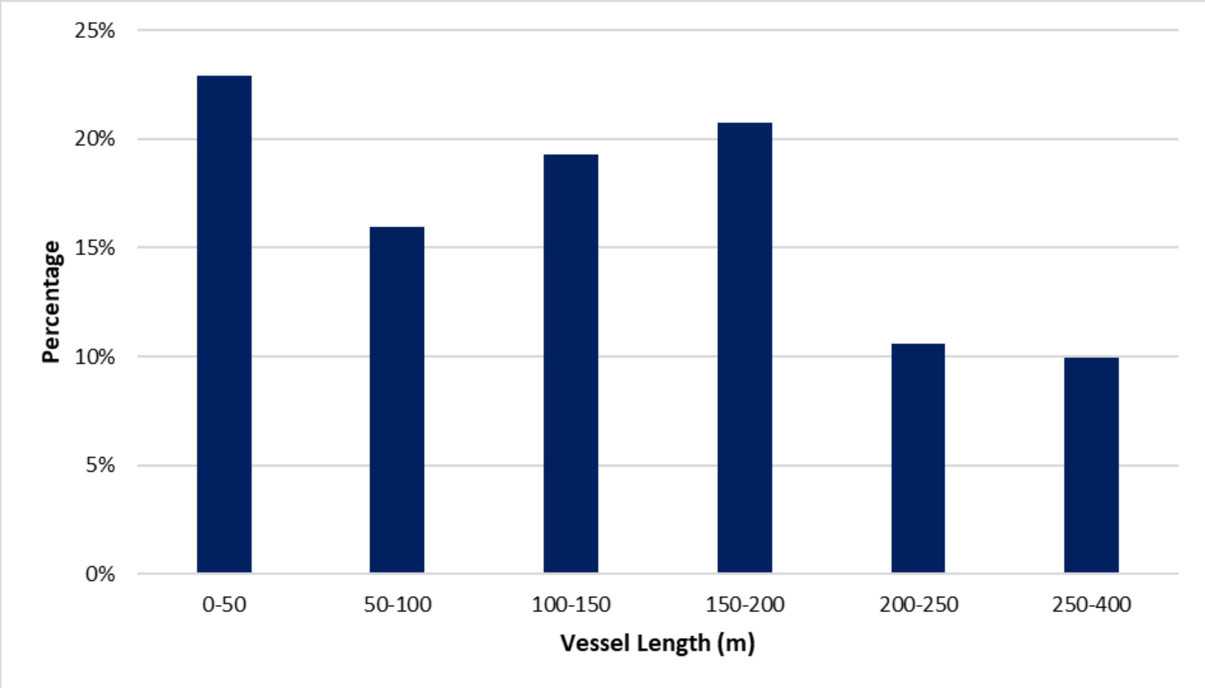
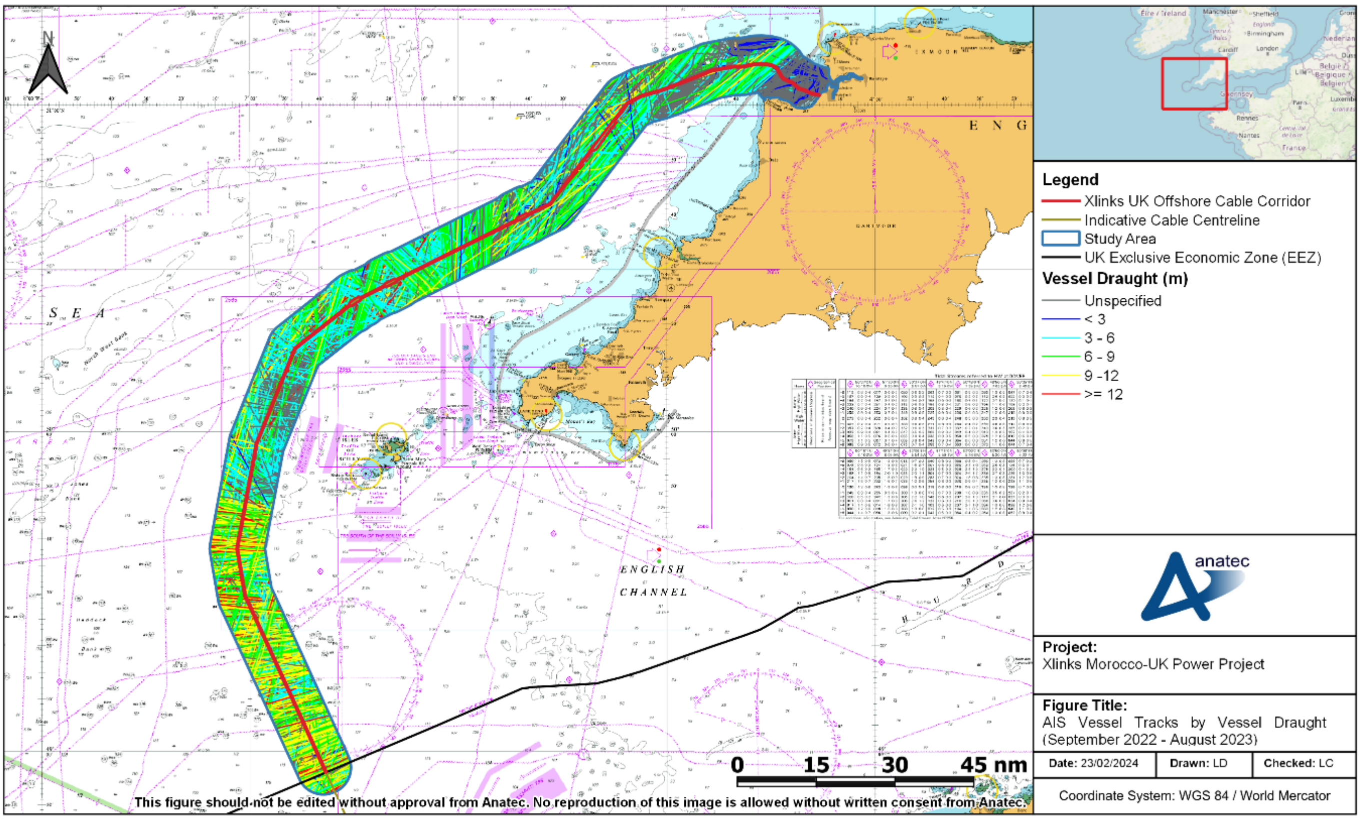



**Figure 9.16 Vessel Length Distribution**

The average length of vessels recorded within the study area was 134 m, with the largest vessel being a 400 m container ship recorded crossing the Offshore Cable Corridor while on passage to Tanger-Med in Morrocco. The largest vessels (250 – 400 m in length) were typical cargo vessels and tankers, and made up 10% of vessel traffic. Vessels in the smallest size category (0 – 50 m) were of various types, with recreational vessels and fishing vessels particularly prominent. Other vessels within this category included the 38 m passenger vessel operating between Ilfracombe, Lundy and Bideford, which was frequently recorded in the north of the study area.

## 9.6 Vessel Draught

Figure 9.17 presents the tracks of vessels recorded within the study area, colour-coded by vessel draught.




## Figure 9.17 AIS Vessel Tracks by Vessel Draught (September 2022 – August 2023)

Deeper draught vessels typically included cargo vessels and tankers, and were recorded mostly in the southern extent of the study area, crossing the Offshore Cable Corridor on passage to or from the English Channel. Shallower draught vessels were mostly recreational and fishing vessels, as well as RNLI lifeboats and the passenger ferry on the route between Ilfracombe, Bideford and Lundy. Vessels without available draught information were predominantly fishing and recreational vessels, which would typically be expected to have relatively shallow draughts.

Rotterdam was a commonly reported destination for the deepest draught vessels, while other deep draught vessels reported destinations including Port Talbot and Falmouth in the UK, IJmuiden and Vlissingen in the Netherlands, as well as further afield destinations such as Egypt, China and India.

Figure 9.18 presents the distribution of vessel draughts recorded within the study area, excluding 18% of vessels which had unspecified draughts.

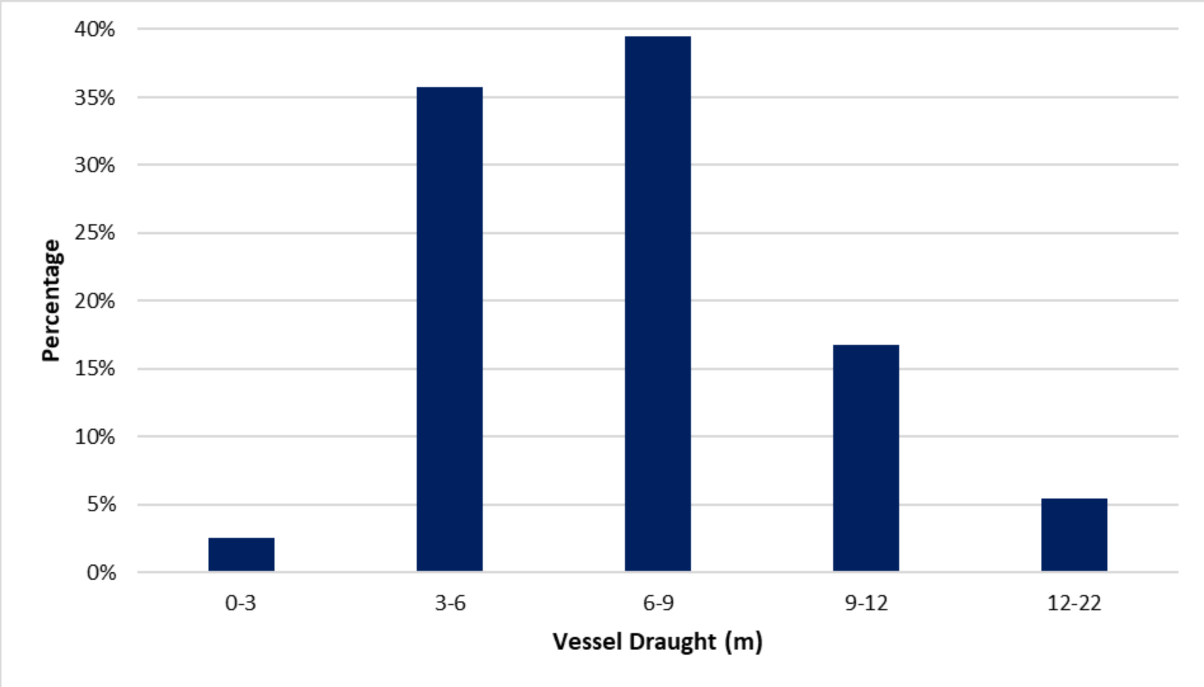
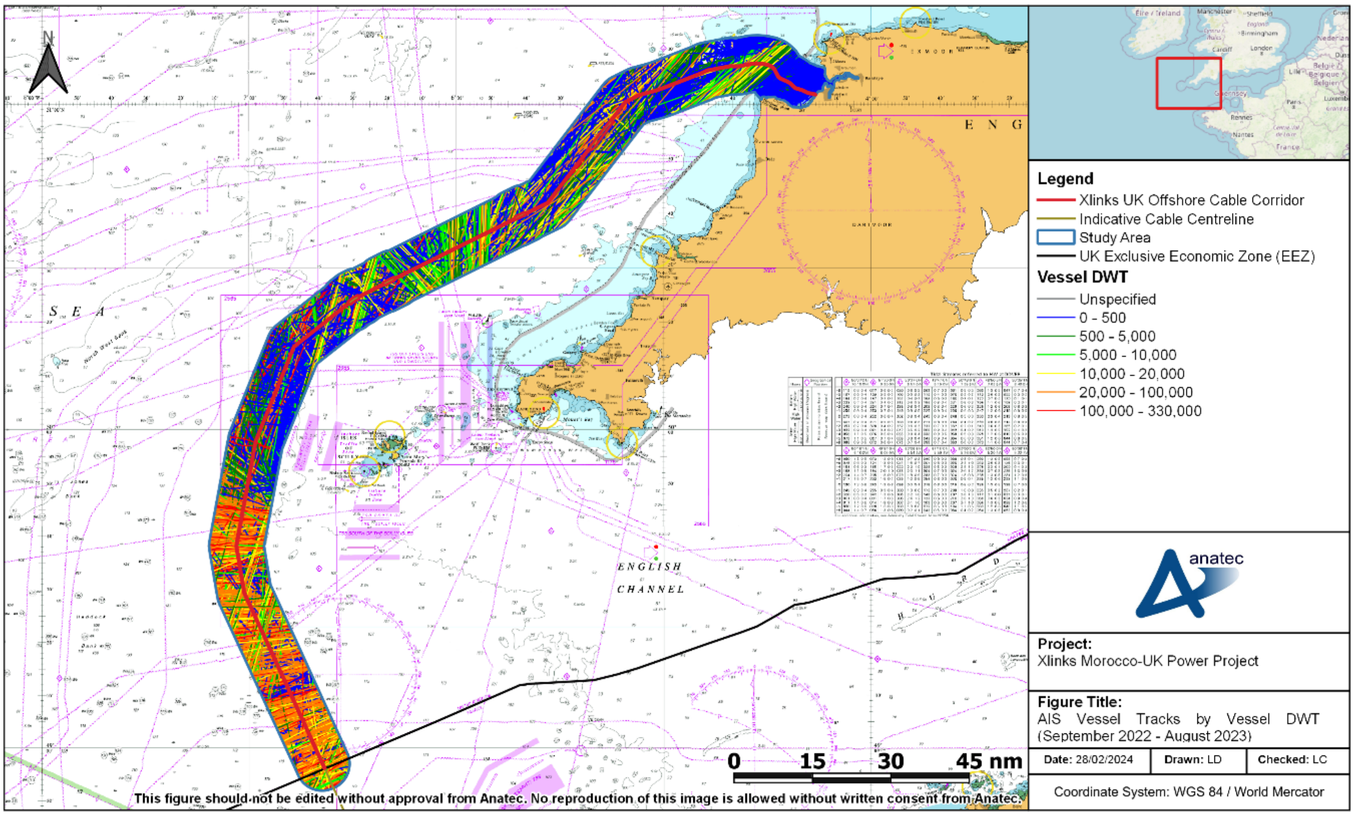



**Figure 9.18 Vessel Draught Distribution**

The average vessel draught recorded within the study area was 7.4 m, with the deepest draught vessel being a crude oil tanker heading to Rotterdam with a draught of 21.6 m. The majority of vessels broadcast a draught between 3 m and 9 m, with 39% between 6 m and 9 m, and a further 36% between 3 m and 6 m. Vessels with a draught deeper than 12 m made up approximately 5% of vessels within the study area.

## 9.7 Vessel DWT

Figure 9.19 presents the tracks of vessels recorded on AIS within the study area, colour-coded by deadweight tonnage (DWT).




### Figure 9.19 AIS Vessel Tracks by Vessel DWT (September 2022 – August 2023)

DWT traffic patterns were similar to length and draught, with the largest vessels typically recorded in the southern extent of the study area close to where the Offshore Cable Corridor passes into French waters. These large vessels were mostly cargo vessels and tankers crossing the Offshore Cable Corridor on passage through the English Channel between European ports such as Rotterdam and Bremerhaven and ports in the US and Canada. Large vessels were also recorded heading north-south across the Offshore Cable Corridor heading to the Bristol Channel and St George's Channel, typically associated with ports in Ireland or the west of the UK such as Port Talbot, Liverpool or Pembroke and destinations in Spain, Gibraltar and Egypt.

Figure 9.20 presents the distribution of vessel DWT recorded within the study area.

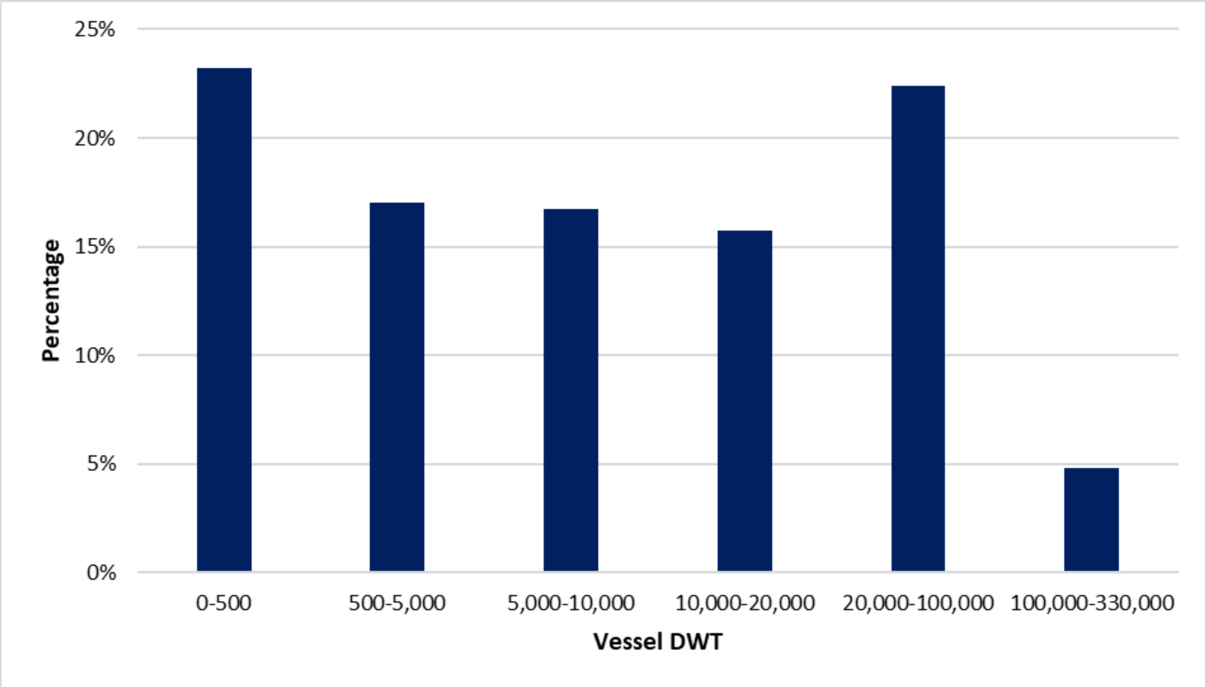



**Figure 9.20 Vessel DWT Distribution**

The average DWT recorded was 23,971, with the largest being a 333 m crude oil tanker, with a DWT of 321,225, heading to Mexico. The largest DWTs (greater than 100,000 DWT) made up less than 5% of vessels, and were typically recorded by similar crude oil tankers, passing between Rotterdam and the US. Smaller vessels (less than 500 DWT) were typically fishing vessels, recreational vessels, and passenger vessels such as the regular ferry between Bideford, Ilfracombe and Lundy, and were recorded throughout the study area.

## 9.8 Vessel Speed

Figure 9.21 presents the tracks of vessels recorded within the study area, colour-coded by vessel speed.

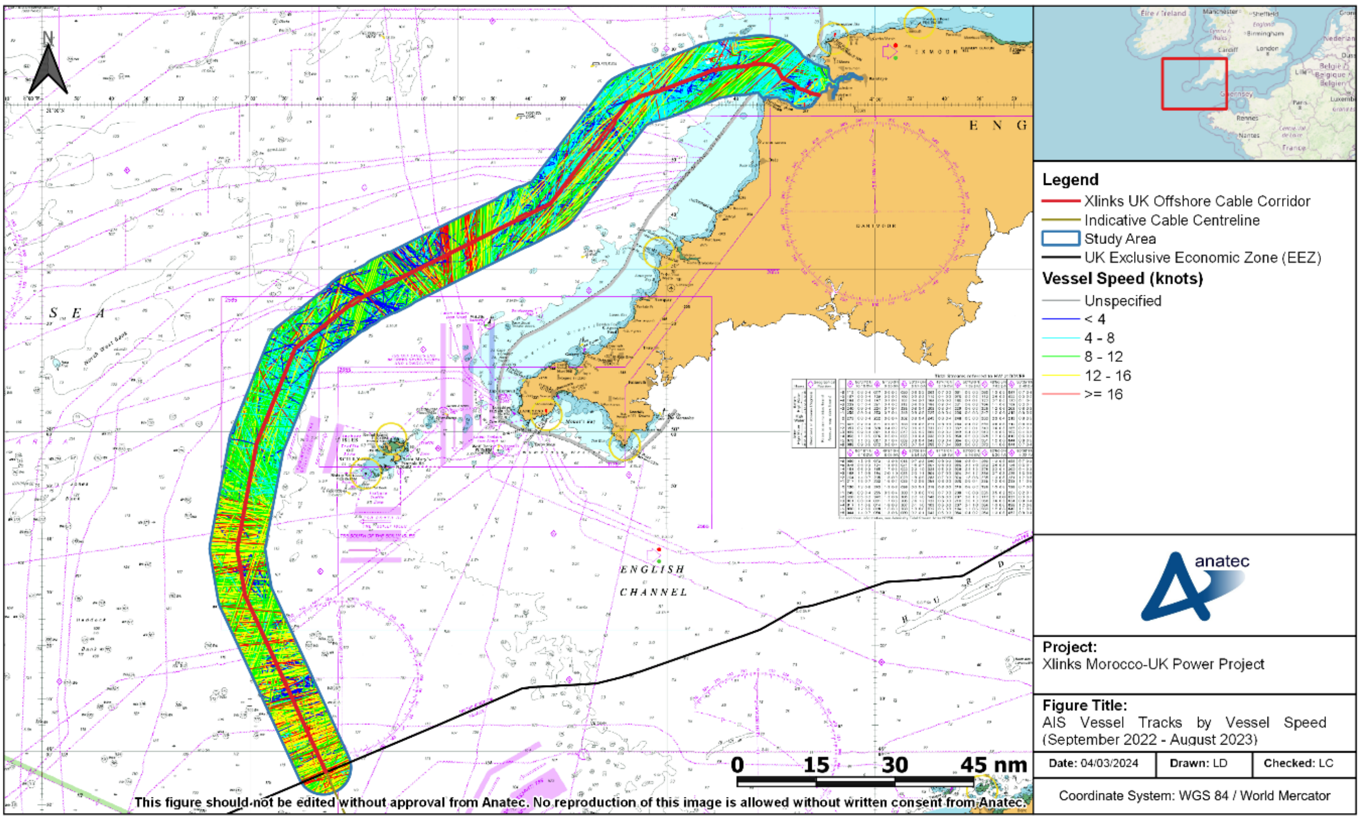



**Figure 9.21 AIS Vessel Tracks by Vessel Speed (September 2022 – August 2023)**

Vessel speeds varied throughout the study area, with fasters vessels tending to be those on main routes, such as those crossing the Offshore Cable Corridor to the south entering/exiting the English Channel, associated with the TSS lanes around the Isles of Scilly, or vessels crossing the Offshore Cable Corridor close to Bideford Bay associated with the Bristol Channel.

Figure 9.22 presents the distribution of vessel speeds recorded within the study area.

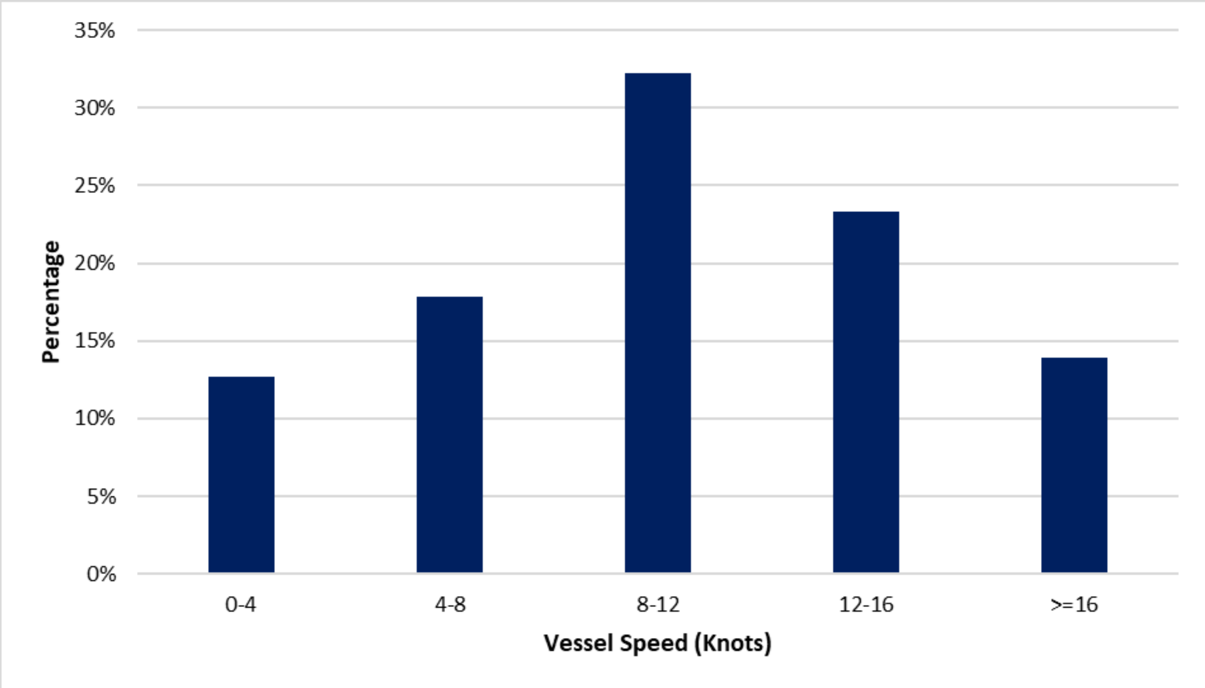


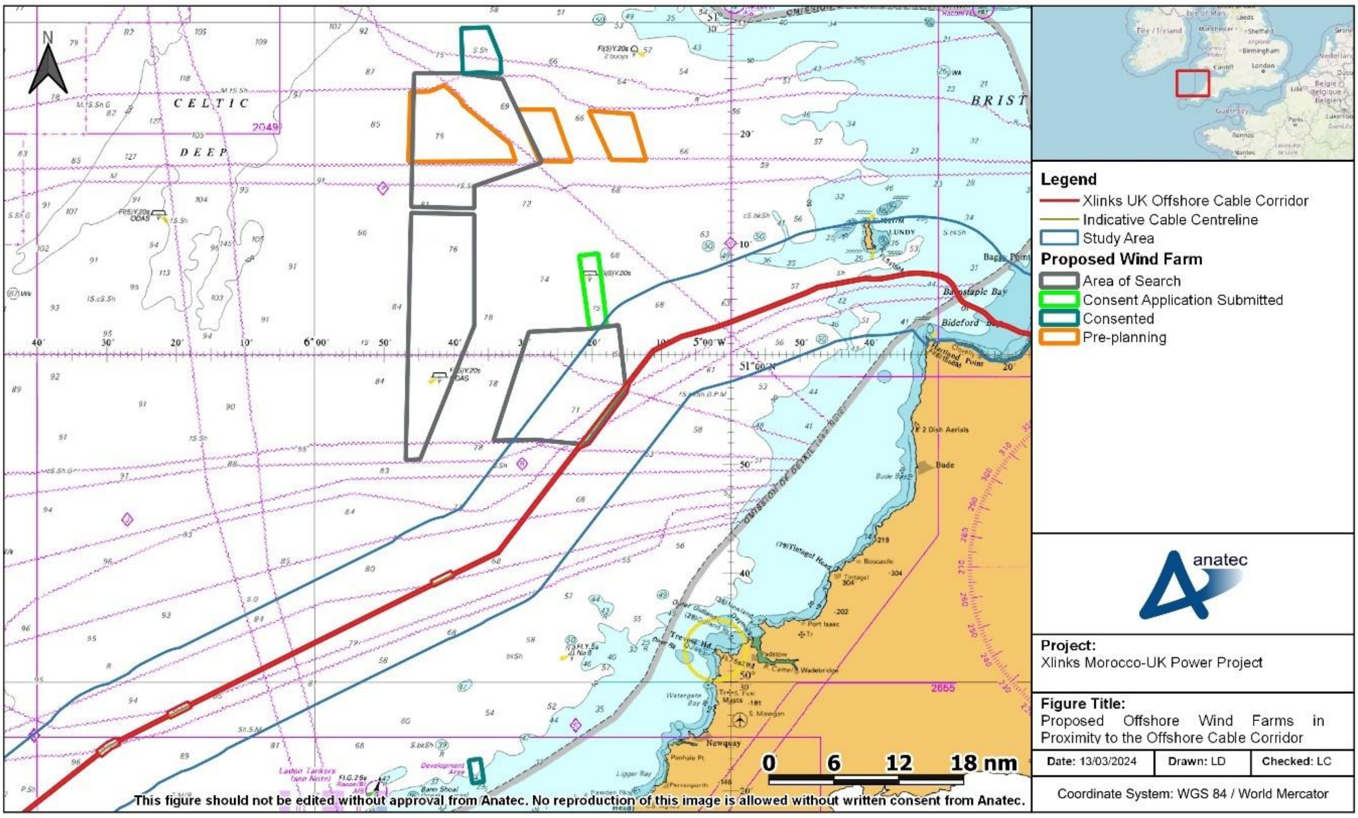

**Figure 9.22 Vessel Speed Distribution**

The average speed of vessels recorded on AIS within the study area was 10.4 knots, with the maximum speeds recorded being in excess of 30 knots. The fastest vessels typically consisted of wind farm crew transfer vessels, passenger vessels, recreational vessels and RNLI lifeboats. Vessels travelling at greater than 16 knots made up 14% of traffic, with lower speeds much more common.

## 9.9 Future Baseline Environment

This section details potential changes to shipping over the lifetime of the Proposed Development.

There are currently nine proposed offshore wind farm sites in the vicinity of the Offshore Cable Corridor which have the potential to impact shipping in the area. This includes the White Cross wind farm, which has submitted a consent application, as well as several projects in early planning phases including Petroc, Gwynt Glas, Llywelyn and Llŷr sites. The Erebus Wind Farm received consent in March 2023 to install seven floating turbines, and is located approximately 30 nm to the north west of the Offshore Cable Corridor. Further south, off St Ives, the TwinHub has consent to install four floating turbines, 16 nm to the southeast of the Offshore Cable Corridor. The proposed wind farms and areas of search for wind development in proximity to the Proposed Development are presented in Figure 9.23.




## Figure 9.23 Proposed Offshore Wind Farms in Proximity to the Offshore Cable Corridor

Although mostly in early planning stages, these developments may lead to changes to the baseline shipping if they are granted consent and are constructed, including increased traffic volumes due to the presence of project vessels both during construction and throughout the lifetime of the wind farm, as well as the displacement of existing shipping routes. In line with industry experience to date, it is anticipated that commercial vessels would typically maintain a minimum mean distance from wind farm structures, though smaller vessels such as fishing vessels may opt to pass through wind farms.

Port statistics for some of the most common commercial destinations have been reviewed to understand how traffic patterns might be expected to change over the lifetime of the Proposed Development. Figure 9.24 presents the most frequently reported destinations on AIS by commercial vessels.

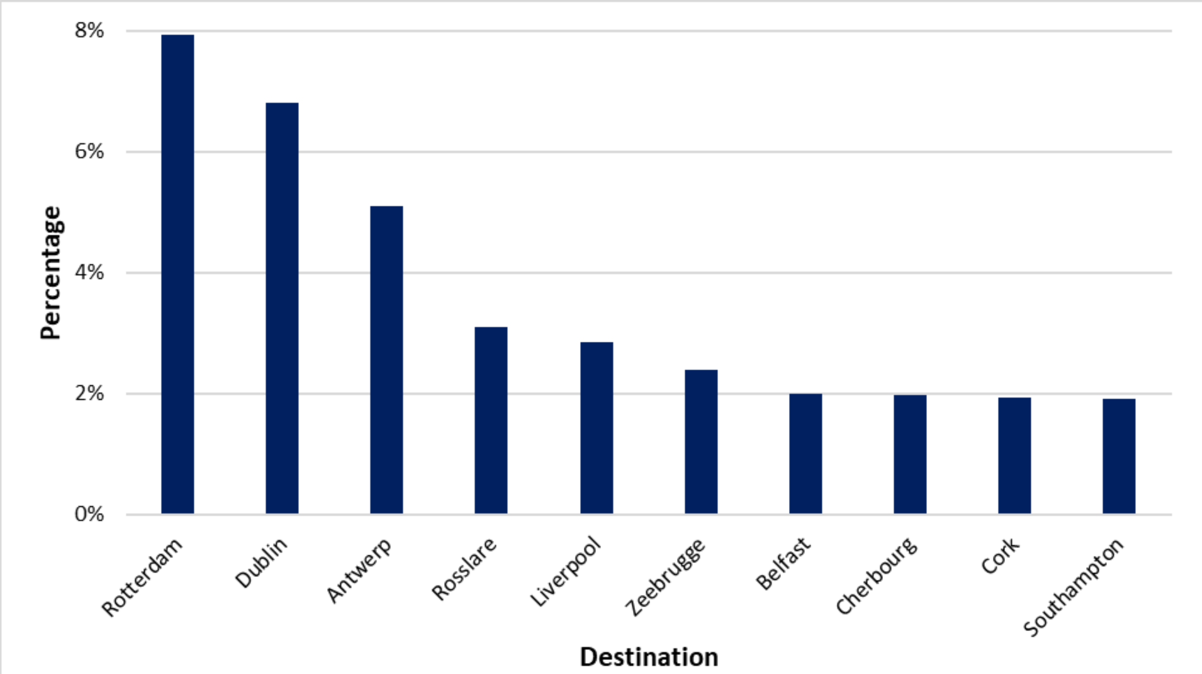



**Figure 9.24 Most Common Commercial Destinations (September 2022 – August 2023)**

Rotterdam was the most common destination reported by commercial vessels, accounting for approximately 8% of valid destinations broadcast by commercial vessels. Commercial throughput at Rotterdam has steadily increased since 2017, except for 2020, 2022, and 2023 which saw declines associated with the Covid-19 pandemic in 2020, as well as sanctions against Russia and the flattening of the Dutch economy in 2022. Depressed volumes of commercial throughput continued in 2023 due to the disruptive effects of continuing geopolitical unrest and low economic growth on shipping.

Rotterdam is currently undergoing construction on new deep-sea and inland shipping quays in the Prinses Amaliahaven, which will facilitate increased throughput in the future. It is anticipated that this will be completed in 2024. Further plans are in place to expand the existing container terminal, expected to be completed in 2025.

The Irish ports of Dublin (7%) and Rosslare (3%) were also frequently broadcast destinations by commercial vessels. Overall port arrivals at Rosslare Port have increased by 23% in the last five years, whilst arrivals at Dublin Port during the same period decreased by roughly 6%. However, combined arrivals for the two ports remained generally consistent between years. The largest decrease at Dublin Port occurred between 2019 and 2021 which could reflect the effects of the Covid-19 pandemic. It is noted that arrivals at Dublin Port increased by roughly 3% between 2021 and 2022, suggesting numbers may continue to rise in the future. The yearly commercial vessel arrivals at Dublin and Rosslare between 2018 and 2022 are presented in Figure 9.25.

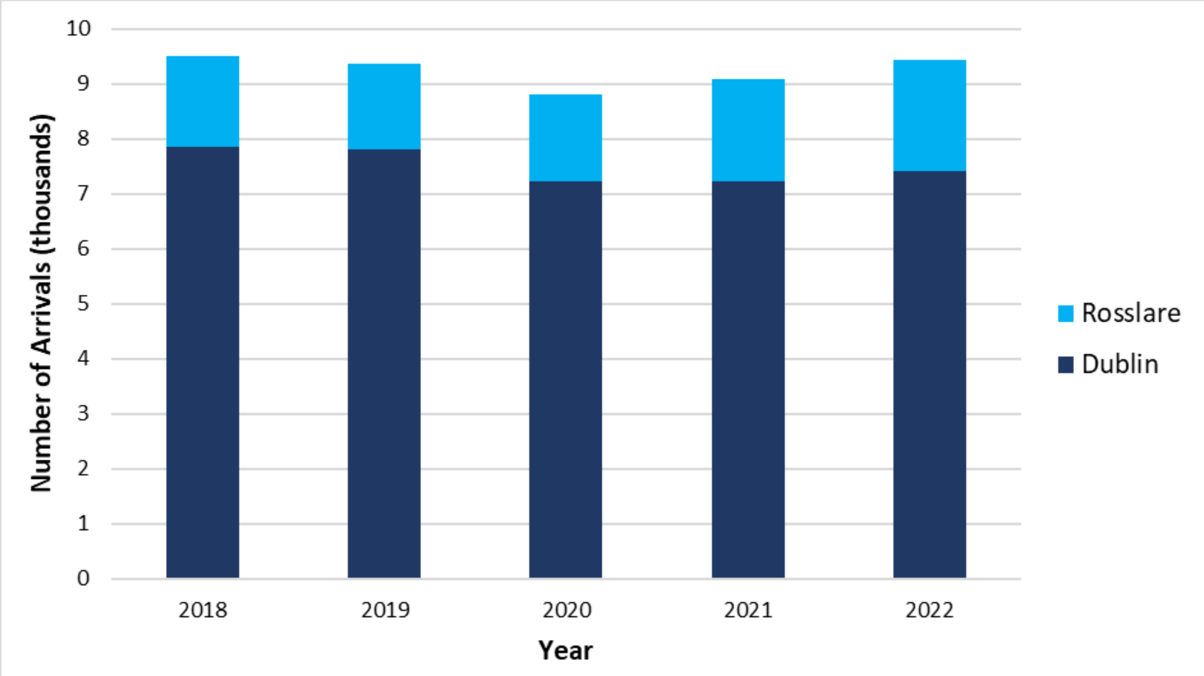



**Figure 9.25 Commercial Vessel Arrivals at Dublin and Rosslare (2018 – 2022)**

Antwerp (5%) was also a common destination broadcast on AIS. In October 2022, the Port of Antwerp-Bruges (Belgium) officially approved plans for the renewal of the quayside facilities and terminal at the Europa Terminal. This will include the deepening of the terminal by 2.5 m to accommodate larger vessels which will increase the terminal's capacity by over 700,000 Twenty Foot Equivalent Units (TEU) annually. Works commenced in 2022, and are anticipate to take up to nine years to complete. This development will allow the port to adapt to future shipping demands and accommodate larger container ships, which will increase the number of vessels able to berth there in the future.

The Port of Liverpool made up approximately 5% of commercial destinations, and is operated by Peel Ports, who have plans to invest £200m in sustainable port infrastructure projects by summer 2024 (Ref. xi). There are currently no detailed plans on expansion at Liverpool. Recent developments have included the completion of the Liverpool2 container terminal in 2016, which increased the port's ability to handle the largest container ships. Between 2017 and 2022, there has been an 11% decrease in vessel arrivals at Liverpool, with arrivals being relatively unchanged since 2020.

Fishing vessel made up approximately 15% of vessel traffic within the study area, however fishing trends are difficult to project accurately into the future, as these are dependent on numerous factors including fish stocks and quotas. Climate change may also play a significant role in future changes to fishing activity. Changes to legislation following Brexit may also impact the size and make-up of the fishing fleet in UK waters.

Recreational vessels made up approximately 7% of vessels within the study area, and activity can be similarly difficult to predict to that of fishing vessels, but is assumed to remain similar or slightly increase in future years. Similarly the make-up of recreational traffic may vary, with sail and electric-powered vessels expected to become more prominent in place of diesel-fuelled craft. The locations of recreational activity may also vary, while volume of activity may be dependent on other factors such as the weather, climate change and the economy.

# 10 NRA Impact Assessment

This section provides a qualitative and quantitative risk assessment (using FSA) for the hazards identified associated with the Proposed Development, based on baseline data, expert opinion, stakeholder feedback and lessons learnt from existing offshore developments.

For each hazard, various subsections are provided as appropriate to consider each component of the hazard, both qualitative and quantitatively.

Within each component of an overarching hazard, embedded mitigation measures which have been identified as relevant to reducing risk are listed, with full descriptions provided in Section 10.2. This is followed by statements defining the frequency of occurrence and severity of consequence for each component of the hazard in **bold** text, as defined in Section 4.2.

At the end of the assessment of each hazard, these frequency of occurrence and severity of consequence rankings are summarised, with the resulting significance of risk given in **highlighted bold** text, as defined in Section 4.2.

The impact assessment presented below details the preliminary findings, and will be updated based on consultation carried out to inform the final ES chapter and NRA.

## 10.1 NRA Impacts Overview

The impacts identified during each phase of the Proposed Development are summarised and listed below, with reference to the relevant phase; Construction (C), Operational (Op), Operational during repairs ($Op_{repair}$), Decommissioning with the cables left in-situ ($D_{in\text{-}situ}$) and Decommissioning with the cables removed ($D_{remove}$):

- Collision of a third-party vessel with a vessel associated with cable installation, maintenance or decommissioning (C, $Op_{repair}$, $D_{remove}$);
- Cable installation/decommissioning causing disruption to passing vessel routeing/timetables (C, $D_{remove}$);
- Increase in the risk of a vessel-to-vessel collision due to construction/decommissioning vessel activity (C, $D_{remove}$);
- Cable installation/decommissioning causing disruption to fishing and recreational activities (C, $D_{remove}$);
- Cable installation/decommissioning causing disruption to third party marine activities (e.g., military, dredging) (C, $D_{remove}$);
- Reduced access to local ports/harbour (C, $Op_{repair}$, $D_{remove}$);
- Anchor interaction with the cable (C, Op, $Op_{repair}$, $D_{in\text{-}situ}$, $D_{remove}$);
- A vessel engaged in fishing snags its gear on the cable (C, Op, $Op_{repair}$, $D_{in\text{-}situ}$, $D_{remove}$);
- Reduction in under keel clearance resulting from laid cable and associated protection (C, Op, $Op_{repair}$, $D_{in\text{-}situ}$, $D_{remove}$); and
- Interference with marine navigational equipment (Op, $Op_{repair}$).

## 10.2 Embedded Mitigation Measures

As part of the design process for the Proposed Development, a number of embedded mitigation measures have been adopted to reduce the potential for risk to shipping and navigation. These measures have and will continue to evolve over the project, as the Environmental Statement (ES) progresses and in response to consultation.

These measures include those identified as typically good or standard industry practice, and those that would be required to meet existing legislation requirements. As the project is committed to implementing these measures, along with standard sectoral practices and procedures, they are considered to make up part of the design of the Proposed Development. The embedded mitigation measures considered are presented in Table 10.1.

**Table 10.1 Embedded Mitigation Measures**

| Measure Adopted | How the Measure Will be Secured |
|---|---|
| Development of a Vessel Management Plan which would set out pre-agreed vessel routes, speeds, safety measures, communication expectations etc. | Pre-requisite contractor requirement secured via final Construction Environmental Management Plan (CEMP). |
| Suitable implementation and monitoring of cable protection as informed by Cable Burial Risk Assessment (CBRA), taking into account anchoring and fishing practices. Burial is preferred method of protection, with rock protection expected to be used at cable crossings and where target depth and burial with existing sediments is not possible. | Design parameters taken forward into Development Consent Order (DCO) and will form basis for specific contractor specifications. |
| Compass deviation effects will be minimised through cable design and burial, and separation distance between the two trenches.<br>A post-lay compass deviation assessment will be undertaken post-consent, once the detailed design and cable configuration is available, to confirm interference with magnetic position-fixing equipment is within acceptable limits. If it cannot be demonstrated that MCA deviation requirements can be met pre-construction, a post-construction compass deviation survey of the 'as laid' Offshore Cable Corridor will be undertaken. | Compass deviation effects will be required to be minimised in line with MCA requirements, which will be required to be met as part of the consent conditions. |

| Measure Adopted | How the Measure Will be Secured |
|---|---|
| Relevant policy guidance on water depth reduction to be followed during the design and construction of the project. Following further survey and detailed engineering, if areas are identified where external protection is required and the MCA condition of no more than 5% reduction in water depth is not achievable, a location specific review of impacts to shipping and consultation with the MCA will be carried out and additional mitigations agreed as required. | Water depth reduction will be required to be in line with MCA requirements, which will be required to be met as part of the consent conditions. |
| Promulgation of information via Notices to Mariners (NtM), Kingfisher bulletins, the Kingfisher Information Service – Offshore Renewable & Cable Awareness (KIS-ORCA) service, Radio Navigational Warnings on Very High Frequency (VHF) radio, Navigational Telex (NAVTEX), and/or broadcast warnings in advance of and during the offshore works. Details to be set out in the Vessel Management Plan. | Pre-requisite contractor requirement secured via final CEMP. Details of how information will be promulgated will be set out in the Vessel Management Plan (as part of CEMP). |
| Compliance with international legislation, both for Project vessels and third-party vessels. This includes the COLREGs and SOLAS. | Legal requirement to comply with international legislation. |
| A Fisheries Liaison Officer (FLO) will be appointed to allow for the communication and liaison between the applicant and commercial fisheries during the construction phases. | An FLO has already been appointed to the project, and will continue to be engaged for the duration of the construction phase as a minimum.<br>Listed in outline CEMP (although likely continue to be contracted to main client) and FLO requirement may be listed in deemed Marine Licence under DCO. |
| Cable installation vessels and support vessels will display appropriate lights and marks at all times, and where possible, broadcast their status on AIS. This will include indication of the nature of the work in progress and highlight their restricted manoeuvrability. | Pre-requisite contractor requirement secured via final CEMP. |

| Measure Adopted | How the Measure Will be Secured |
|---|---|
| Guard vessel(s) will be employed to work alongside the installation vessel(s) during the construction period. These will alert third-party vessels to the presence of the installation activity and provide support in the event of an emergency. | Pre-requisite contractor requirement secured via final CEMP. |
| Marine coordination and communication to manage Project vessel movements. | Pre-requisite contractor requirement secured via final CEMP. |
| Passing vessels will be requested to maintain a “safe” distance from installation vessels restricted in manoeuvrability. This will be monitored by guard vessels. | Pre-requisite contractor requirement secured via final CEMP. |
| The cable will be clearly marked on Admiralty Charts with associated note/warning about anchoring, trawling or seabed preparation. | Ongoing consultations and commitments to data sharing with the MCA and Trinity House. Data sharing commitment to the UKHO direct as required to update Admiralty Charts. |
| Liaison with pilotage service at Bideford to reduce impact on vessel access and disruption to activities. | Good practice, and via Notices to Mariners. |
| A Marine Pollution Contingency Plan (MPCP) will be produced as part of the CEMP and will include measures to minimise the impact of any events as well as compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL). | Pre-requisite contractor requirement secured via final CEMP. |

## 10.3 NRA Assessment of Impacts

This section presents the analysis of the impacts that have been considered as part of the FSA process.

### 10.3.1 Assessment of Construction Effects

#### 10.3.1.1 Collision of a Passing Third-Party Vessel with a Vessel Associated with Cable Installation

There is an increased risk of collision due to the presence of vessels associated with the installation of the Proposed Development. This includes vessels involved in HDD works, pre-lay surveys, preparation of the route, cable-lay and post-lay burial and protection works.

The nature of certain aspects of cable installation requires large, slow-moving vessels which will be Restricted in their Ability to Manoeuvre (RAM). Therefore, these vessels may have limited ability to take avoidance action to prevent a collision with a passing vessel. The risk is considered to be lower for smaller support vessels such as tugs and guard vessels due to their increased mobility.

Vessel collision risk will be higher in busier areas of shipping. The vessel traffic baseline identified busy areas of shipping associated with vessels utilising the TSS lanes around the Isles of Scilly, as well as crossing the Offshore Cable Corridor between Lundy and the landfall, associated with vessels entering the Bristol Channel.

The construction phase of the Proposed Development is anticipated to commence in late 2027 (initial pre-lay works). Main cable installation works are expected to take place over several campaigns between the two cable bundles, with Bipole 1 (first cable bundle) provisionally scheduled to begin in Q1 2028; it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a third section laid in 2029. Dates are indicative at this time and may be influenced by e.g. weather limitations of the CLV, with further detail and clarification on the timetable to be provided in the ES.

For Bipole 2 (second cable bundle), offshore works would begin in 2030 and would follow a similar schedule. At any given time, the spatial extent to which vessels are required to deviate is expected to be small.

In addition to the main cable installation works, there will be project vessel movements associated with HDD works, pre-lay surveys, preparation of the route, pre-sweeping, and post-lay burial and protection works. HDD works are planned to be carried out ahead of the main cable installation and may involve the use of up to two jack-up vessels working in the nearshore area. Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

Project vessels will be managed by marine coordination, will display suitable marks and lights, will broadcast on AIS (including relevant navigational status where appropriate) and will be compliant with relevant Flag State regulations including the COLREGs and SOLAS. Details of construction activities, including any advisory safe passing distances will be suitably promulgated via NtM, Kingfisher bulletins, Radio Navigational Warnings, NAVTEX and/or broadcast warnings to maximise awareness of ongoing construction activities. Communications with local ports and harbours, including pilot vessel operators at Bideford, about the construction activities and appointment of a FLO will also help to ensure local users are aware of works and minimise collision risk. Guard vessels will also be used where deemed necessary to raise awareness of construction work to passing vessels, and guide vessels around any areas of construction activities.

**Severity of Consequence**

The most likely consequences in the event of a collision incident between a project vessel and third-party vessel are minor contact between the vessels resulting in minor damage to property and minor reputational effects on business but no perceptible effect on people. The worst-case scenario could involve one of the vessels foundering resulting in Potential Loss of Life (PLL) and the environmental consequence of pollution. Such a scenario would be more likely if the third-party vessel involved was a small craft which may have weaker structural integrity than a commercial vessel. If pollution were to occur in proximity to the Proposed Development, or as a result of a collision involving a project vessel, then the MPCP would be implemented to minimise the impact on the environment.

Overall, the severity of consequence is considered to be **moderate**.

**Frequency of Occurrence**

With the mitigation measures noted above implemented, it is considered unlikely that a close encounter between a third-party vessel and a project vessel will occur. In the event that such an encounter does occur, collision avoidance action would be implemented by the vessels as per the COLREGs, including Rule 18 which governs responsibilities between vessels if one is RAM, thus ensuring that the likelihood of the encounter developing into a collision incident is very low.

The frequency of occurrence is therefore considered to be **remote**.

**Significance of the Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in Environmental Impact Assessment (EIA) terms.

#### 10.3.1.2 Cable Installation Causing Disruption to Passing Vessel Routeing/Timetables

Construction works may also cause disruption to vessel routeing/timetables. This will most likely affect busier areas of shipping where vessels are transiting on regular routes with a defined schedule. Within the study area, this is most likely to affect vessels making use of the TSS lanes around the Isles of Scilly, crossing the Offshore Cable Corridor entering or leaving the Bristol Channel, or regular vessels passing between Bideford and Lundy.

The construction phase of the Proposed Development is anticipated to commence in 2027 (initial pre-lay works). Main cable installation works are expected to take place over several campaigns between the two cable bundles, with the first bundle provisionally scheduled to begin in Q1 2028; it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a third section laid in 2029. Dates are indicative at this time and may be influenced by e.g. weather limitations of the CLV, with further detail and clarification on the timetable to be provided in the ES.

Additionally, cable installation will be a 24-hour operation to reduce the overall number of days required for the construction phase. At any given time, the spatial extent to which vessels are required to deviate is expected to be small.

In addition to the main cable installation works, there will be project vessel movements associated with HDD works, pre-lay surveys, preparation of the route and post-lay burial and protection works. HDD works are planned to be carried out ahead of the main cable installation and may involve the use of up to two jack-up vessels working in the nearshore area. Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

In nearshore areas, disruption may be caused to vessels on approach to ports and harbours in proximity to the Offshore Cable Corridor, particularly vessels within Bideford Bay near the landfall.

Through promulgation of information, the majority of vessels should be aware of ongoing construction activities, allowing passage planning to be carried out to minimise impact on schedules.

**Severity of Consequence**

The most likely consequences are minor reputational effects on business but no perceptible effect on people.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The impact will be present throughout the construction phase, which will take place over several phases, beginning in 2027. The spatial extent around which vessels are required to deviate around vessels which are RAM is expected to be small at any given time. Cable installation will also be a 24-hour operation, which will reduce the overall length of the construction phase. Promulgation of information ensuring vessels are aware of works should also allow third-party vessels to passage plan if required to minimise disruption.

The frequency of occurrence is considered to be **reasonably probable**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be reasonably probable. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.3 Increase in the Risk of Vessel-to-Vessel Collision due to Construction Activity

Construction activities may also cause displacement of third-party vessels, leading to an increased risk of collision between two third-party vessels. In particular, vessels may be required to deviate around large, slow-moving vessels such as CLVs which may be RAM.

The risk of vessel displacement leading to increased encounters between third-party vessels and therefore increased collision risk is likely to be greatest in high density shipping areas, such as routes associated with the TSS lanes around the Isles of Scilly and between Lundy and the landfall.

The construction phase of the Proposed Development is anticipated to commence in 2027 (initial pre-lay works). Main cable installation works are expected to take place over several campaigns between the two cable bundles, with the first bundle provisionally scheduled to begin in Q1 2028; it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a third section laid in 2029. Dates are indicative at this time and may be influenced by e.g. weather limitations of the CLV, with further detail and clarification on the timetable to be provided in the ES.

Additionally, cable installation will be a 24-hour operation to reduce the overall number of days required for the construction phase. At any given time, the spatial extent to which vessels are required to deviate is expected to be small.

In addition to the main cable installation works, there will be project vessel movements associated with HDD works, pre-lay surveys, preparation of the route, and post-lay burial and protection works. HDD works are planned to be carried out ahead of the main cable installation and may involve the use of up to two jack-up vessels working in nearshore area. Burial and protections activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

Ensuring third-party vessels are aware of construction activities through mitigation measures such as promulgation of information will allow vessels to review, and revise if necessary, their passage plans prior to departure. In addition, project vessels will be managed by marine coordination, will display suitable marks and lights, will broadcast on AIS where appropriate (including relevant navigational status for vessels which are RAM) and will comply with relevant Flag State regulations including both SOLAS and the COLREGs. Guard vessels will also be used to raise awareness and guide vessels around any areas of construction activity.

**Severity of Consequence**

In the event of a collision incident between third-party vessels, the most likely consequences are minor contact between the vessels resulting in minor property damage and minor reputational effects on business, but no perceptible effects on people. The maximum adverse scenario could involve the foundering of one or more vessels, resulting in PLL and the environmental consequence of pollution. Such a scenario would be more likely to occur if a collision incident involved a smaller craft, which may have weaker structural integrity than a commercial vessel. If pollution were to occur in proximity to the Proposed Development, then the MPCP would be implemented to minimise the impact on the environment.

Overall, the severity of consequence is considered to be **moderate**.

**Frequency of Occurrence**

The impact will be present throughout the construction phase, which will take place overall several phases, beginning in 2027. As previously noted, the spatial extent around which vessels are required to deviate around vessels which are RAM is expected to be small at any given time. Cable installation will also be a 24-hour operation, which will reduce the overall length of the construction phase. Promulgation of information ensuring vessels are aware of works should also allow third-party vessels to passage plan if required.

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.4 Cable Installation Causing Disruption to Fishing and Recreational Activity

During the construction phase, there is a risk that construction works cause disruption to fishing and recreational vessels within the study area. From the baseline characterisation, it can be seen that there are fishing and recreational vessels recorded throughout the study area. This impact is likely to be greatest for recreational users in nearshore areas, such as close to the cable landfall within Bideford Bay, and for fishers throughout the study area. Fishing and recreational vessels may be displaced from these typical areas into busier areas, increasing the likelihood of encounters with larger commercial vessels. This impact will be present throughout the construction phase, including the main cable installation, as well as HDD works, pre-lay surveys, preparation of the route and post-lay burial and protection works.

The construction phase of the Proposed Development is anticipated to commence in 2027 (initial pre-lay works). Main cable installation works are expected to take place over several campaigns between the two cable bundles, with the first bundle provisionally scheduled to begin in Q1 2028; it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a third section laid in 2029. Dates are indicative at this time and may be influenced by e.g. weather limitations of the CLV, with further detail and clarification on the timetable to be provided in the ES.

Additionally, cable installation will be a 24-hour operation to reduce the overall number of days required for the construction phase. At any given time, the spatial extent to which vessels are required to deviate is expected to be small, with very limited temporary displacement of small vessels into busier routes.

In addition to the main cable installation works, there will be project vessel movements associated with HDD works, pre-lay surveys, preparation of the route, pre-sweeping, and post-lay burial and protection works. HDD works are planned to be carried out ahead of the main cable installation and may involve the use of up to two jack-up vessels working in nearshore area. Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

Promulgation of information and the use of guard vessels where required are expected to ensure sea users are aware of construction works. However, recreational users may be less aware of construction works than commercial vessels. Liaison with local ports/harbours and distribution of local NtMs will help to inform recreational vessels of construction works. The use of promulgation methods including Kingfisher bulletins should also assist with increasing awareness among fishers and recreational users. The appointment of an FLO will help raise awareness among local fishers. All vessels will be expected to comply with international marine legislation, including the COLREGs and SOLAS.

**Severity of Consequence**

The most likely consequences from fishing and recreational disruption are minor reputational effects on business, with no perceptible impact on people.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **reasonably probable**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be reasonably probable. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.5 Cable Installation Causing Disruption to Third-Party Marine Activities

There is a potential for construction works to cause disruption to third-party marine activities, such as military exercises or dredging. As noted in the baseline environment characterisation, there are military exercise areas within the study area, with one of these being a navy exercise area overlapping the south of Offshore Cable Corridor. A further three exercise areas relating to the Air Force are located overlapping the north of the Offshore Cable Corridor. Therefore, there is potential for military exercises to be disrupted by cable installation works. Military vessels were generally observed to be transiting through the study area, except for vessels in Bideford Bay and to the east of Lundy. It is noted that military vessels are not required to broadcast on AIS and therefore may be under-represented.

The construction phase of the Proposed Development is anticipated to commence in 2027 (initial pre-lay works). Main cable installation works are expected to take place over several campaigns between the two cable bundles, with the first bundle provisionally scheduled to begin in Q1 2028; it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in

2028 and a third section laid in 2029. Dates are indicative at this time and may be influenced by e.g. weather limitations of the CLV, with further detail and clarification on the timetable to be provided in the ES.

Additionally, cable installation will be a 24-hour operation to reduce the overall number of days required for the construction phase. At any given time, the spatial extent to which vessels are required to deviate is expected to be small.

In addition to the main cable installation works, there will be project vessel movements associated with HDD works, pre-lay surveys, preparation of the route, pre-sweeping, and post-lay burial and protection works. HDD works are planned to be carried out ahead of the main cable installation and may involve the use of up to two jack-up vessels working in nearshore area. Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

Dredgers were recorded within the study area; however these were observed to be transiting rather than carrying out dredging.

**Severity of Consequence**

The most likely consequences from disruption to third-party marine activities are minor reputational effects on business but no perceptible effect on people.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

Given the low volumes of military vessels and dredgers recorded within the study area, and that the vast majority of these were recorded transiting rather than engaged in activities, it is anticipated that any disruption can be suitably managed by liaison with the MoD in advance of construction works. The Defence Infrastructure Organisation noted in the Scoping Opinion that the MoD would be able to provide specific advice relating to navigation when more detail on the Proposed Development is available.

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.6 Reduced Access to Local Ports/Harbours

There is potential for reduced access to local ports and harbours due to construction works, particularly for nearshore works in Bideford Bay close to the landfall. This is most likely to affect ports and harbours within the Rivers Taw and Torridge, namely Bideford, Appledore and Yelland. The entrance to the rivers lies approximately 2.7 nm to the north of the landfall of the Offshore Cable Corridor, with entrance only recommended two hours either side of high water. Pilotage is operated by the Port of Bideford, with the pilot boarding station located 2.6 nm north of the cable landfall.

Vessel movements associated with construction activities may lead to temporary reduction of access or disruption to pilotage, particularly if project vessels are using one of the local harbours. HDD works in particular have potential to lead to disruption given these may involve large jack-up vessels which are RAM in nearshore areas.

The construction phase of the Proposed Development is anticipated to commence in 2027 (initial pre-lay works). Main cable installation works are expected to take place over several campaigns between the two cable bundles, with the first bundle provisionally scheduled to begin in Q1 2028; it is anticipated that these works would be completed in three sections each taking approximately one month. It is currently envisaged that two sections will be laid in 2028 and a third section laid in 2029. Dates are indicative at this time and may be influenced by e.g. weather limitations of the CLV, with further detail and clarification on the timetable to be provided in the ES.

Additionally, cable installation will be a 24-hour operation to reduce the overall number of days required for the construction phase. At any given time, the spatial extent to which vessels are required to deviate is expected to be small.

In addition to the main cable installation works, there will be project vessel movements associated with HDD works, pre-lay surveys, preparation of the route and post-lay burial and protection works. HDD works are planned to be carried out ahead of the main cable installation and may involve the use of up to two jack-up vessels working in the nearshore area. Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

Project vessels will be managed by marine coordination, will display suitable marks and lights, will broadcast on AIS (including relevant navigational status where appropriate) and will be compliant with relevant Flag State regulations including the COLREGs and SOLAS. Promulgation of information and liaison with local pilots, ports and harbours should also limit disruption to access.

**Severity of Consequence**

Vessels which are RAM used during both HDD works and the main cable installation, such as the CLV or jack-up vessels may lead to a temporary reduction in access to vessels using Bideford, Yelland or Appledore. The most likely consequences are minor reputational effects on business but no perceptible effect on people.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The impact will be present during installation of the cable, particular during nearshore works at the landfall. Cable-lay is expected to take place over several stages, with works beginning in March 2028.

Based on the AIS data, less than one vessel per day was recorded entering the rivers. Vessel types using ports/harbours within the rivers were mainly fishing and recreational vessels, with a regular passenger route to Lundy and Ilfracombe also recorded. It is noted that small craft entering the area may be under-represented on AIS.

The frequency of occurrence is therefore considered to be **reasonably probable**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be reasonably probable. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.7 Anchor Interaction with the Cable

There is a potential for risk of interaction from anchors with surface-laid cables prior to burial, during which time the cable will be exposed. Burial and protection activities would progress broadly in parallel, minimising the period during which the cable is exposed on the seabed, with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay).

There is a risk that a nearby anchored vessel may lose its holding ground, and subsequently drag anchor over the cable. Vessels at anchor within the study area (baseline assessment) were mostly located within Bideford Bay or in proximity to Lundy. There was a low level of anchoring recorded across the majority of the study area.

There is also a risk that a vessel may suffer engine failure, and choose to drop anchor to avoid drifting into an emergency situation such as collision, allision or grounding. This is most likely to occur in areas of busy shipping, such as those associated with the TSS lanes around the Isles of Scilly or on passage to/from the Bristol Channel.

In open waters, where depths are deeper and anchoring not always feasible, it is more likely that a vessel attempts to fix the problem or awaits assistance.

**Severity of Consequence**

While the cable is exposed, any vessel anchor could interact with it. Should an anchor become snagged on the cable, there could be a risk of injury while trying to free it. If the anchor cannot be freed from the cable, the safest action is to the slip the anchor, rather than attempting to raise or cut the cable.

The most likely consequences are limited damage to property (anchoring vessel or subsea cable), with greater damage possible depending on the anchor size and the nature of the interaction.

The severity of consequence is therefore considered to be **moderate**.

**Frequency of Occurrence**

As noted, the majority of anchoring activity takes place within Bideford Bay, close to the cable landfall, or off Lundy. Anchoring activity within the study area is generally low, with less than a vessel every two days recorded at anchor.

Within the study area, the busiest areas of shipping are associated with vessels using the TSS lanes around the Isles of Scilly, and crossing the Offshore Cable Corridor in proximity to the landfall on passage to / from the Bristol Channel. A review of historical incident data from the RNLI revealed that machinery failures were among the most common incident type in the study area, with these having the potential to lead to an emergency anchoring situation.

Although there may be limited decision-making time in the event of a vessel drifting towards a hazard, charting of infrastructure including all subsea cables will inform any decision to anchor, as per Regulation 34 of SOLAS.

Mitigation measures will include promulgation of information, to ensure vessels are aware of the exposed cable, and the use of guard vessels where exposed areas of cable are considered to present a significant risk to navigation.

The frequency of occurrence is considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.8 Vessel Engaged in Fishing Snags its Gear on the Cable

5.8.95 Similar to impacts associated with vessel anchors, there is the potential for risk of interaction from fishing gear with surface-laid cables prior to burial or installation of external protection. As previously noted, this is expected to be a short period as cable lay and burial / protection are expected to be carried out in parallel.

**Severity of Consequence**

Although fishers are advised to follow the current maritime industry guidance (MGN 661, the Mariner's and all Admiralty charts) and avoid demersal trawling (and anchoring) in the immediate vicinity of the cables, it is acknowledged that fishing may still occur over the cables either inadvertently, or at the discretion of fishing vessel operators.

There is higher risk of snagging from demersal gear if the cable is exposed. The response from the crew includes reducing/reversing the propulsive force, attempting to unfasten the equipment, or releasing the gear and therefore in the majority of snagging incidents, it should be possible to recover the situation without any serious consequences (e.g. injury or fatality to crew members). However, accident data from the MAIB indicates that safe recovery from a snagging incident is not always the outcome. Consequences of snagging therefore range from damage to gear and the cable, loss of stability due to lines being put under strain and in the worst case, capsize of the vessel, men overboard and risk of injury or fatality. For example, a risk of capsize could occur if the vessel attempted to free its gear by raising the cable rather than releasing the gear.

The severity of consequence is therefore considered to be **serious**.

**Frequency of Occurrence**

Fishing vessels carrying demersal gear that interacts with the seabed when deployed present the greatest risk of snagging on subsea cables. Static gear types (e.g., potters/whelkers and gill netters) are not considered to present a safety risk from snagging, as they are able to select the position of their gear to avoid any subsea cables. Demersal trawlers made up 34% of all fishing vessels recorded in the study area. Demersal fishing was prevalent throughout the study area, with the exception of near Lundy and off the northwest of the Devon coast. It is noted that fishing vessels may be under-represented on AIS, particularly in coastal areas. However, vessels not on AIS are most likely to be using static gear, which is not considered a snagging risk.

It is expected that mitigation measures including the appointment of an FLO, promulgation of information via means including Kingfisher bulletins and local communications will help ensure fishers are aware of exposed cable and avoid fishing directly over it. Guard vessels will also be in place to raise awareness of exposed cable where a significant risk to navigation has been found.

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be serious, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.1.9 Reduction in Under Keel Clearance from Laid Cable and Associated Protection

There is a risk that external cable protection measures reduce under keel clearance leading to potential vessel grounding incidents. This could lead to subsequent capsize, injury, loss of life, oil spills, etc. In general, this risk is greatest in coastal areas where existing water depths are shallower. Burial and protection activities would progress broadly in parallel with the expectation that cable lay and the start of burial would be just a few days apart (noting that burial and protection activities would take longer to complete than the cable lay). This impact may be present during the construction phase as soon as the first section of cable requiring external protection has been laid.

It is planned to bury the cable to a target depth of 1.5 m. External protection up to an approx. maximum height of 1.4 m will be required at 21 cable crossings. Where seabed characteristics do not allow full burial protection, rock protection may extend above seabed level, up to 1 m in height. Should external protection reduce water depth by more than 5% in any area, this will require consultation with the MCA and further detailed assessment may be required following further surveys and detailed engineering to ensure navigational safety is not compromised.

### Severity of Consequence

Should a vessel grounding occur, the most likely consequences are minor damage to property and minor reputational effects on business but no perceptible effect on people. The maximum adverse scenario may include the vessel foundering resulting in PLL and the environmental consequence of pollution. If pollution were to occur in proximity to the Proposed Development, then the MPCP would be implemented to minimise the impact on the environment.

Overall, the severity of consequence is considered to be **moderate**.

### Frequency of Occurrence

The likelihood of a grounding is greater for larger vessels with deeper draughts noting that deep draught vessels within the study area were typically recorded passing further offshore in deeper water as opposed to coastal areas.

The maximum height of external protection will be 1.4 m, which will be used at the 21 cable crossings. Elsewhere rock protection extending above the seabed level is considered to be the last resort in terms of preferred protection, with other burial techniques pursued in the first instance.

The average draught of vessels recorded within the study area was 7.0 m, while the maximum draught was 21.6 m. The maximum draught was recorded by a crude oil tanker visiting Rotterdam, crossing the Offshore Cable Corridor south of the Isles of Scilly in water depths in excess of 100 m. Draughts in the shallower areas around the landfall did not typically exceed 5 m in water depths below 20 m.

Due to the temporary nature of this impact during the construction phase, the frequency of occurrence is considered to be **extremely unlikely**.

### Significance of Effect

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

### 10.3.2 Assessment of Operational Effects

The impacts of the operation and maintenance phase of the Proposed Development have been assessed. A description of the potential effect on receptors caused by each identified impact is given below. Unless otherwise specified, each impact is relevant to both the operational and operational-repair phases.

#### 10.3.2.1 Collision of a Passing Third-Party Vessel with a Vessel Associated with Cable Maintenance

Once the Proposed Development is operational, the risk of collision between third-party vessels and a project vessel remains only during periods of maintenance and repair work, or during inspection surveys. In the five years following installation, it is anticipated that surveys will be conducted up to once a year, then approximately every five years for the 50 year operational lifetime of the cables. Surveys would be carried out by a single survey vessel.

Unplanned maintenance works (operational-repair) may require cable repairs involving the de-burial and recovery of the cable, before following a similar procedure to installation for repair, but at a smaller, local scale. Therefore vessels which are RAM may be required to carry out repairs. Project vessels will be managed by marine coordination, will display suitable marks and lights, will broadcast on AIS and be compliant with relevant Flag State regulations including SOLAS and the COLREGs.

As per the construction phase, other key mitigation measures will include promulgation of information via means such as NtM, Kingfisher bulletins, Radio Navigational Warnings, NAVTEX and/or broadcast warnings to maximise awareness of repair works.

**Severity of Consequence**

The most likely consequences in the event of a collision incident between a project vessel and third-party vessel are minor contact between the vessels resulting in minor damage to property and minor reputational effects on business but no perceptible effect on people. The worst-case scenario could involve one of the vessels foundering resulting in PLL and the environmental consequence of pollution. Such a scenario would be more likely if the third-party vessel involved was a small craft which may have weaker structural integrity than a commercial vessel. If pollution were to occur in proximity to the Proposed Development, or involving a project vessel, then the MPCP would be implemented to minimise the impact on the environment.

Overall, the severity of consequence is considered to be **moderate**.

**Frequency of Occurrence**

With the mitigation measures noted above implemented, it is considered unlikely that a close encounter between a third-party vessel and a project vessel will occur. In the event that such an encounter does occur, collision avoidance action would be implemented by the vessels as per the COLREGs, including Rule 18 which governs responsibilities between vessels if one is

RAM, thus ensuring that the likelihood of the encounter developing into a collision incident is very low. Furthermore, although the risk will be present throughout the 50 year operational lifetime of the project, project vessel presence during the operational phase will be limited to single survey vessels during routine surveys (operational phase- normal), or vessels carrying out unplanned repair works (operational phase-repair).

The frequency of occurrence is therefore considered to be **extremely unlikely**.

**Significance of the Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.2.2 Reduced Access to Local Ports/Harbours

There is potential for reduced access to local ports and harbours due to repair works during the operational phase, particularly for nearshore works in Bideford Bay close to the landfall.

Unplanned maintenance works (operational-repair) may require cable repairs involving the de-burial and recovery of the cable, before following a similar procedure to installation for repair, but at a smaller, local scale. Therefore, vessels which are RAM may be required to carry out repairs.

Project vessels will be managed by marine coordination, will display suitable marks and lights, will broadcast on AIS (including relevant navigational status where appropriate) and will be compliant with relevant Flag State regulations including the COLREGs and SOLAS. Promulgation of information via NtM should also limit disruption to access.

**Severity of Consequence**

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

Given the brief and localised nature of any repair works required during the operational phase, the probability of access to local ports and harbours being reduced is considered to be low.

The frequency of occurrence is therefore considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.2.3 Anchor Interaction with the Cable

As per the construction phase, there is a risk that a vessel drags anchor over the cable. Baseline characterisations found anchoring activity within the study area to be low, with anchored vessels recorded within Bideford Bay and off Lundy. It is noted that during repair works during the operational phase, there may be a requirement to de-bury the cable or remove external protection, thus exposing a section of the cable. During these times, it is anticipated that the presence of project vessels involved with the repair, and the effective promulgation of information would ensure that vessels do not drop anchor on or near the exposed cable section.

During the operational phase, the cable will be marked on UKHO Admiralty Charts, with associated warning regarding anchoring, trawling or seabed operations.

There is also the possibility that a vessel drops anchor over the cable in an emergency, leading to potential interaction between the anchor and the cable. As noted in the construction phase, a vessel suffering engine failure may drop anchor to prevent drifting, particularly to avoid an incident such as a collision, allision or grounding. The greatest areas of risk are those with high density shipping, such as where vessels utilising the TSS lanes cross the Offshore Cable Corridor, or those entering/exiting the Bristol Channel. RNLI incident data reviewed for 2013 to 2022 showed that machinery failures, which in some cases may lead to vessels drifting, were among the most common incident types within the study area.

As per the impact on anchor dragging, cable burial to a target depth of 1.5 m (final target burial depths will be based on the CBRA) will protect the cable from vessel anchors. The preliminary BAS has identified that up to 150 km of the route will present challenges to achieving a full target trenching depth (on account of hard rock substrate types etc) and which may require some or total protection with rock placement. The cable will also be charted on UKHO Admiralty Charts to help inform anchoring decisions, noting that decision-making time may be limited if a vessel is drifting towards a hazard.

**Severity of Consequence**

Once the cable is protected by either burial or external protection, larger vessel anchors pose a greater threat to the cable than those belonging to smaller vessels, as they are able to penetrate deeper into the seabed and cause greater damage. The target burial depth of 1.5 m, or external rock protection where this is not feasible, will mitigate the risk from vessel anchors.

The most likely consequences are limited damage to property (anchoring vessel or subsea cable), with greater damage possible depending on the anchor size and the nature of the interaction.

The severity of consequence is considered to be **minor**.

**Frequency of Occurrence**

Protection of the cable via burial or external protection will reduce the frequency of anchor interaction. As noted, decision-making time may be limited in a drifting scenario, however it is anticipated that charted infrastructure including subsea cables will inform any decision to anchor, as per Regulation 34 of SOLAS.

The frequency of occurrence is therefore considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.2.4 Vessel Engaged in Fishing Snags its Gear on the Cable

As per the construction phase, there is a risk of fishing gear interaction with the cable, as discussed in the same impact for the construction phase. Demersal fishing, using gear which interacts with the seabed, poses the greatest snagging risk, and has been recorded throughout the study area.

It is noted that during repair works during the operational phase, there may be a requirement to de-bury the cable or remove external protection, thus exposing a section of the cable. During these times, it is anticipated that the presence of project vessels involved with the repair, and the effective promulgation of information would ensure that vessels do not fish over or close to the exposed cable section.

During the operational phase, the cables will be marked on UKHO Admiralty Charts and KIS-ORCA, with associated note/warning regarding trawling, anchoring or seabed operations. This will inform decisions by the crew on choice of fishing grounds.

A CBRA will also be undertaken to provide burial recommendations based on the risk to the cable from third party hazards, including fishing activities. It is anticipated that cables will be buried to a target depth of 1.5 m, with the provisional BAS confirming an average minimum achievable depth of 0.8 m (as predicted from 42 assessment locations along the Offshore Cable Corridor). Where burial depth needs supplementing with external protection, rock placement (within trench or above seabed) will be deployed (max height 1 m). The 21 crossings will also result in above seabed level structures designed according to best practice, and to an approximate maximum height of 1.4 m. Cable protection measures will be monitored by operational phase surveys to confirm their integrity.

All above ground cable protection will be designed according to best practice guidelines, which although not to be promoted, deems them overtrawlable.

**Severity of Consequence**

The planned cable protection, including burial and the use of external protection such as rock berms at cable crossings and where burial is not feasible (or does not provide full protection), is assumed to provide effective mitigation from fishing gear snagging, reducing the risk of serious consequences such as snagging, capsize of the vessel and PLL.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

Once the cables are installed, the depiction of the cables on nautical and Kingfisher charts may discourage fishing in the vicinity of the cables, however evidence shows that this is not always the case with installed cables. The planned cable protection through burial and/or external protection is assumed to provide adequate protection against fishing gear interaction. It is the responsibility of fishers to dynamically risk assess whether it is safe to undertake fishing activities in proximity to the subsea cables and to make a decision as to whether or not to fish. Commercial issues regarding fishing activity are considered further in Volume 3, Chapter 4: Commercial Fisheries of the PEIR.

The frequency of occurrence is therefore considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.2.5 Reduction in Under Keel Clearance from Laid Cable and Associated Protection

There is a risk that external cable protection measures reduce under keel clearance leading to potential vessel grounding incidents. This could lead to subsequent capsize, injury, loss of life, oil spills, etc. In general, this risk is greatest in coastal areas where existing water depths are shallower.

It is planned to bury the cable to a target depth of 1.5 m. External protection up to an approx. maximum height of 1.4 m will be required at 21 cable crossings. Where seabed characteristics do not allow full burial protection, rock protection may extend above seabed level, up to 1 m in height. Should external protection reduce water depth by more than 5% in any area, this will require consultation with the MCA and further detailed assessment may be required following further surveys and detailed engineering to ensure navigational safety is not compromised.

**Severity of Consequence**

Should a vessel grounding occur, the most likely consequences are minor damage to property and minor reputational effects on business but no perceptible effect on people. The maximum adverse scenario may include the vessel foundering resulting in PLL and the environmental consequence of pollution. If pollution were to occur in proximity to the Proposed Development, then the MPCP would be implemented to minimise the impact on the environment.

Overall, the severity of consequence is considered to be **moderate**.

**Frequency of Occurrence**

The likelihood of a grounding is greater for larger vessels with deeper draughts noting that deep draught vessels within the study area were typically recorded passing further offshore in deeper water as opposed to coastal areas.

The maximum height of external protection will be 1.4 m, which will be used at the 21 cable crossings. Elsewhere rock protection extending above the seabed level is considered to be the last resort in terms of preferred protection, with other burial techniques pursued in the first instance.

The average draught of vessels recorded within the study area was 7.0 m, while the maximum draught was 21.6 m. The maximum draught was recorded by a crude oil tanker visiting Rotterdam, crossing the Offshore Cable Corridor south of the Isles of Scilly in water depths in excess of 100 m. Draughts in the shallower areas around the landfall did not typically exceed 5 m in water depths below 20 m.

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

### 10.3.2.6 Interference with Marine Navigational Equipment

A magnetic compass is a navigational instrument for determining direction relative to the earth's magnetic poles. It consists of a magnetised pointer (usually marked on the north end) free to align itself with the earth's magnetic field. Like any magnetic device, compasses are affected by nearby ferrous materials as well as by local electromagnetic forces, such as magnetic fields emitted from power cables. The majority of commercial vessels use a non-magnetic gyrocompass as the primary means of navigation, which is unaffected by the earth's magnetic field. However, as the magnetic compass still serves as an essential means of navigation in the event of power loss or as a secondary source, it must not be affected to the extent that safe navigation is threatened.

The proposed cables will consist of four 525 kV HVDC power cables buried in two bundled pairs, with a FOC included with each bundle. The HVDC cable may result in localised static EMF up to 79 µT, with the potential to affect magnetic compasses.

The important mitigating factors to reduce EMF effects on magnetic compasses are:

- Cable spacing;
- Water depth; and
- Burial depth.

The cables will be buried in two pairs, in trenches with a spacing of 50 – 180 m, potentially rising to 250 m in areas of high density shipping. Target burial depth is 1.5 m, with external protection applied to the remainder (effectively using rock protection to bury the cable). The vast majority of the Offshore Cable Corridor is located in water depths of greater than 10 m below Chart Datum (CD). Therefore, there will be significant vertical distance between the cables and surface vessels along the majority of the Offshore Cable Corridor. The strength of the magnetic fields decreases exponentially with distance from the cables, and as such compass deviation will reduce with increasing water depth. Similarly, increasing burial depth also increases the vertical separation between a surface vessel and the cables in a given water depth.

**Severity of Consequence**

The majority of commercial vessel traffic uses non-magnetic gyrocompasses as the primary means of navigation, which are unaffected by EMF. Therefore, in general it is considered unlikely that any EMF interference created by the Proposed Development will have a significant impact on vessel navigation. However, as magnetic compasses can still serve as an essential means of navigation in the event of power loss, as a secondary source, or as some smaller craft (fishing or leisure) may rely on it as their sole means of navigation, it has been assessed within this impact assessment.

Vessels in shallower water should also be able to navigate visually using coastal features when conditions are suitable.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

Given HVDC cables produce static magnetic fields which decrease with the horizontal distance from the cables, magnetic compass interference should only be experienced directly above or in direct proximity to the cables. Therefore the greatest impact will be on vessels transiting parallel to the cable. However, given the water depths in the area it is expected that the vertical separation between surface vessels and the cables will mean interference is experienced rarely.

The frequency of consequence is therefore considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

### 10.3.3 Assessment of Decommissioning Effects

The impacts of the decommissioning phase of the Proposed Development have been assessed. A description of the potential effect on receptors caused by each identified impact is given below.

#### 10.3.3.1 Collision of a Passing Third-Party Vessel with a Vessel Associated with Decommissioning

Similarly to the construction phase, there is a risk of collision between third-party vessels and projects vessels associated with decommissioning works.

**Severity of Consequence**

In the scenario where the cable is removed following its operational lifetime rather than left in-situ, the types and numbers of vessels expected to be used for decommissioning are expected to be similar (worst case) to those used in the construction phase.

The severity of consequence is therefore considered to be **moderate**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.2 Cable Decommissioning Causing Disruption to Passing Vessel Routeing/Timetables

As per the construction phase, there is a potential that decommissioning activities (decommissioning-removal) cause disruption to passing vessel routeing and timetables of vessels.

**Severity of Consequence**

In the scenario where the cable is removed following its operational lifetime rather than left in-situ, the types and numbers of vessels expected to be used for decommissioning are expected to be similar (worst case) to those used in the construction phase.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **reasonably probable**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be reasonably probable. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.3 Increase in the Risk of a Vessel-to-Vessel Collision Due to Decommissioning Vessel Activity

As per the construction phase, vessel displacement due to the presence of project vessels during decommissioning works may lead to an increase in vessel-to-vessel collision risk between third-party vessels.

**Severity of Consequence**

In the scenario where the cable is removed following its operational lifetime rather than left in-situ, the types and numbers of vessels expected to be used for decommissioning are expected to be similar (worst case) to those used in the construction phase.

The severity of consequence is therefore considered to be **moderate**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.4 Cable Decommissioning Causing Disruption to Fishing and Recreational Activities

As per the construction phase, there is potential for decommissioning works to cause disruption to fishing and recreational activity.

**Severity of Consequence**

In the scenario where the cable is removed following its operational lifetime rather than left in-situ, the types and numbers of vessels expected to be used for decommissioning are expected to be similar (worst case) to those used in the construction phase.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **reasonably probable**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be reasonably probable. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.5 Cable Decommissioning Causing Disruption to Third-Party Marine Activities

As per the construction phase, there is potential for decommissioning works to cause disruption to third-party marine activities such as military exercises or dredging.

**Severity of Consequence**

In the scenario where the cable is removed following its operational lifetime rather than left in-situ, the types and numbers of vessels expected to be used for decommissioning are expected to be similar to those used in the construction phase.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.6 Reduced Access to Local Ports/Harbours

Similar to the construction phase, the presence of project vessels carrying out decommissioning works may cause a reduction in access to local ports and harbours. This will be particularly prevalent during works in nearshore areas at the landfall in Bideford Bay.

**Severity of Consequence**

In the scenario where the cable is removed following its operational lifetime rather than left in-situ, the types and numbers of vessels expected to be used for decommissioning are expected to be similar (worst case) to those used in the construction phase, leading a similar reduction in access.

The severity of consequence is therefore considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is therefore considered to be **reasonably probable**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be reasonably probable. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.7 Anchor Interaction with the Cable

Should the cable be left in situ following decommissioning, there is a risk to the cable from anchor interaction. This impact is expected to be as per the operational phase, although it is noted that the cable may no longer be subject to monitoring. Decommissioning works are expected to be subject to a separate assessment based on the information available at the time, towards the end of the operational phase in advance of decommissioning (50+ years from the current time).

Should the cable be removed during the decommissioning phase, there would be a period where the cable is no longer operational, but remains entirely or partially laid, with the risk of anchor interaction remaining during this time.

**Severity of Consequence**

The most likely consequences are limited damage to property (anchoring vessel or subsea cable), with greater damage possible depending on the anchor size and the nature of the interaction.

The severity of consequence is considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.8 Vessel Engaged in Fishing Snags its Gear on the Cable

Should the cable be left in situ following decommissioning, there is a risk to the cable from fishing gear snagging. This impact is expected to be as per the operational phase, although it is noted that the cable may no longer be subject to monitoring. Decommissioning works are expected to be subject to a separate assessment based on the information available at the time, towards the end of the operational phase in advance of decommissioning (50+ years from the current time).

Should the cable be removed during the decommissioning phase, there would be a period where the cable is no longer operational, but remains entirely or partially laid, with the risk of fishing gear interaction remaining during this time.

**Severity of Consequence**

The severity of consequence is considered to be **minor**.

**Frequency of Occurrence**

The frequency of occurrence is considered to be **extremely unlikely**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be minor, and the frequency of occurrence is considered to be extremely unlikely. Therefore, the effect is of **broadly acceptable** adverse significance, which is **not significant** in EIA terms.

#### 10.3.3.9 Reduction in Under Keel Clearance from Laid Cable and Associated Protection

Should the cable be left in situ following decommissioning, there is a risk that external cable protection measures reduce under keel clearance leading to potential vessel grounding incidents. This impact is expected to be as per the operational phase. Decommissioning works are expected to be subject to a separate assessment based on the information available at the time, towards the end of the operational phase in advance of decommissioning (50+ years from the current time).

Should the cable be removed during the decommissioning phase, there would be a period where the cable is no longer operational, but remains entirely or partially laid with cable protection also in place. Therefore under keel clearance may remain reduced in some areas of the Offshore Cable Corridor for part of the decommissioning phase. It is noted that by this time, the cable and associated protection would have been in place for 50 years meaning that mariners would be expected to be aware of the reduced under keel clearance.

**Severity of Consequence**

Should a vessel grounding occur, the most likely consequences are minor damage to property and minor reputational effects on business but no perceptible effect on people. The maximum adverse scenario may include the vessel foundering resulting in PLL and the environmental consequence of pollution. If pollution were to occur in proximity to the Proposed Development, then the MPCP would be implemented to minimise the impact on the environment.

Overall, the severity of consequence is considered to be **moderate**.

**Frequency of Occurrence**

The frequency of occurrence is considered to be **remote**.

**Significance of Effect**

Overall, the severity of consequence is deemed to be moderate, and the frequency of occurrence is considered to be remote. Therefore, the effect is of **tolerable** adverse significance, which is **not significant** in EIA terms.

## 10.4 Proposed Mitigation and Monitoring

### 10.4.1 Further Mitigation

The appraisal of the impact on shipping and navigation found that none of the impacts had a significance exceeding 'tolerable'. To ensure the risks are reduced to ALARP, embedded mitigations must be followed and potential additional mitigations are suggested as follows:

- It is recommended that the period between cable lay and burial/protection is minimised, in order to reduce the risk of fishing gear interaction with the unprotected cables.

### 10.4.2 Future Monitoring

To ensure impacts remain in line with those assessed, the following monitoring is recommended to be implemented.

#### 10.4.2.1 Cable Protection

Surveys of the Offshore Cable Corridor will be undertaken up to once per year for the first five years of the operational phase, and every five years following this, to ensure that burial and protection measures remain sufficient. Maintenance of the protection will be undertaken as necessary.

If exposed cables or ineffective protection measures are identified during post-construction monitoring, these would be promulgated to relevant sea users including via Notice to Mariners and Kingfisher Bulletins. Where immediate risk was observed, the Applicant would also employ additional temporary measures where appropriate (such as a guard vessel or temporary buoyage) until such time as the risk was permanently mitigated.

#### 10.4.2.2 Compass Deviation

It is not assumed necessary at this stage, however a post-lay compass deviation assessment will be undertaken post-consent, once the detailed design and cable configuration is available, to confirm interference with magnetic position fixing equipment is within acceptable limits. If it cannot be demonstrated that MCA deviation requirements can be met pre-construction, a post construction compass deviation survey of the 'as laid' Offshore Cable Corridor will be undertaken.

#### 10.4.2.3 Decommissioning

Any future monitoring requirements for the decommissioning phase will be identified as part of a separate decommissioning programme.

## 10.5 Residual Effects

No impacts were assessed to be **Unacceptable**. With the proposed mitigation measures in place, impacts assessed as **Tolerable** are considered to be ALARP. The additional mitigation measure presented above is recommended to further reduce the impacts, however the overall rankings remain the same.

# 11 Cumulative Impacts

An assessment of cumulative impacts is presented in Volume 3, Chapter 5: Shipping and Navigation of the PEIR.

# 12 Summary

Using baseline data, expert opinion and the outputs of consultation, impacts relating to shipping and navigation have been identified for the Proposed Development for all phases of the development (construction, operation and decommissioning). This has been fed into the FSA undertaken in Section 10.

## 12.1 Baseline Environment

### 12.1.1 Navigational Features

The Offshore Cable Corridor runs within UK waters from Cornborough Range, in Bideford Bay, to the border with the French EEZ. Key navigational features in the area include the TSSs around the Isles of Scilly, which are inshore of the Offshore Cable Corridor, and the ITZs inshore of the TSS lanes.

There are a number of ports and harbours in proximity to the Offshore Cable Corridor, with the closest being Bideford and Appledore, located close to the landfall. Pilotage is in place for vessels approaching these. There are two charted anchorages in the vicinity of the Offshore Cable Corridor; Lundy Road east of Lundy Island, and Clovelly Road 4.8 nm southwest of the cable landfall.

### 12.1.2 Emergency Response Resources

The RNLI operate several lifeboat stations throughout the west coast of the UK in proximity to the Offshore Cable Corridor. There was an average of 37 incidents within the study area per year between 2013 and 2022 responded to by the RNLI, with the majority of these recorded within Bideford Bay and nearshore areas. The most common incident types were person in danger incidents and machinery failures. Recreational vessels were the most commonly affected vessel type, accounting for 38% of incidents. Three incidents were located within the Offshore Cable Corridor, all of which were machinery failures. The majority of incidents were responded to by the Appledore lifeboat station, which is located at the mouth of the River Torridge.

Between 2012 and 2021, the MAIB recorded an average of three to four incidents per year within the study area. Fishing vessels were involved in 49% of incidents, with the most common incident type being machinery failure (46% of incidents). None of the incidents recorded by the MAIB were located within the Offshore Cable Corridor.

The nearest SAR station to the cable corridor is at Newquay, 25 nm to the east, which responded to almost all helicopter taskings within the Study Area Between April 2015 and March 2023. There were 89 helicopter taskings recorded within the study area, with the most frequent ones being rescue/recovery operations, search operations, and support operations. There were two taskings recorded within the Offshore Cable Corridor, with one being a rescue/recovery operation and the other a support operation.

The HMCG coordinates SAR operations through a network of 11 MRCC, including a JRCC based in Hampshire. All of the MCA's operations, including SAR, are divided into 18 geographical regions. The Proposed Development lies within Areas 11 and 12, "Cornwall including Isles of Scilly" and "North Devon including Severn Estuary". The closest MRCCs to the Proposed Development are at Falmouth, 38.5 nm to the southeast of the Offshore Cable Corridor in Cornwall, and Milford Haven, approximately 37.0 nm north of the Offshore Cable Corridor in Wales.

### 12.1.3 Vessel Traffic Movements

Based on the twelve months of AIS vessel traffic data, there was an average of 74 unique vessels per day recorded within the study area. The most common vessel types recorded were cargo vessels, tankers and fishing vessels. The highest vessel density was recorded in areas where vessels were associated with the TSSs around the Isles of Scilly, and where traffic heading to and from ports in the Bristol Channel crosses the proposed Offshore Cable Corridor.

The majority of the anchored vessel tracks were off Lundy, approximately 3.5 nm north of the Offshore Cable Corridor. Anchored vessels were also recorded within Bideford Bay. One anchored vessel was recorded within the study area approximately every three days.

Fishing vessels were recorded throughout the study area, with the most activity recorded in April 2023. The most common types of fishing vessels recorded were demersal trawlers and beam trawlers. The average speed of fishing vessels within the Study Area was 5.0 knots, indicative of high numbers of vessels actively fishing (63%). In addition to AIS, VMS satellite data for 2020 was reviewed to validate fishing vessel movements. Fishing density as reported by the MMO showed a good correlation between with the baseline as established using AIS data.

## 12.2 Future Case Vessel Traffic

There are a number of proposed OWFs in the vicinity of the Offshore Cable Corridor, which may alter the nature of shipping if they are consented and constructed. Two of these have been granted consent, being small scale floating demonstration projects in Erebus (30 nm northwest of the Offshore Cable Corridor) and TwinHub (16 nm southeast of the Offshore Cable Corridor). The White Cross OWF project has submitted a consent application and has been considered in the assessment of cumulative impacts. The majority of other projects are in early planning or site selection phases, however the construction of these may lead to increases in wind farm support traffic, as well as re-routeing of existing vessel traffic.

Common commercial destinations were considered to establish any trends in vessel arrivals, and to identify notable port developments which may lead to changes in vessel traffic in the future. Vessel arrivals typically showed a slight decrease across common destinations, noting that factors such as COVID-19 and recent sanctions against Russia may have played a role in this, among other factors. Significant developments at Rotterdam and Antwerp may lead to a long term increase in large vessel traffic crossing the south of the Offshore Cable Corridor.

Trends involving fishing and recreational vessels are difficult to predict as these depend on a number of factors. Fishing activity may vary depending on legislation changes post-Brexit, as well as fish stocks and quotas. Recreational activity may also vary, while volume of activity may be dependent on other factors such as the weather, climate change and the economy.

## 12.3 Risk Assessment

Using the baseline data, expert opinion, stakeholder concerns and lessons learnt from existing offshore developments, various shipping and navigation hazards have been risk assessed in line with the FSA approach.

The significance of risk has been determined as either **Broadly Acceptable** or **Tolerable** for all hazards assessed. In order to ensure tolerable risks are ALARP it is recommended that the period between cable lay and burial/protection is minimised, in order to reduce the risk of fishing gear interaction with the unprotected cables.

## 12.4 Next Steps

Following the PEIR chapter, consultation will be undertaken with stakeholders to inform the final Environmental Statement (ES) chapter and NRA. Stakeholders to be consulted include:

- MCA;
- Trinity House;
- Royal Yachting Association (RYA);
- UK Chamber of Shipping;
- the MoD; and
- Local ports, harbours and pilotage services.

Any feedback received during consultation will be reviewed and incorporated into the assessment presented in the final ES chapter and NRA. The RYA Coastal Atlas will also be reviewed to inform on recreational activities within the study area.

# 13 References

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