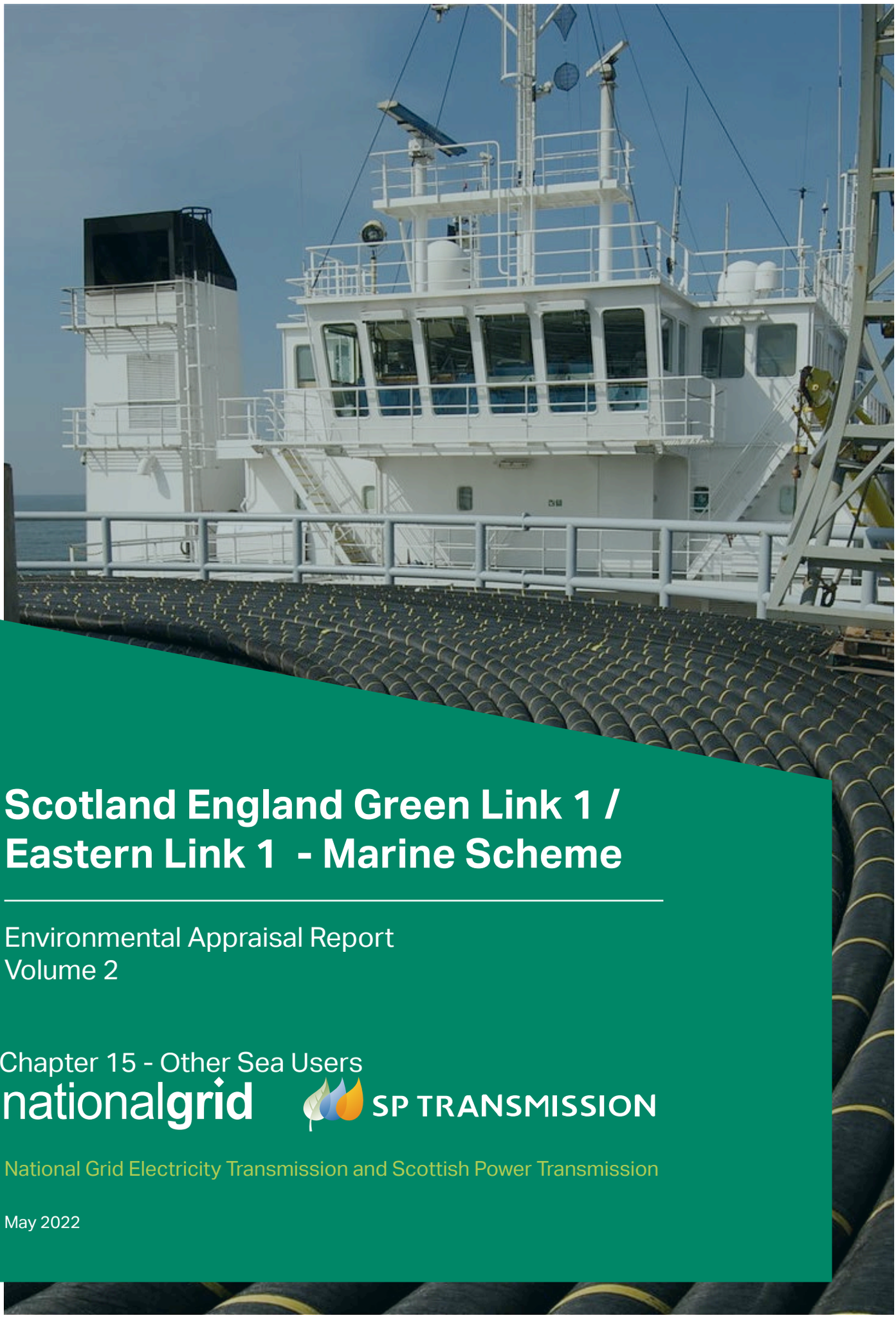

Scotland England Green Link 1 / Eastern Link 1 - Marine Scheme

Environmental Appraisal Report
Volume 2

Chapter 15 - Other Sea Users

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National Grid Electricity Transmission and Scottish Power Transmission

May 2022

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Executive Summary

This chapter of the Environmental Appraisal Report (EAR) contains an appraisal of the potential interaction of the Marine Scheme and other sea users, focusing on the marine area between Marine High Water Spring (MHWS) at the Scottish landfall area at Thorntonloch Beach in East Lothian, and MHWS at the English landfall area at Seaham, County Durham. This includes energy industry activities and infrastructure, military areas, disposal sites, aquaculture, and recreational users.

The appraisal follows the methodology as set out within Chapter 4: Approach to Environmental Appraisal, considering the guidance set out in Section 15.2.1, and is based on skilled appraisal and expert judgment.

The other sea user baseline is presented in Section 15.5 of this chapter. This identifies relevant baseline characteristics of other sea users activities within a defined study area and those other sea users scoped out of further appraisal. The baseline has also been informed by desktop review of published information and through consultation with relevant organisations.

The potential impacts of the Marine Scheme on other sea users have been appraised in Section 15.6. Where appropriate, proportionate measures to avoid, mitigate, or compensate for any identified adverse effects are identified. This appraisal concludes that, the likely effects associated with the installation, operation (including maintenance and repair) and decommissioning of the Marine Scheme on other sea user receptors are **not significant**.

The potential for the Project and other plans and projects to interact and generate significant cumulative effects is considered in Chapter 16: Cumulative and In-Combination Effects. No interaction is anticipated between other sea users and the English and Scottish Onshore Schemes.

15. Other Sea Users

15.1 Introduction

This chapter of the Environmental Appraisal Report (EAR) presents an appraisal of the potential interaction of the Marine Scheme with other sea users, including energy industry activities and infrastructure (e.g. oil and gas, renewables), military areas, disposal sites, aquaculture and recreational users.

The Marine Scheme comprises the marine component of the Scotland England Green Link 1 (SEGL1)/ Eastern Link 1 (EL1) and extends from Mean High Water Springs (MHWS) at the Scottish landfall on Thorntonloch beach, to MHWS at the English landfall near Seaham. It is located within both English and Scottish territorial waters, within the 12 nautical mile (NM) limit from the coast. The Marine Scheme comprises an installation corridor of approximately 176 km length and 500 m maximum width within which cables will be installed (hereinafter referred to as the 'marine installation corridor'). The marine installation corridor extends from kilometre point (KP) 0, at its landfall in Scotland, to KP 176, at its landfall in England (See Figure 1-3). The Marine Scheme activities cover the following phases: installation, operation (including maintenance and repair), and decommissioning. Detailed descriptions of each of the Marine Scheme phases can be found in Chapter 2: Project Description.

The other sea users baseline is presented in Section 15.5 of this EAR chapter.

Interaction of the Marine Scheme with the key marine user groups, shipping and navigation, and commercial fisheries are covered in Chapter 13: Shipping and Navigation and Chapter 14: Commercial Fisheries.

The following interactions with land-based socio-economic receptors are not considered in this EAR. They fall within the scope of the English and Scottish Onshore Schemes and are assessed and appraised separately as part of onshore consent applications (Scottish Onshore Scheme EIA Report, Chapter 14: Recreation, Tourism and Socio-economics and the English Onshore Scheme EAR Report, Chapter 14: Recreation, Tourism and Socio-economics):

- Employment opportunities and tourism; and
- Amenities and recreation at the landfall and coastal area that are primarily associated with the terrestrial environment and terrestrial receptors – i.e. caravan parks, seaside tourism, beach use by walkers.

Potential interactions between the Marine Scheme and other plans and projects, which may result in significant cumulative effects, are considered in Chapter 16: Cumulative and In-Combination Effects.

15.2 Legislative Context

This section outlines legislation, policy and guidance relevant to the appraisal of the potential effects on other sea users associated with installation, operation (including maintenance and repair) and decommissioning of the Marine Scheme. For further information regarding the legislative context refer to Chapter 3: Legislative and Policy Framework.

A number of policies and regulations aim to assure that other sea users are taken into account during the planning and execution of projects within UK waters. For the Marine Scheme these include the UK Marine Policy Statement (MPS) and the UK Marine Plans, specifically the Scottish National Marine Plan (Scottish Government, 2015), and the North East Inshore and North East Offshore Marine Plan[1] (HM Govenment, 2021) have a number of relevant policies specific to other sea users which are presented in EAR Volume 3 Appendix 3.1: Marine Plan Compliance Checklist.

[1] The Marine Scheme falls entirely within the UK territorial waters (i.e. 12 NM), therefore within the inshore portion of the North East marine area. The marine plan for the North East area has combined both inshore and offshore portions.

A number of policies and laws require decision makers to consider the environmental impacts of a project. Legislation and policy relevant to the appraisal of Marine Scheme's effects on other sea users is presented in EAR Volume 3 Appendix 3.2: Topic Specific Legislation.

15.2.1 Guidance

The following guidelines relevant to other sea users have been considered within the appraisal methodology:

- The European Subsea Cable Association (ESCA) guideline no.6 'The Proximity of Offshore Renewable Energy Installations & Submarine Cable Infrastructure in UK Waters' (ESCA, 2016). This guideline provides a framework for collaborative working between the offshore wind farms and subsea cable developments. The guideline recommends consultation between projects/developers within 1 nautical mile (NM) (1.85 km) of distance, in order to establish a mutually acceptable proximity agreement based on a site-specific, risk-based approach.
- International Cable Protection Committee (ICPC) recommendations:
  - Recommendation No.2. Cable Routing and Reporting Criteria (ICPC, 2015);
  - Recommendation No.3. Telecommunications Cable and Oil Pipeline/Power Cables Crossing Criteria (ICPC, 2014); and
  - Recommendation No.13. The Proximity of Offshore Renewable Wind Energy Installations and Submarine Cable Infrastructure in National Waters (ICPC, 2013);
- Guidance on assessing the socio-economic impacts of offshore wind farms (OWFs), produced by Oxford Brooks and Vattenfall (Glasson, Durning, Olorundami, & Welch, 2020); and
- East Lothian Council's Local Development Plan 2018 and Countryside and Coast Supplementary Planning Guidance.

Guidance on socio-economic impact assessment is expected to be published by Marine Scotland in 2022, however, at time of writing this was not available.

15.3 The Study Area

For the purpose of this appraisal and baseline characterisation, a 10 km corridor centred on the marine installation corridor has been established (Figure 15-1) (the study area). The study area is defined by the extent to which other sea users may be directly or indirectly impacted by the Marine Scheme.

15.4 Approach to Appraisal and Data Sources

15.4.1 Appraisal Methodology

The appraisal process is based on a matrix approach and follows the structured approach and terminology outlined in Chapter 4: Approach to Environmental Appraisal.

15.4.2 Data Sources and Consultations

15.4.2.1 Data Sources

Baseline conditions have been established through desktop review of published information and through consultation with relevant organisations. No site-specific surveys for other sea users have been undertaken to inform this EAR. The data sources used to inform the baseline description and appraisal include:

- The Crown Estate (TCE): Asset map in English waters only, including offshore wind farms, wind export cable agreements, carbon capture and storage sites, and marine aggregate digital data (TCE, 2021a);

- Crown Estate Scotland (CES): Map and documents in Scottish waters only, including spatial data for offshore renewables, cable and pipelines activities, wind export cable agreements, carbon capture and storage, and aquaculture sites (CES, 2020a);
- Environmental Agency: Bathing waters in England (EEA, 2021);
- The Kingfisher Information Service – Offshore Renewable Cable Awareness (KIS-ORCA): Marine cables digital data (KIS-ORCA, 2021);
- Marine Management Organisation (MMO): 'Explore marine plans map' data portal, including spatial data for marine aggregates, aquaculture, dredging and disposal sites, and recreational areas (MMO, 2021a);
- Marine Scotland, National Marine Planning Interactive (NMPi): including spatial data on dredging and disposal sites, marine aggregates, aquaculture, and recreational uses (NMPi, 2021a);
- Marine sports websites: Magic Seaweed and Flinstrokes, including spatial information about recreational users (Magic Seaweed, 2021; Finstrokes, 2021);
- North Sea Transition Authority (NST Authority) (formerly Oil and Gas Authority, OGA): Digital data for oil and gas infrastructure and blocks (NST Authority, 2022);
- Other marine infrastructure developers or operators' websites and documentation, including (but not limited to) Neart Na Gaoithe Offshore Wind Farm, Berwick Bank Offshore Wind Farm, NO-UK Fibre Optic Cable System, and Havhingsten Segment 2.1 North;
- Recreational and tourism studies and surveys commissioned by governmental entities, including Scottish Marine Recreation & Tourism Survey 2015 – Spatial maps (NMPi, 2015); the East Lothian Visitor Survey 2018 (STR, 2019); and Mapping recreational sea anglers in English waters (MMO1163) (MMO, 2020);
- Royal Yacht Association (RYA): UK Coastal Atlas of Recreational Boating (RYA, 2019);
- Scotland Environmental Protection Agency (SEPA): information on bathing waters in Scotland (SEPA, 2021); and
- UK Hydrographic Office: Military Practice and Exercise Areas (UKHO, 2021).

15.4.2.2 Summary of Consultations

Following the submission of the non-statutory Scoping Report in April 2021, the MMO, MS-LOT and respective consultees and advisers had the opportunity to express their opinions and provide feedback on the proposal and EAR scope, which has been considered in this chapter.

Further details of the consultation process and associated responses are presented in Chapter 6: Consultation and Stakeholder Engagement.

Table 15-1 summarises consultation responses received from relevant statutory and non-statutory consultees in relation to other sea users for the Marine Scheme and outlines how and where this has been addressed in this chapter.

Table 15-1: Scoping Report Consultation

Consultee	Consultee response/ comment	How and where addressed
NatureScot	We are aware that MarineScotland/ Scottish Government are currently preparing guidance to assist with socio/ economic impact assessment. This will comprise guidance for both social impact assessment and economic assessment as well as tool kits with practical examples to help guide developers in undertaking this if appropriate to their proposal. Further advice on this guidance, when it is to be published and if it is to be required, we assume will be provided by MarineScotland.	Guidance on socio-economic impact assessment is expected to be published by Marine Scotland in 2022, however, at time of writing this was not available.
Ministry of Defence (MOD)	Further to your e-mail below regarding the construction of Eastern Link 1 HVDC cable and cable protection – Torness, Scotland to Hawthorn Pit, England, I can confirm	No action required.

Consultee	Consultee response/ comment	How and where addressed
	after investigation that the MOD has No Concerns relating to this activity in the location specified. I hope this information is sufficient for your purposes.	
East Lothian Council	Population and human health The area of the landfall is covered by East Lothian Local Development Plan 2018. Its countryside policies aim to support the diversification of the rural economy and the ongoing sustainability of the countryside and coast. The policy recognizes that countryside or coastal sites may be needed to provide infrastructure for operational reasons. The LDP reflects Scottish Planning Policy in promoting the developed coast as the focus for development requiring a coastal location. In generally undeveloped areas of constrained coast, such as this, new coastal development should generally be avoided, however it may be acceptable where there is an operational requirement for a coastal location. In addition, the proposal should respect the character and qualities of the coast. East Lothian Council's Countryside and Coast Supplementary Planning Guidance sets out the features qualities of each area of coast which should be taken into account. All East Lothian's Supplementary Planning Guidance can be downloaded from our website, here: https://www.eastlothian.gov.uk/downloads/download/13103/supplementary_planning_guidance_spg	Consideration of the East Lothian Local Development Plan 2018, where it relates to marine recreational users, has been considered within this chapter. Where it relates to onshore and coastal users, including character and qualities of the coast, this will be addressed under the Scottish Onshore Scheme EIA Report, Chapter 14: Recreation, Tourism and Socio-economics.
East Lothian Council	Thorntonloch beach is popular with anglers, and surfers, as well as holiday makers at the nearby caravan site, and walkers. Divers and sailors from East Lothian bases use the nearby marine area. Any effects on the beach and nearby marine area as a recreational resource should be considered. These are mostly noted in section 14 of the Scoping Report. There may be a requirement to divert the John Muir Way, a long distance footpath running along the coast. If it needs to be diverted, the diverted path should avoid sensitive habitats and look to provide alternative routes, in particular avoiding routes that cut through sand dune and shingle. If the path cannot be diverted then it is for the developer to come up with workable solution so that the public can gain access and this should be detailed in the Report. East Lothian carries out a regular visitor survey and has a Tourist Action Strategy, which may be useful, see: https://www.eastlothian.gov.uk/info/210573/tourism_and_visitor_attractions/11959/tourism/2 Information on noise or vibration that could impact on sensitive receptors including residences and recreational users of the beach should be included.	Information to support the baseline has been considered in Section 15.5.1. Consideration of the John Muir Way has been considered in the Scottish Onshore Scheme EIA Report, Chapter 14: Recreation, Tourism and Socio-economics.
East Lothian Council	There will be a short term arrival of workers in the area. The proposal is within the 3km consultation zone of Torness nuclear power station. We would recommend that the operators be kept informed of proposals. An effect on population of the project overall will be from its impact in allowing electricity to be transported across wide areas. This will support the maintenance of existing patterns of population distribution, as electricity is a more or less essential part of modern living and employment. This last effect is diffuse and difficult to model, and arises from the project as a whole rather than this one section of it.	Consideration of socio-economic impacts such as short and long-term effects on the local population is in the Scottish Onshore Scheme EIA Report, Chapter 14: Recreation, Tourism and Socio-economics.
East Lothian Council	Material Assets The Scoping Report notes that there will be an impact on material assets in that there may be the need to cross other infrastructure in construction. Torness nuclear	Infrastructure relating to Torness Nuclear Power Station will not be intersected by the Marine Scheme.

Consultee	Consultee response/ comment	How and where addressed
	power station is close by, and if there are any potential impacts on this, this should be reported. The operators of this facility should be consulted for their views.	EDF has been consulted on the proposals and have no concerns.
East Lothian Council	Material Assets The project as a whole is likely to have a positive impact on material assets by allowing electricity generated in different places to be moved around, avoiding redundancy and reducing the need for additional generation. This arises from the project overall and is probably difficult to quantify. However if this information is available, either for this report or the onshore EIA, it would be useful to understand the overall impacts of the scheme as a whole.	The potential for cumulative effects of the onshore and marine elements of the Project have been appraised in Chapter 16: Cumulative and In-Combination Effects.
Royal Yachting Association (RYA)	In relation to the cable landfall at Thorntonloch, I can confirm that the bay is used on an occasional basis for windsurfing. There is no club there and access is through either the caravan park or from the Torness Power station car park. As the preferred location of the landfall compound is to the south of the beach and as horizontal direct drilling will be used, it is likely that appropriate mitigation can be put in place to allow use of the beach during construction.	This information has been used to support the baseline, as presented in Section 15.5.1.

15.4.3 Data Gaps and Limitations

Baseline conditions have been established through desktop review of published information and through consultation with relevant organisations as listed in Section 15.4.2.1. Baseline information on recreational sea users relies on traffic data for recreational boats, and a limited number of studies, surveys and information are available on non-governmental websites.

It is noted that recreational activities are highly seasonal and dependant on certain weather conditions. Furthermore, due to the COVID-19 pandemic, contemporaneous data on recreation may under-predict the extent of activity in ‘normal’ periods (i.e. false-lows); the EAR is cognisant of this risk and has endeavoured to mitigate it through longer-term reviews of historical trends.

The RYA UK Coastal Atlas of Recreational Boating (accessed through NMPi) provides a Geographical Information System (GIS) dataset of recreational boating activity around the UK. The dataset provides spatial data which indicates location of RYA clubhouses, training centres and marinas, general boating areas, and Automatic Identification System (AIS) recreational intensity (RYA, 2019). It has been recognised that the period between 2019 and 2021 is likely to have been affected by the COVID-19 pandemic, plus that small fishing and recreation boats are likely to be underestimated in the data in favour of larger commercial vessels.

Where appropriate and feasible, the desktop review was complimented with consultation with specific stakeholders (refer to Section 15.4.2 and Chapter 6: Consultation and Stakeholder Engagement) to verify the baseline information, its accuracy, and to address data gaps. Baseline conditions described in this chapter rely on the data sources used, and inconsistencies or inaccuracies may exist. No site-specific surveys for other sea users have been undertaken to inform this EAR.

GIS: LC Checked: RG Approved: MW

Numbered unitary areas:
1 RENFREWSHIRE
2 EAST RENFREWSHIRE
3 GLASGOW CITY
4 NORTH LANARKSHIRE
5 CITY OF EDINBURGH

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170

Kirkcaldy
FIRTH OF FORTH
Isle of May
North Berwick
Burntisland
Aberlady
Dunbar
EDINBURGH
East Linton
Haddington
Tranent
EAST LOTHIAN
Dalkeith
MIDLOTHIAN
Loanhead
Gorebridge
Grantshouse
St Abb's Head
Eyemouth
Duns
Berwick-upon-Tweed
Holy Island
Greenlaw
Lauder
Coldstream
Norham
Etal
Belford
Seahouses
Wooler
Peebles
Innerleithen
Galashiels
Melrose
Kelso
Selkirk
SCOTTISH BORDERS
Jedburgh
Hawick
Alnwick
Longhoughton
Rothbury
Amble
NORTHUMBERLAND
Morpeth
Bedlington
Newbiggin-by-the-Sea
Ashington
Blyth
Cramlington
Whitley Bay
Tynemouth
South Shields
Sunderland
Seaham
Peterlee
HARTLEPOOL
Langholm
Lockerbie
Bellingham
Kielder Water
Longtown
Gretna
Haltwhistle
Brampton
Carlisle
Wetheral
Hexham
Corbridge
NEWCASTLE UPON TYNE
Gateshead
Consett
Chester-le-Street
Durham
Wigton
Dalston
Alston
Lazonby
Wearhead
Tow Law
Crook
Bishop Auckland
COUNTY DURHAM
Bothel
Bassenthwaite

N

0 25 50 km

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Coordinate System: WGS1984 Zone 30N

Scale @ A3 1:600,000

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PROJECT
Scotland England Green Link 1 / Eastern Link 1

KEY
- Marine Installation Corridor
- 10km Study Area
- Kilometre Point (KP)
- Territorial Waters Boundary
- EEZ Boundary

Scottish Marine Regions and Offshore Marine Regions (Scotland)
- Forth and Tay
- Long Forties

Marine Plan Area (England)
- North East inshore
- North East offshore

TITLE
Figure 15-1
Other Sea Users Study Area

REFERENCE
SEGL1_M_EAR_15-1_v2_20220408

SHEET NUMBER
1 of 1

DATE
08/04/2022

15.5 Baseline Conditions

This section presents the other sea user baseline for the Marine Scheme. The following receptors have been considered in this chapter:

- Marine tourism and recreation (including sailors, swimmers, surfers, wind and kite surfers, paddle boarders, canoers and kayakers, scuba divers, and sea and shoreline anglers);
- Oil and gas operations;
- Carbon capture and storage;
- Renewable energy developments (offshore wind, tidal and wave, etc.);
- Dredging and disposal sites/activities;
- Military practice areas;
- Pipelines and cables;
- Aquaculture; and
- Other developments, such as those near the landfall that may be affected by activities at sea.

Table 15-2 explains why particular receptors have been excluded from further appraisal in this chapter.

Table 15-2: Other Sea Users excluded from further appraisal

Receptor	Justification
Onshore recreational users	As stated in Section 15.1, socio-economic baseline characterisation for land-based receptors has been considered within the respective Scottish and English Onshore Scheme environmental assessment / appraisal. This includes consideration of terrestrial-based receptors utilising the coastline for example, beach goers, caravan parks and seaside tourism.
Carbon capture and storage sites	There are no specific existing carbon capture and storage sites, wave or tidal developments, or mineral or aggregate extraction sites identified within the study area, therefore these receptors have been excluded from further appraisal.
Wave or tidal developments	
Mineral or aggregate extraction sites	

15.5.1 Marine Recreational Activities

The coastal-marine environment supports numerous tourism and recreation activities. Tourism is a general term that encompasses any time spent away from home to pursue leisure or relaxation activities, while recreation refers to leisure activities undertaken for enjoyment by local residents in their free time, near where they live. For the purpose of the EAR, 'marine recreation' encompasses receptors and activities which are primarily associated with the marine environment below MHWS, including recreational boating, recreational fishing and recreational users at sea (e.g. surfers, scuba diving).

The NMPi and MMO data portals compile several data sources which provide an overview of leisure and recreational activities around the Scottish and English Coast, respectively (NMPi, 2021a; MMO, 2021a) including sea and shoreline angling, recreational boating clubs and areas, windsurfing, and scuba diving.

The marine recreational receptors within the study area are presented in Figure 15-2a-c.

15.5.1.1 Recreational Boating

In Scottish waters, there are two registered marinas within the proximity of the marine installation corridor namely, the Dunbar Sailing Club (which is located approximately 9.7 km to the north-west of the Scottish landfall (KP 0)) and the Eyemouth Harbour Trust (which is located approximately 8.6 km south of the marine installation corridor at its closest point (KP 20). The RYA UK Coastal Atlas (RYA,

2019) suggests that recreational boating traffic is moderately low, with some recreational traffic running along the coastline and from Eyemouth, intersecting the marine installation corridor at approximately KP 7 to KP 21.

In English waters, Seaham Harbour is located approximately 1.6 km south of KP 176. There are more than 20 sailing clubs and marinas along the coast within the study area, including the closest (Sunderland Yacht Club, located 7.5 km north of KP 176) and another five clubs which are recognised by the RYA as training centres. Five General Boating Areas are located along the Northumberland coast; at the English landfall, the General Boating Area, which extends between from Seaham to Ashington to the north, extends 8 km to sea, between KP 160 and the shoreline at KP 176. These areas consist of racing and training areas, defined through the RYA UK Coastal Atlas of Recreational Boating (RYA, 2019).

In English waters, the AIS intensity shows that recreational activity is highest inshore from the study area between Amble and Sunderland, crossing into the study area around Sunderland. Areas of moderate recreational activity intersect the marine installation corridor between approximately KP 159 and KP 173.

Tour boats and private charters operate in proximity to the marine installation corridor. For instance, Seaham Boat Charters, which operates out of Seaham Harbour, is located 1.6 km south of KP 176. In Scottish waters, Blue Wild Nature Boat Tours operates out of Dunbar, and travel to Bass Rock and the Isle of May, which are located outside the study area in the Firth of Forth.

Other recreational boating users could potentially be impacted by the Marine Scheme although the individual behaviour and navigation of recreational mariners is inherently difficult to predict. Further discussions regarding recreational boating in the proximity of the marine installation corridor are found in Chapter 13: Shipping and Navigation.

15.5.1.2 Recreational Fishing

Sea fishing is a popular recreational activity, which occurs from many different platforms including from shore, kayak, personal boat, and charter vessels. In the UK, recreational sea fishing is usually synonymous with angling. Angling pertains to fishing with lines, and within the UK, angling is almost entirely by line with rod and reel (MMO, 2020). Recreational sea fishing from the shoreline and by charter vessel occurs year-round; typically, fishing intensity changes throughout the seasons based on weather and water conditions, local behaviour of target species, and tourism patterns.

The nearshore and inshore waters crossed by the marine installation corridor in Scottish waters are used for recreational sea angling. A survey carried out for the Scottish Government in 2009 estimated that annual sea angler days spent in Edinburgh, Fife and South East Region totalled approximately 230,000 (The Scottish Government, 2009); between 2016 and 2019, the estimated number of annual sea angler days spent in Scotland had dropped from 42,000 to 88,000 days per annum (Cefas, 2021). This suggests that, whilst the marine installation corridor may cross areas that support recreational sea angling, popularity of sea angling in the area has declined over the past ten years.

There is a high intensity of sea angling from shore between North Berwick, located 25 km north of the Scottish landfall, and Eyemouth, located 21 km south; however, the greatest density of sea angling from a private or chartered boat is in Dunbar, with a medium to low intensity across the marine installation corridor, up to 30 km offshore (NMPi, 2015). According to FishingTheSpot, an online fishing community based in the UK, members have caught a variety of fish species near Thorntonloch, including but not limited to dab *Pleuronectidae*, the John Dory fish *Zeus faber*, wrasse *Labridae spp*., cod *Gadus morhua,* common smooth-hound *Mustelus mustelus*, weever *Trachinidae*, garfish *Belone belone*, pollack Poll*achius pollachius*, European eel *Anguilla anguilla*, and brill *Scophthalmus rhombus* (FishingTheSpot, n.d.). There appears to be one charter boat, Andara II, from Dunbar which is available for private fishing trips, operating from spring to late autumn. There may be other vessels of this nature that travel through the marine installation corridor but are not from the area.

In England, shoreline angling activities along the marine installation corridor are popular. One angling club operates in proximity to the English landfall, Seaham Sea Angling Club, and common places to fish are at Seaham Hall Beach and Seaham Pier. According to Sea Angler (2021), at the English landfall

along Seaham Hall Beach: "*Prolific species will be codling, whiting and bass, but coalfish, flounders, plaice and rockling all make an appearance. During flat calm, frosty nights, the whiting fishing can be fantastic, with fish attacking baits almost instantly and providing busy sessions. Summer fishing will be slow, with only the very occasional flatfish*."

Seaham Boat Charter, which operates out of Seaham Harbour, is available for fishing trips. MMO found that in terms of overall number of sea angling trips by charter boats in English waters there was a maximum in summer and a minimum in winter (summer, 61%; winter, 39%) (MMO, 2020). This is likely due to better weather and water conditions offshore, allowing for sea angling tourism.

15.5.1.3 Other Recreational Activities

Other recreational activities in the marine environment may take place sporadically along the east coast however recreational activity is primarily expected to be a feature of the nearshore area.

Due to the sporadic and largely unregulated nature of recreational activities, it is difficult to predict the exact nature and extent of each receptor. On this basis, a selection of notable examples is included below – this is intended to provide a high-level characterisation and is not intended to be an exhaustive list.

The following recreational activities were identified in Scottish waters (Figure 15-2a-c):

- **Scuba diving**: There are several scuba diving sites in the proximity of the landfall and along the marine installation corridor in Scottish waters, including Petico Wick, St Abbs Marine Park, Weasel Loch, Green Ends Gully and Nest Ends Gully. There is no 'limit' to the seaward extent of scuba diving, however dive sites are typically no more than 10-15 km from the shore (i.e. day-trip diving). On the east coast, the harsh conditions of the North Sea also mean that there is a tendency for inshore diving or diving within and around sheltered inshore features. This is also driven by the fact that these locations are typically where more reef, flora, fauna, and wreck features can be found (PADI, 2021; Finstrokes, 2021).
- **Kayaking, paddleboarding, and canoeing**: A study commissioned by the Scottish Government in 2015 indicated that kayaking and canoeing is popular along the East Lothian coast, including Thorntonloch beach (NMPi, 2015). Coast to Coast Surf Adventures operates out of Dunbar and Belhaven Bay, located just north of the study area.
- **Surfing**: The 2015 study by the Scottish Government also indicates notable surfing and surf kayaking along the East Lothian coast, including at Thorntonloch beach (NMPi, 2015). A local blog and tourism website indicates that the beach is popular with surfers (Visit East Lothian, n.d.); consultation received by Scottish Power Transmission stated that the 'Arches,' which is located between KP 0 and KP 1 within the marine installation corridor, was "*one of Scotland's biggest wave spots*" and that "*people travel from all across Scotland to surf it*" (Kirkham, 2022). During consultation with the Scottish Surfing Federation it was confirmed that the Scottish landfall was outside of the surfing area. Other notable surfing spots in the area include Belhaven Bay and Pease Bay, approximately 10.5 km north-west and 4 km south-east from the Scottish landfall respectively. The closest surf school, Coast to Coast, is located on the western side of Dunbar (in Belhaven Bay).
- **Windsurf and kite surfing**: Areas typically used for windsurfing and kite surfing in the proximity of the marine installation corridor at its landfall were not identified in the NMPi database (NMPi, 2015). During the non-statutory scoping report consultation, it was noted that Thorntonloch Beach is used on an occasional basis for windsurfing, with access through either the caravan park or from the Torness Power Station car park.
- **Bathing waters**: The northern half of Thorntonloch beach (approximately 200 m north of the marine installation corridor between KP 0 and KP 1) is designated bathing water. Whilst it appears to be a popular beach, there is no lifeguard service and minimal long-distance swimming occurs (NMPi, 2015). Four other bathing areas are identified along the Scottish coast (NMPi, 2021a).

The following recreational activities were identified in English waters (see Figure 15-2a-c):

- **Scuba diving**: Several Scuba diving sites have been identified along the coast parallel to the marine installation corridor; notable examples include the Farne Islands, Beadnell Point and Rumbling Kern, Collywell Bay, St Mary's Island, Browns Bay, and Haven Point (PADI, 2021; Finstrokes, 2021). Whilst there are no clubs in Seaham, Sunderland Scuba Centre is located 7.2 km north of KP 176.

- **Kayaking, paddleboarding, and canoeing**: Seaham Harbour Activity Centre was built in 2017 and now runs kayaking, paddle boarding, and canoeing activities all year round (Napper Architects, 2018).
- **Surfing**: No areas used for surfing in the proximity of the marine installation corridor at the English landfall were identified (Magic Seaweed, 2021). The closest notable surfing areas are located in Sunderland, over 10 km north of the landing point, where there are a number of surf schools and clubs, including Yonder Girls Surf Club and South Shields Surf School.
- **Bathing waters**: The marine installation corridor overlaps with designated bathing waters at Seaham and Seaham Beach (EEA, 2021). Open water swimming occurs within the harbour and Slope Beach all year round without restriction (Seaham Harbour Marina, n.d.).

Windsurfing and kite surfing are not recorded at the English landfall.

15.5.2 Other Sea Users and Offshore Infrastructure

The following other sea users have been reviewed within the study area in both Scottish and English Waters.

15.5.2.1 Oil and Gas Operations

There are no identified oil and gas installations or infrastructure within the study area (OGA, 2021). The closest oil and gas Licensed Block (Block number 41/1) lies approximately 10 km from the marine installation corridor at KP 154 (Figure 15-3 and Table 15-3), in English waters (OGA, 2021), however, there are no proposed works within it.

Table 15-3: Oil and gas blocks within 10 km of the marine installation corridor

Block	Admin Organisation	License Start Date	License Status	Distance from marine installation corridor
Scotland				
Not identified				
England				
41/1	SHELL U.K. LIMITED (00140141)	December 2020	Extant	10 km, at KP 154

15.5.2.2 Offshore Wind Farms

In Scottish waters, there are a number of existing and planned offshore wind farm sites in the Firth of Forth, located to the north of the study area, including Neart Na Gaoithe, Seagreen 1A Offshore Windfarm, Inch Cape Offshore Wind Farm and the proposed Berwick Bank Offshore Wind Farm[2]. The Berwick Bank Offshore Wind Farm is located 13.4 km north-east of the marine installation corridor from KP 27. Whilst none are located in the study area, the export cable for Neart Na Gaoithe will be installed approximately 350 m to the north-west of the marine installation corridor (CES, 2020a) and the proposed export cable for Berwick Bank Offshore Wind Farm will lie 3 km north of the marine installation corridor. These export cables are discussed further in Section 15.5.2.3.

In English waters, the Blyth Offshore Demonstration is located off the coast of Blyth. Blyth Offshore Demonstration Array 2 (Phase 1) lies 12 km west of KP 141, is currently operational and composed of five turbines. The closest site (Blyth Offshore Demonstration Array 4 (Phase 2)) lies 5 km west of the marine installation corridor and was consented in December 2021. It is due to be fully commissioned by 2025 (EDF, 2021). In addition, the marine installation corridor intersects with the Durham Coast wider area for potential future offshore wind developments, between KP 160 to KP 175 (TCE, 2019).

[2] In 2021, it was announced that Berwick Bank and Marr Bank wind farms have merged and continue to operate under the 'Berwick Bank' name (NS Energy Business, 2021).

GIS: LC Checked: SCN Approved: FF

Numbered unitary areas:
1 RENFREWSHIRE
2 EAST RENFREWSHIRE
3 GLASGOW CITY
4 NORTH LANARKSHIRE
5 CITY OF EDINBURGH

N

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170

0 25 50 km

Scale @ A3 1:600,000

Coordinate System: WGS1984 Zone 30N

nationalgrid
SP TRANSMISSION

PROJECT
Scotland England Green Link 1 / Eastern Link 1

KEY
- Marine Installation Corridor
- 10km Study Area
- Kilometre Point (KP)
- UK Territorial Sea Limit
- Scottish/English Water Border
- Angling
- Beach
- Dive Site
- General Boating
- Harbour / Marina
- Sailing Site
- Bathing Waters

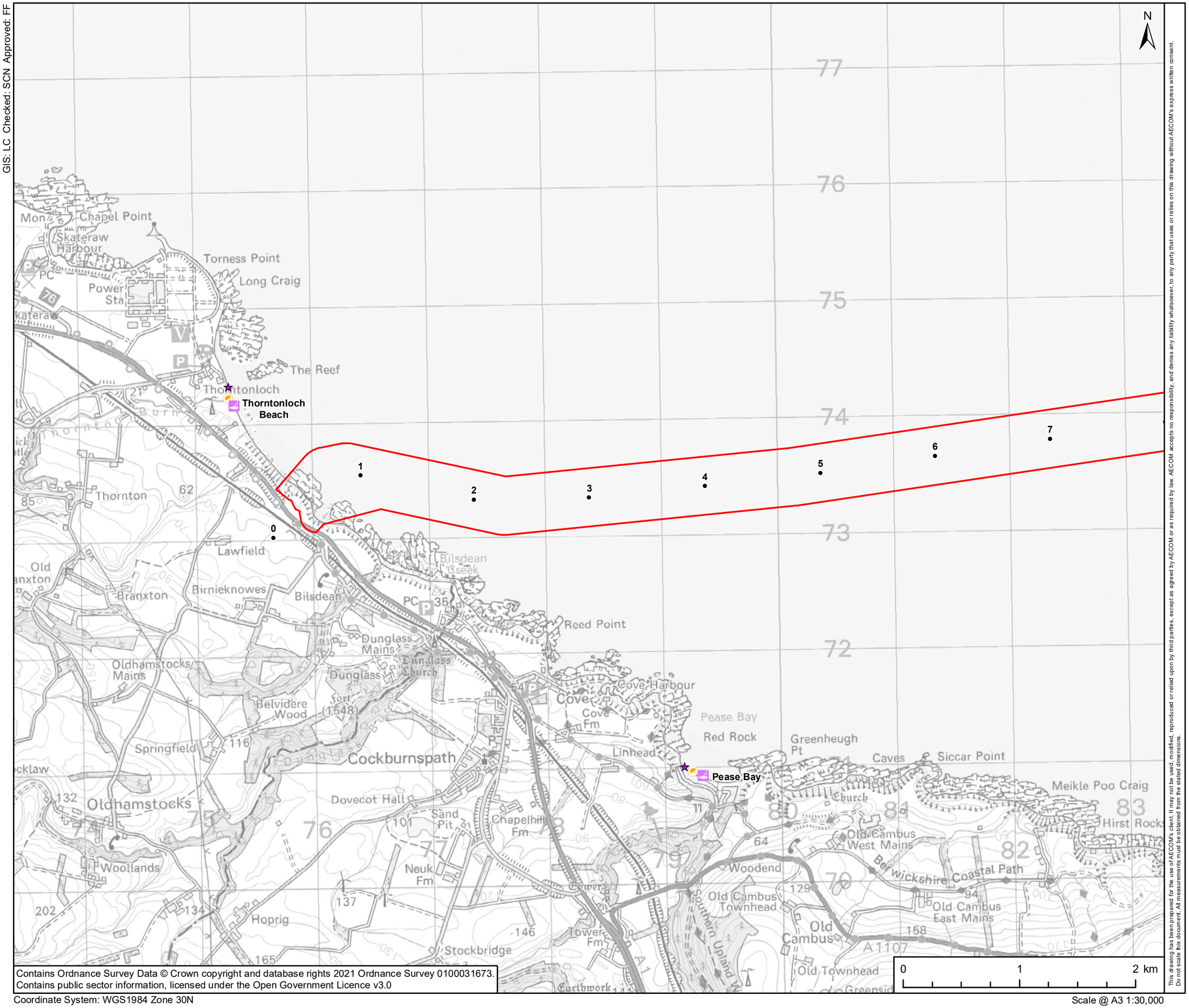
TITLE
Figure 15-2a
Marine Recreational Users in the Study Area - Overview

REFERENCE
SEGL1_M_EAR_15-2a_v1_20220228

SHEET NUMBER
1 of 1

DATE
28/02/2022

GIS: LC Checked: SCN Approved: FF



Coordinate System: WGS1984 Zone 30N

Scale @ A3 1:30,000

nationalgrid

SP TRANSMISSION

PROJECT

Scotland England Green Link 1 / Eastern Link 1

KEY

- Marine Installation Corridor
- Kilometre Point (KP)
- Angling
- Beach
- Bathing Waters

TITLE

Figure 15-2b
Marine Recreational Users in the Study Area - Scottish Landfall

REFERENCE

SEGL1_M_EAR_15-2b_v2_20220425

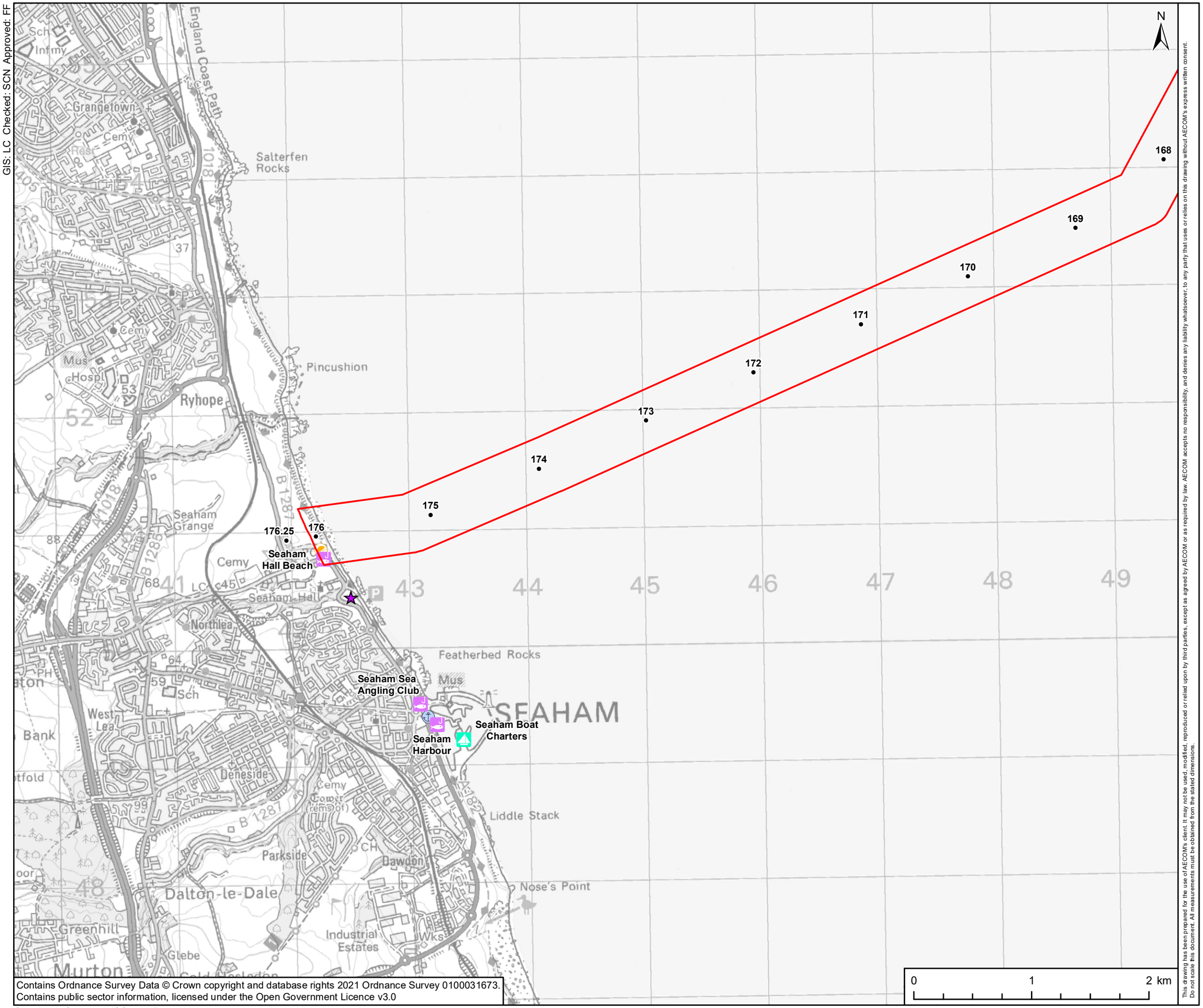
SHEET NUMBER

1 of 1

DATE

25/04/2022

GIS: LC Checked: SCN Approved: FF



Coordinate System: WGS1984 Zone 30N

Scale @ A3 1:30,000

nationalgrid
SP TRANSMISSION

PROJECT

Scotland England Green Link 1 / Eastern Link 1

KEY

- Marine Installation Corridor
- Kilometre Point (KP)
- Angling
- Beach
- General Boating
- Harbour / Marina
- Bathing Waters

TITLE

Figure 15-2c
Marine Recreational Users in the Study Area - English Landfall

REFERENCE

SEGL1_M_EAR_15-2c_v2_20220425

SHEET NUMBER: 1 of 1

DATE: 25/04/2022

15.5.2.3 Cable Crossings

The marine installation corridor does not cross any planned or in service cables in Scottish waters, though two cables are located in proximity to the marine installation corridor. The Neart na Goithe export cable is currently under construction and the landfall is at Thorntonloch Beach, 700 m north of the Marine Scheme. The preferred Berwick Bank Offshore Wind Farm export cable route landfall is at Skateraw, approximately 3 km north-west of KP 1, however the final route and proximity of the export cable is not finalised, and a potential crossing may be required.

In English waters, the marine installation corridor crosses a small number of planned and in service cables (Table 15-4).

Table 15-4: Cables that cross or lie in proximity to the marine installation corridor

Name	Developer/ Operator	Status	Type	Approximate KP of the marine installation corridor
Scotland				
Neart Na Gaoithe Offshore Wind Farm	EDF	Under construction	Offshore Wind Farm Export Cable	700 m north of KP 1
Berwick Bank Offshore Wind Farm	SSE	Proposed	Offshore Wind Farm Export Cable	3 km north of KP 1 (up to two crossings of this cable(s) has been incorporated in to the appraisal.
England				
North Sea Link (NSL) North Interconnector	National Grid Ventures	Operational	Power	Crossing between KP 128 to KP 129
NSL South Interconnector	National Grid Ventures	Operational	Power	Crossing between KP 128 to KP 129
NO-UK Fibre Optic Cable System	Altibox Carrier	Installed	Fibre Optic	Crossing between KP 135 to KP 136
Havhingsten Segment 2.1 North	Aqua Comms	Installed	Fibre Optic	Crossing between KP 137 to KP 138
Havhingsten Segment 2.1 South	Aqua Comms	Proposed	Fibre Optic	Crossing between KP 141 to KP 142
** Development highlighted in grey are part of the future baseline, i.e. not yet constructed and will have the potential for construction to coincide with that of the Marine Scheme between 2025 and 2029. These developments are also considered in further detail in Chapter 16: Cumulative and In-Combination Effects.*				

15.5.2.4 Dredging and Disposal Sites

Dredging represents an essential activity in ensuring efficient functioning of ports, harbours and marinas. Maintenance dredging ensures continued navigational access to ports and harbours, while capital dredging enables new activities to proceed by creating new, deeper and wider channels, and berths. Dredged material comprising marine sediment (mainly sand, silt and clays) dredged from dock sites and navigation channels may be disposed at sea.

Dredge and spoil deposit sites found within the study area are presented in Table 15-5.

Table 15-5: Dredge spoil deposit sites within the Study Area

Name	Status	Proximity to marine installation corridor	Approximate KP of the marine installation corridor
Scotland			
Dunbar	Closed	9.8 km north west	KP 1
St Abbs Head	Closed	10 km north	KP 18
Eyemouth	Open	7.8 km south-east	KP 34
England			
Tyne Industrial	Disused	5.4 km west	KP 137
Tyne	Disused	4.2 km west	KP 142
North Tyne †	Open	8.3 km west	KP 147
Howdon Area	Disused	5.0 km west	KP 148
Souter Point Outer	Open	3 km west	KP 156
Souter Point (Inner) †	Closed	3.3 km west	KP 156
Sunderland †	Open	5.9 km west	KP 164
Noses Point †	Open	3.2 km south-east	KP 175

† Denotes multiple marine licenses found for a single dredge and spoil deposit site.
** Sites highlighted in grey are no longer in operation.*

Navigational dredging was found to be undertaken in two ports along the coast parallel to the marine installation corridor: offshore from the Port of Sunderland, within an area defined as North Tyne (7 km north-west of KP 172) and Seaham Harbour (1.4 km south of KP 176).

15.5.2.5 Military Practice Areas

There are several military practice zones identified in the proximity of the marine installation corridor, including Areas of Intense Aerial Activities (AIAA), submarine exercise area, and practice and exercise area (surface fleet), surface danger areas, and firing danger areas (UKHO, 2021) (Figure 13-3 in Chapter 13: Shipping and Navigation).

In Scottish waters, there are two areas located approximately 4 to 8 km north of the marine installation corridor, between KP 0 to KP 30, both areas classified as submarine exercise area, practice, and exercise area (surface fleet).

In English waters, three areas classified as surface danger areas are located approximately 9 to 11 km east of the marine installation corridor, between KP 76 and KP 150; and another two AIAA are located approximately 5 km south-east of the corridor, between KP 160 to KP 168.

None of these areas will be crossed by the marine installation corridor, as confirmed by the EIA scoping report. Therefore, the Marine Scheme interaction with military areas will not be considered further within the EAR. Effects to any shipping and navigation associated with these areas will be covered in Chapter 13: Shipping and Navigation.

15.5.2.6 Aquaculture

There are no active, inactive, or deregistered marine aquaculture sites, or harvesting agreements, within the marine installation corridor landfall near Thorntonloch Beach, in Scottish waters, or in Seaham, in English waters.

In Scottish waters, parallel to the marine installation corridor and approximately 6 km south of KP 19, there is one active site for seawater finfish and shellfish aquaculture, at St Abbs Marine Station. The

Scottish National Marine Plan (Scottish Government, 2015) sets out the high-level continuing presumption against further marine finfish farm developments on the north and east coasts to safeguard migratory fish species (NMPi, 2021b).

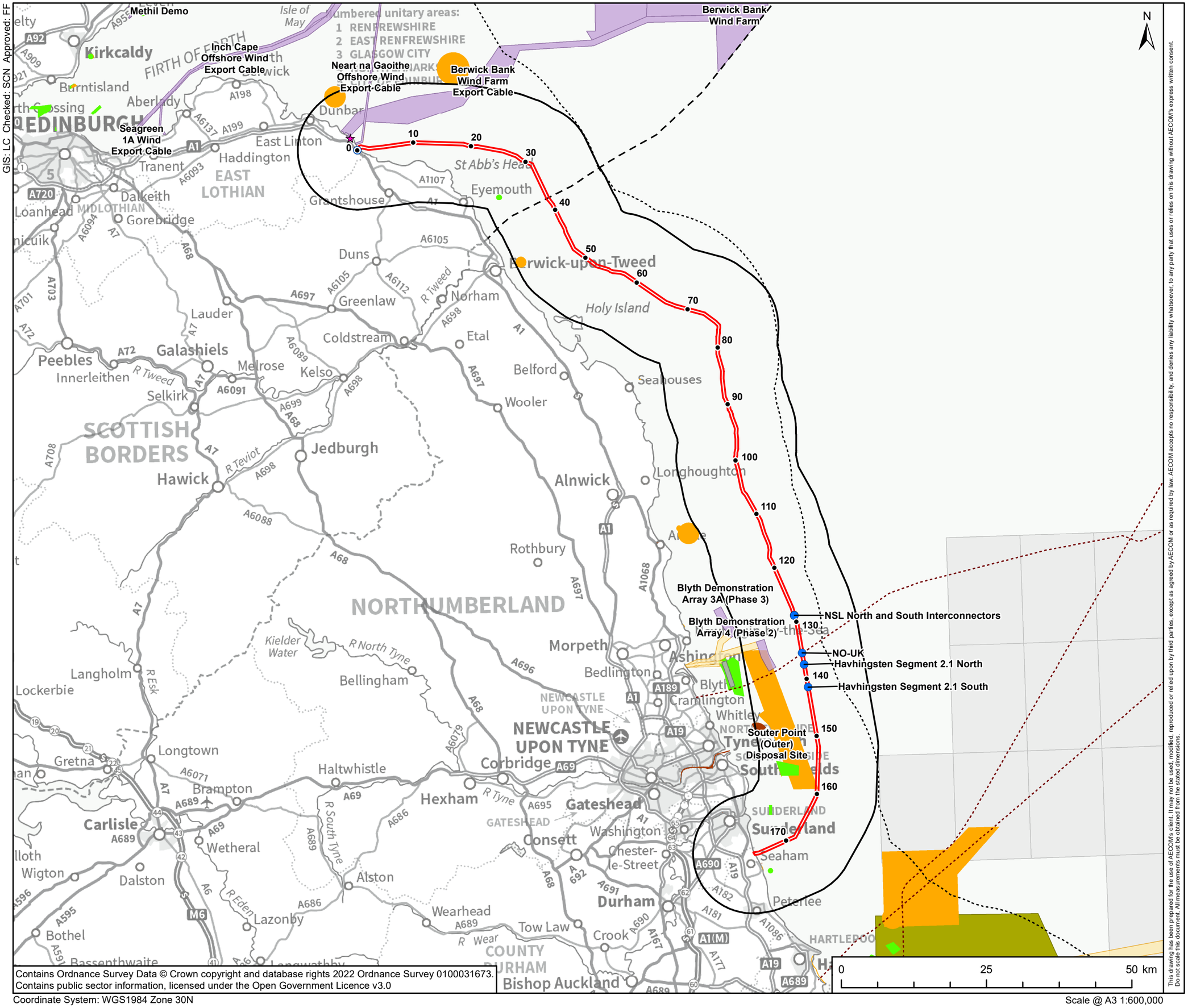
In English waters, there is one aquaculture site identified along the English coast parallel to the marine installation corridor, approximately 10 km south-west of KP 52, at Holy Island. The site is for native oyster shellfish and Pacific oyster shellfish production (MMO, 2021a).

The North East Inshore and North East Offshore Marine Plan (HM Govenment, 2021a) in England recognises aquaculture as a key area for development through its potential to contribute to the sustainability and security of the UK food supply which, in turn, may encourage growth in small and medium enterprises supporting the industry. A study published in 2019 identified areas of aquaculture potential in English waters and defined strategic areas of sustainable aquaculture production (MMO, 2019). These may provide a potential future source of employment in deprived or peripheral areas, or those with a limited numbers of alternative employment options. It is seen as an industry where development could occur particularly at local levels (HM Government, 2021b). In this context, the plan defines strategic areas of sustainable aquaculture production, many of which will be crossed by the marine installation corridor (MMO, 2019b; MMO, 2021a).

15.5.2.7 Other Developments

Other developments identified within the proximity of the marine installation corridor include the Torness Nuclear Power Station, located on the East Lothian coast approximately 2.2 km to the north-west of the Scottish landfall. The power plant activities at sea consist of repair and maintenance works to their cooling water system (seawater intake), which may be unplanned due to emergency safety requirement (MMO, 2021c).

GIS: LC Checked: SCN Approved: FF



Coordinate System: WGS1984 Zone 30N

Scale @ A3 1:600,000

nationalgrid

SP TRANSMISSION

PROJECT

Scotland England Green Link 1 / Eastern Link 1

KEY

- Marine Installation Corridor
- 10km Study Area
- Kilometre Point (KP)
- UK Territorial Sea Limit
- Scottish/English Water Border
- Torness Nuclear Power Station
- Crossing Point
- Pipeline / Cable
- Oil and Gas Licensed Block
- Offshore Wind Site Agreement
- Offshore Wind Cable Agreements
- Offshore Minerals Aggregates, Evaprites and Mining Site Agreement
- Existing Dredge Site

Dredge Spoil Disposal Site

- Closed
- Open

TITLE

Figure 15-3
Offshore Infrastructure in the Study Area

REFERENCE

SEGL1_M_EAR_15-3_v5_20220427

SHEET NUMBER: 1 of 1

DATE: 27/04/2022

15.6 Appraisal of Potential Impacts

This section discusses the potential impacts of the Marine Scheme on other sea user receptors identified in Section 15.5 during the installation, operation (including maintenance and repair) and decommissioning phases of the Marine Scheme as presented in Chapter 2: Project Description. The appraisal has been undertaken in accordance with the methodology presented in Chapter 4: Approach to Environmental Appraisal.

15.6.1 Embedded Mitigation

The following mitigation has been built into the Marine Scheme to avoid and minimise effects to the environment, including other sea users, and is presented in Table 15-6. This mitigation has been developed with consideration of consultee comments and will be either incorporated into the consented scheme design and construction programme or secured via consent condition through the marine licence issued by MS-LOT and MMO in Scotland and England respectively.

Table 15-6: Other Sea Users Embedded Mitigation

Measure	Description
Pre-Installation	
Micro-routeing	Detailed route development and micro-routeing to be undertaken within the marine installation corridor to avoid or minimise localised engineering and environmental constraints. As identified within Chapter 5, the marine installation corridor has been positioned to avoid interaction with a range of receptors, including marine recreational activities and third-party infrastructure development and operators, as far as possible.
Construction Environmental Management Plan (CEMP)	A CEMP, including an Emergency Spill Response Plan, Waste Management Plan, Marine Mammal Management Plan, Fisheries Liaison and Co-existence Plan and Fisheries Management and Mitigation Strategy will be developed prior to commencement of works.
Legislative requirements and mitigation for vessels	• All vessels will follow the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) and International Convention for the Safety of Life at Sea 1974 (SOLAS); • All vessels will broadcast their status on AIS at all times; • Guard vessels will use radio detection and ranging (RADAR) with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions, will be employed to work alongside the installation vessel(s) during installation and maintenance work (which will also minimize anchor disturbance on the seabed); • An advisory 500 m safety zone will be established around all vessels associated with the installation works;
Notifications	Notice(s) to Mariners' (including Kingfisher), Radio Navigational Warnings, NAVTEX and/or broadcast warnings will be issued prior to the commencement of installation works;
Installation	
Landfall installation	Horizontal Directional Drilling (HDD) will be used at both landfalls to install the cables beneath the shallow subtidal and the intertidal (between MHWS and MLWS) zone to the landfall. This will keep sediment disturbance to a minimum, significantly reduce (if not avoid) the use of cable protection measures close to shore and avoid directs on sensitive coastal and intertidal habitats and features.

Measure	Description
Third-party cable crossings	Each cable crossing will be designed in detail in accordance with the International Cable Protection Committee recommendations. Proximity and Crossing Agreements will be agreed with cable and pipeline owners. The Crossing Agreement describes the rights and responsibilities of the parties and also the design of the crossing. Crossing design will be in line with industry standards, using procedures and techniques agreed with the cable and pipeline owners. Proximity agreements describe the approach to works close to, but not crossing third party assets, to ensure safety.

15.6.2 Installation Phase

15.6.2.1 Disruption to marine recreational users

As described in Section 15.6.1, HDD will be used to install the cables below the intertidal zone (between MHWS and MLWS), avoiding any direct interactions with the seabed. The boreholes will be drilled from a temporary onshore drilling compound (within the scope of the onshore project schemes) to an exit pit[3] (or 'breakout') within the subtidal zone.

During cable installation, an advisory safety zone will be established around cable installation vessel(s), some of which will operate in shallow intertidal waters (i.e. within a depth of 10 m). The advisory safety zone will extend 500 m from the extent of each vessel including the extent of any required anchoring system. Anchors may be placed on the seabed up to 1 km from the installation vessels: resulting in a safety zone of up to 1.5 km from the installation vessel. In water deeper than 10 m, anchoring is not expected to be required (vessels will maintain position using Dynamic Positioning) and the advisory safety zone will extend 500 m from the installation vessels.

Installation at each landfall is anticipated to take approximately six months, with installation expected over spring and summer, avoiding poor weather in winter. This is likely to coincide with the more popular times of the year for marine recreational activities.

For further information on the installation phase of the Marine Scheme, see Chapter 2: Project Description.

Recreational Boating

As detailed in Chapter 13: Shipping and Navigation in Scottish waters recreational vessel activity is focused around Eyemouth Harbour, routeing north-west up the Scottish coast as well as south into English waters. Port of Tyne, Port of Sunderland, Port of Blyth and Seaham Harbour in English waters show recreational vessel activity routeing to and from their ports and harbours and intersecting the marine installation corridor. It should also be noted that sailors from other harbours and marinas along the coast will also travel through the marine installation corridor.

Recreational boating also includes offshore tour operators, which can be found near to both Scottish and English landfalls.

There is a risk of vessel-to-vessel collision which is considered further in Chapter 13: Shipping and Navigation.

There is potential for boaters to lose access to certain areas they would normally travel through for recreational purposes during the installation of the Marine Scheme. It is not anticipated that any of the harbours or marinas in proximity to the marine installation corridor will be affected by the works and vessels will still be able to access them. Notice(s) to Mariners will be issued to the harbours at least 14 days before any works and include information on timings and location of installation activities prior to commencement. The magnitude of change has been appraised as low as the installation works will be short term (<1 year). The sensitivity of the sailing clubs and harbours at the proposed landfalls has been

[3] The exit pit is the end of the HDD bore within the subtidal zone.

appraised as negligible because although the installation works will be a short-term inconvenience for users at both landfalls, users will be well informed of the works timing and location, are highly mobile, and have easy access to other areas in close proximity. The effect upon marine recreational users has been appraised as **negligible** and therefore **not significant**.

Recreational Fishing

Sea fishing boat operators function from both landfalls all year round and are likely to travel through the marine installation corridor and the advisory 500 m safety zone. There may be an economic impact if these vessels were not able to operate. Cable installation is likely to predominantly take place during summer months, which is generally the most popular times of the year for tourism and sea fishing. Angling clubs and sea fishing boat operators will be sent Notice(s) to Mariners via the local harbours. As per recreational sailing users, operators will be able to use alternate routes and areas. The magnitude of impact is appraised as low as the installation works will be short term (<1 year) and localised. Sensitivity of recreational fishers has also been appraised as low because although the installation works will be a short-term inconvenience for offshore tour and sea fishing boat operators wishing to use areas close to both landfalls, users will be well informed of the works timing and location, are highly mobile and have easy access to other areas in close proximity. Shore-based anglers will not be affected by the installation works as beaches will remain open and their sensitivity is considered to be negligible. The effect upon offshore tour and sea fishing boat operators and shore-based anglers has been appraised as **negligible** and is therefore considered **not significant**.

Other Recreational Activities

It is assumed that beaches will remain open to the public during the installation phase of the Marine Scheme and shore based recreational users (beach users, walkers etc) will not be directly affected.

Some recreational activities utilising small boats to access shallow waters shoreward of the installation activities have the potential to be negatively affected, including dingy sailing, scuba diving, and kayaking. However, activities closer to shore, such as swimmers, surfers, wind and kite surfers, and paddle boarders may still be able to function close to shore but may be limited in their access to areas within the safety zone.

Installation at the Scottish landfall will avoid the majority of Thorntonloch beach and does not fall within designated bathing waters, so beachgoers will be able to use other parts of the beach. Similarly, Seaham Hall beach is part of an extensive stretch of beaches along the north-east England coastline and temporary disruption caused by the installation of the Marine Scheme are thought to be minimal.

Appropriate notification will be put in place to advise beachgoers and those using areas for recreation. The magnitude of change has been appraised as low as the installation works will be short term (<1 year) and the potential loss of access will be limited. The sensitivity at both landfalls is considered to be negligible as recreational users will have access to other areas in the short term. Impact effects upon shore-based and nearshore users is appraised as **negligible** and therefore **not significant**.

15.6.2.2 Disruption to vessel routeing and access to other sea user working areas

The risk of vessel-to-vessel collision and disruption to vessel routeing is appraised in Chapter 13: Shipping and Navigation.

Oil and Gas Operations

Due to the distance between the marine installation corridor and the extant oil and gas block within the study area, effects upon oil and gas operations are unlikely. Temporary restriction to the traffic of oil and gas vessels may occur if works were to recommence. However, regular consultation will be made with infrastructure asset owners to notify them of any activities associated with the Marine Scheme and avoid spatial and temporal interactions between vessels. The sensitivity of the receptor and magnitude of change are appraised as low and the overall effect as **negligible** and therefore **not significant**.

Dredging and Disposal Sites

Several open dredging and disposal sites were identified within the study area, with the closest being located 3 km to the west. The dredging and disposal site operators are considered to have high tolerance for change and are therefore considered to have low sensitivity. Impacts to dredging and disposal operations are appraised as unlikely; if operations of the Marine Scheme were to coincide with dredging and disposal operations, impacts would include temporary restriction to the traffic of dredging and disposal vessels. Consultation will be undertaken with dredging and disposal site operators to avoid spatial and temporal interactions between vessels. The sensitivity of the receptor and magnitude of the impact are appraised as low and the overall effect as **negligible** and therefore **not significant**.

Offshore Wind Farms and Pipelines and Cable Crossings

One proposed wind farm, Blyth Offshore Demonstration Array 4 (Phase 2), lies within the study area, whilst the proposed export cables for Neart Na Gaoithe and Berwick Bank are likely to either come in close proximity with the marine installation corridor. Both Blyth Offshore Demonstration Array 4 (Phase 2) and Neart Na Gaoithe are likely to be operational during the installation phase of the Marine Scheme. Effects to existing wind farm operations were appraised as unlikely; if operations of the Marine Scheme were to coincide with export cable or array installation or maintenance operations, impacts would include temporary restriction to the traffic accessing offshore wind farms. Regular consultation will be made with infrastructure asset owners to notify them of any activities associated with the Marine Scheme and avoid spatial and temporal interactions between vessels. The sensitivity of the receptor and magnitude of change are appraised as low and the overall effect as **negligible** and therefore **not significant**. Effects associated with damage to third-party infrastructure, including wind farm export cables, are presented in Section 15.6.2.3.

Aquaculture

The marine installation corridor does not cross any active, inactive, or deregistered marine aquaculture sites; however, vessels associated with installation of the Marine Scheme could disrupt planned aquaculture activities or their access to aquaculture sites. Appropriate notification will be put in place to advise aquaculture operators of activities associated with the Marine Scheme. The sensitivity of the receptor is considered to be low and the magnitude of change has been appraised as low. The effect has been appraised as **negligible** and therefore **not significant**.

15.6.2.3 Damage to or interference with a third-party cable asset

Crossings infrastructure will be required where the marine installation corridor crosses existing subsea cables. The project design as presented in Chapter 2: Project Description, anticipates that cable protection will be installed over existing infrastructure to be crossed and the cable laid atop in order to maintain separation between the two and to prevent damaging the existing infrastructures. All crossings will be constructed in strict accordance with the terms of the crossing agreements put in place with the third-party owners of the assets to be crossed before installation commences.

The Scottish landfall lies 700 m to the south of the landfall for the Neart Na Gaoithe Offshore Windfarm, which is expected to be fully commissioned in 2023. A crossing agreement may still be required to describe the rights and responsibilities of each party to such aspects as anchoring to avoid adverse interaction between the Marine Scheme and the cable associated with the Neart Na Gaoithe Offshore Windfarm.

Embedded mitigation measures are in place to reduce risk to third-party assets such as cables as much as reasonably practical. The magnitude of change has been appraised as low as it is site-specific and short term. Any unplanned interaction causing damage to third-party infrastructure would potentially compromise the intended purpose of the cable or pipeline, resulting in major financial consequences for the company. However, with regular consultation with the asset owner, proximity agreements in place (Table 15-6) and the crossing design being in line with industry standards, cables are considered to be of medium sensitivity.

The effect has been appraised as **minor**, which is **not significant**.

15.6.3 Operation Phase

Following installation, the cable system is designed to minimise scheduled maintenance, and no routine maintenance work is planned on the cables or their infrastructure during the lifetime of the Marine Scheme.

Monitoring surveys will be undertaken every three years to investigate the need for preventative maintenance such as addition of burial protection along parts of the cable route. Should minimal or no changes be detected, the monitoring frequency may be reduced to every 10 years.

Repairs to subsea cables that have been designed, manufactured, installed, and protected correctly are not common. In the event that repairs are required, safety zones will be established to the same extent as in the installation phase, and there will be temporary access requirements and disruption to vessel movements, as experienced in the installation phase. Assuming appropriate notifications of any intended works is circulated to relevant marine recreational and commercial users in advance, the magnitude of the maintenance works are expected to be low. It is noted that maintenance work is expected to be less disruptive and be undertaken over a shorter period than the installation phase.

Impacts during any unforeseen works during the operation (including maintenance and repair) phase will be of a smaller magnitude when compared to the installation phase, and the magnitude has been appraised as low for all potential impacts. For the majority of impacts upon marine recreational and commercial users, the effect has been appraised as **negligible** and therefore **not significant**.

Embedded mitigation measures are in place to reduce risk to third-party assets such as cables as much as reasonably practical. The magnitude of change has been appraised as low as it is site-specific and short term. Any unplanned interaction causing damage to third-party infrastructure would potentially compromise the intended purpose of the cable or pipeline, resulting in major financial consequences for the company. However, with regular consultation with the asset owner, proximity agreements in place (Table 15-6) and the crossing design being in line with industry standards, cables are considered to be of medium sensitivity. The effect has been appraised as **minor**, which is **not significant**.

15.6.4 Decommissioning Phase

At the end of the Marine Scheme's operational life, the options for decommissioning will be evaluated. The principal options for decommissioning include leaving the cable in situ or removing either sections or the entirety of the cable. Further information on the decommissioning phase can be found in Section 2.5 of Chapter 2: Project Description.

If the submarine cables are left in situ, likely significant effects from decommissioning will be avoided. If the submarine cables are to be removed, this appraisal assumes that impacts from decommissioning activities are of a similar nature to installation activities and would be of a similar or lesser scale. For the majority of impacts upon marine recreational and commercial users, the effect has been appraised as **negligible** and therefore not considered to be **significant**.

15.7 Mitigation and Monitoring

No significant effects are predicted on other sea user receptors as a result of the marine installation, operation (including maintenance and repair) and decommissioning; therefore, no additional specific mitigation measures are required.

15.8 Residual Impacts

Following implementation of embedded mitigation measures set out in this chapter; the residual effects have been appraised as **negligible** and therefore **not significant**.

15.9 Cumulative and In-Combination effects

The full cumulative and in-combination effects appraisal is presented in Chapter 16: Cumulative and In-Combination Effects.

This includes a matrix (Table 16-14 in Chapter 16) to identify potential other sea users impact pathway interactions between the Marine Scheme and the English and Scottish Onshore Schemes and no interaction is anticipated because:

- Construction methods (HDD used at both the Scottish and English landfalls);
- Breakout points are at a sufficient distance from the Scottish and English Onshore Scheme that will not coincide with the onshore works; and
- Vessel works are also expected to commence after completion of HDD in most instances.

In-combination effects are where receptors could be affected by more than one environmental impact. Where a receptor has been identified as only experiencing one effect or where only one topic has identified effects on that receptor, there is no potential for in-combination effects. The receptor groups within this chapter do not interact between chapters, therefore receptors have been wholly appraised within this respective topic chapter.

15.10 Summary of Appraisal

Table 15-7 presents the summary of the impact appraisal and residual effects.

Table 15-7: Summary of environmental appraisal

Project Phase	Potential Impact	Receptor	Sensitivity	Magnitude	Significance/ Risk	Project Specific Mitigation	Significance of Residual Effect
Installation	Disruption to marine recreational users	Recreational boaters	Low	Low	**Negligible**	No specific mitigation required.	**Negligible** which is **not significant**
		Sea anglers	Low	Low	**Negligible**		**Negligible** which is **not significant**
		Marine recreational users	Low	Low	**Negligible**		**Negligible** which is **not significant**
	Disruption to vessel routeing and access to other sea user working areas	Oil and gas blocks owners	Low	Low	**Negligible**	No specific mitigation required.	**Negligible** which is **not significant**
		Dredging and disposal site owners/ operators	Low	Low	**Negligible**		**Negligible** which is **not significant**
		Cable owners/ operators	Low	Low	**Negligible**		**Negligible** which is **not significant**
		MOD	Low	Low	**Negligible**		**Negligible** which is **not significant**
		Aquaculture operators	Low	Low	**Negligible**		**Negligible** which is **not significant**
	Risk of damage to or interference with a third-party cable or pipeline asset	Cable asset owners	Medium	Low	**Minor**	No specific mitigation required.	**Minor** which is **not significant**
Operation	Disruption to marine recreational users	Recreational boaters	Low	Low	**Negligible**	No specific mitigation required.	**Negligible** which is **not significant**
		Sea anglers	Low	Low	**Negligible**		**Negligible** which is **not significant**
		Marine recreational users	Low	Low	**Negligible**		**Negligible** which is **not significant**
	Disruption to vessel routeing and access to	Oil and gas blocks owners	Low	Low	**Negligible**	No specific mitigation required.	**Negligible** which is **not significant**

Project Phase	Potential Impact	Receptor	Sensitivity	Magnitude	Significance/ Risk	Project Specific Mitigation	Significance of Residual Effect
	other sea user working areas	Dredging and disposal site owners/ operators	Low	Low	**Negligible**		**Negligible** which is **not significant**
		Cable owners/ operators	Low	Low	**Negligible**		**Negligible** which is **not significant**
		MOD	Low	Low	**Negligible**		**Negligible** which is **not significant**
		Aquaculture operators	Low	Low	**Negligible**		**Negligible** which is **not significant**
	Risk of damage to or interference with a third-party cable or pipeline asset	Cable asset owners	Medium	Low	**Minor**	No specific mitigation required.	**Minor** which is **not significant**
Decommissioning	Potential effects of decommissioning the same as installation.						

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