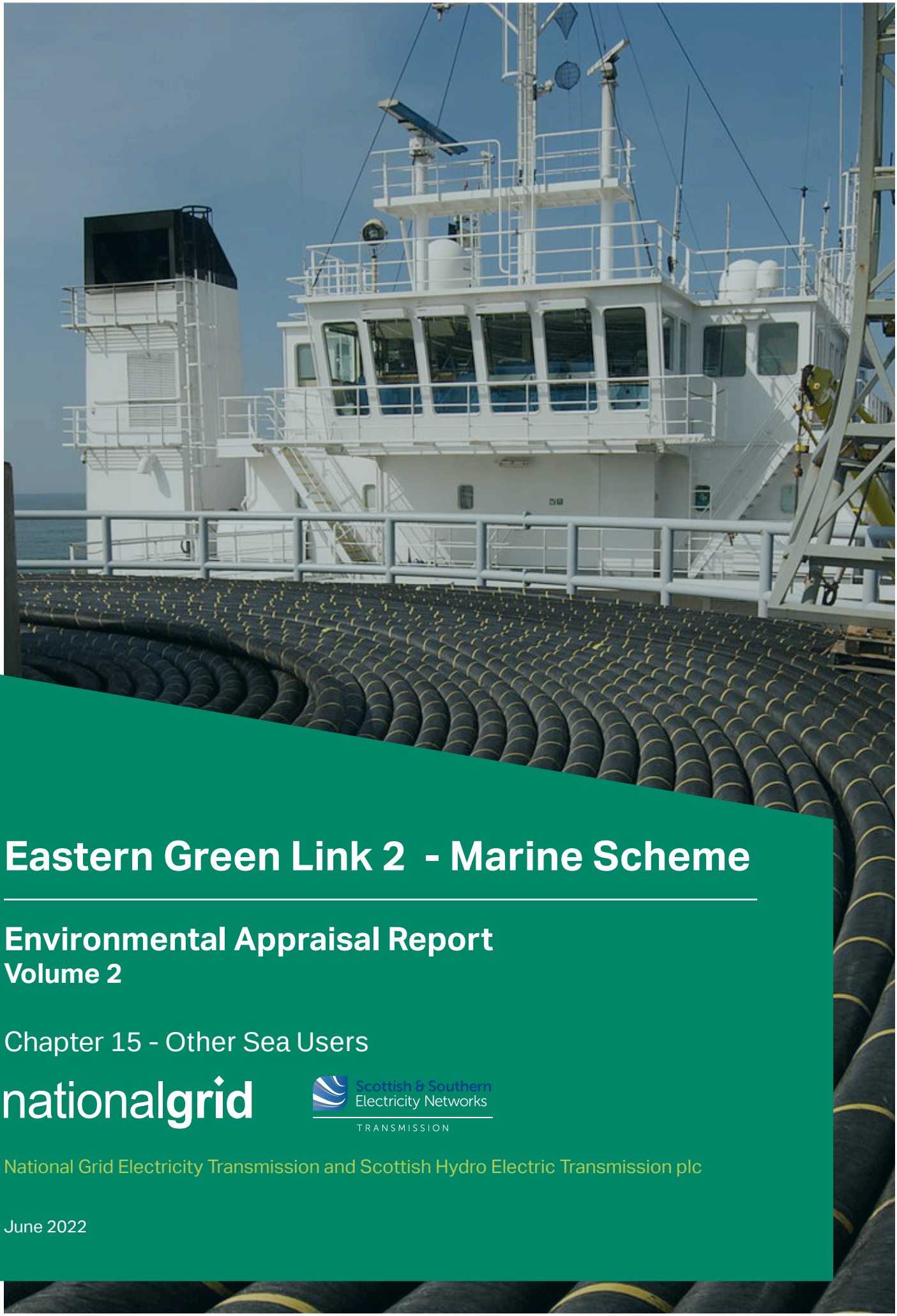

Eastern Green Link 2 - Marine Scheme

Environmental Appraisal Report
Volume 2

Chapter 15 - Other Sea Users

nationalgrid

Scottish & Southern Electricity Networks
TRANSMISSION

National Grid Electricity Transmission and Scottish Hydro Electric Transmission plc

June 2022

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National Grid Electricity Transmission and
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Wessex Archaeology (Marine Archaeology); and

Brown and May Marine Ltd (Commercial Fisheries).

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15. Other Sea Users

15.1 Introduction

This chapter of this Environmental Appraisal Report (EAR) presents the 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.

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. These fall within the scope of the Scottish and English Onshore Schemes, which have been appraised separately:

- 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/ or projects, which may result in cumulative effects, are considered in Chapter 16: Cumulative and In-Combination Effects.

15.2 Policy and Guidance

This section outlines legislation, policy, and guidance relevant to the appraisal of the potential effects on other sea users associated with Installation, Operation and Maintenance, and Decommissioning Phases of the Marine Scheme. For further information regarding the legislative context, refer to Chapter 3: Legislative and Policy Framework and Appendix 3.2: Topic Specific Legislation.

15.2.1 National Policy

The following national and devolved policies concerning the safety of commercial, government and recreational maritime users within the vicinity of proposed cable projects. The following policies must be implemented during both the planning and execution of projects such as offshore cable development in UK waters:

15.2.1.1 UK (England and Scotland)

- UK Marine Policy Statement (MPS) (HM Government, 2011); and
- Marine and Coastal Access Act (MCAA) 2009 (HM Government, 2009).

15.2.1.2 Scotland

- Marine (Scotland) Act 2010 (Scottish Government, 2010); and
- Scottish National Marine Plan (2015) (Scottish Government, 2015).

15.2.1.3 England

- North East Inshore and North East Offshore Marine Plan (HM Government, 2021); and
- East Inshore and East Offshore Marine Plan (HM Government, 2021).

15.2.2 Guidance

Best practice guidelines regarding offshore cable projects' impact on commercial, government and recreational maritime users with the proposed project vicinity. The following existing guidance should be noted:

- International Cable Protection Committee (ICPC) Recommendation No.2. Cable Routing and Reporting Criteria (ICPC, 2015);
- International Cable Protection Committee (ICPC) Recommendation No.3. Cable and Oil Pipeline/ Power Cables Crossing Criteria (ICPC, 2014);
- International Cable Protection Committee (ICPC) Recommendation No.13. The Proximity of Offshore Renewable Wind Energy Installations and Submarine Cable Infrastructure in National Waters (ICPC, 2013);
- Energy Installations and Submarine Cable Infrastructure in National Waters (ICPC, 2013);
- The European Subsea Cable Association (ESCA) guideline No.6. 'The Proximity of Offshore Renewable Energy Installations & Submarine Cable Infrastructure in UK Waters' (ESCA, 2016); and
- Guidance on assessing the socio-economic impacts of offshore wind farms (OWFs), produced by Oxford Brooks and Vattenfall (Glasson et al., 2020).

15.3 The Study Area

For the purpose of baseline characterisation and this appraisal, an indicative corridor of 10 km width either side of the Marine Installation Corridor has been established, and this defines the Study Area (Figure 15-1). The Study Area is defined by the extent of potentially affected other sea users who 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 has been based 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 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, 2022);
- 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, 2022);
- Environmental Agency: Bathing waters in England (EEA, 2021);
- The Kingfisher Information Service – Offshore Renewable Cable (KIS-ORCA): Marine cables digital data (KIS-ORCA, 2022);
- Marine Management Organisation (MMO): 'Explore Marine Plans' 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 Finstrokes, 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) NorthConnect, NO-UK, North Sea Network, Havhingsten, Northern Endurance Partnership (NEP), and Hornsea Four;
- Royal Yacht Association (RYA): UK Coastal Atlas of Recreational Boating (RYA, 2019);
- 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);
- 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

A non-statutory scoping report, submitted to and consulted on by the MMO and the Marine Scotland Licensing Operations Team (MS-LOT) in June 2021, identified aspects of the Marine Scheme that have the potential to impact other sea users during the Installation, Operation and Maintenance, and Decommissioning Phases of the Marine Scheme. Their feedback on the proposal and EAR scope has been considered in this chapter.

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

In addition, engagement with known developments in proximity of the Marine Installation Corridor, including those requiring crossing agreements or proximity agreements; engagement is being undertaken by the project team during the design stage and will continue as required.

15.4.3 Data Gaps and Limitations

Baseline conditions have primarily been established through a desktop review of a range of official governmental data portals, except for baseline information on recreational boating activities, which relies on traffic data for recreational boats, a limited number of studies and surveys, and information 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 environmental appraisal 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 recreational fishing and pleasure boats under 15 m in length are likely to be underestimated in the data because they may not be fitted with AIS. This is further discussed in Chapter 13. Shipping and Navigation.

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.

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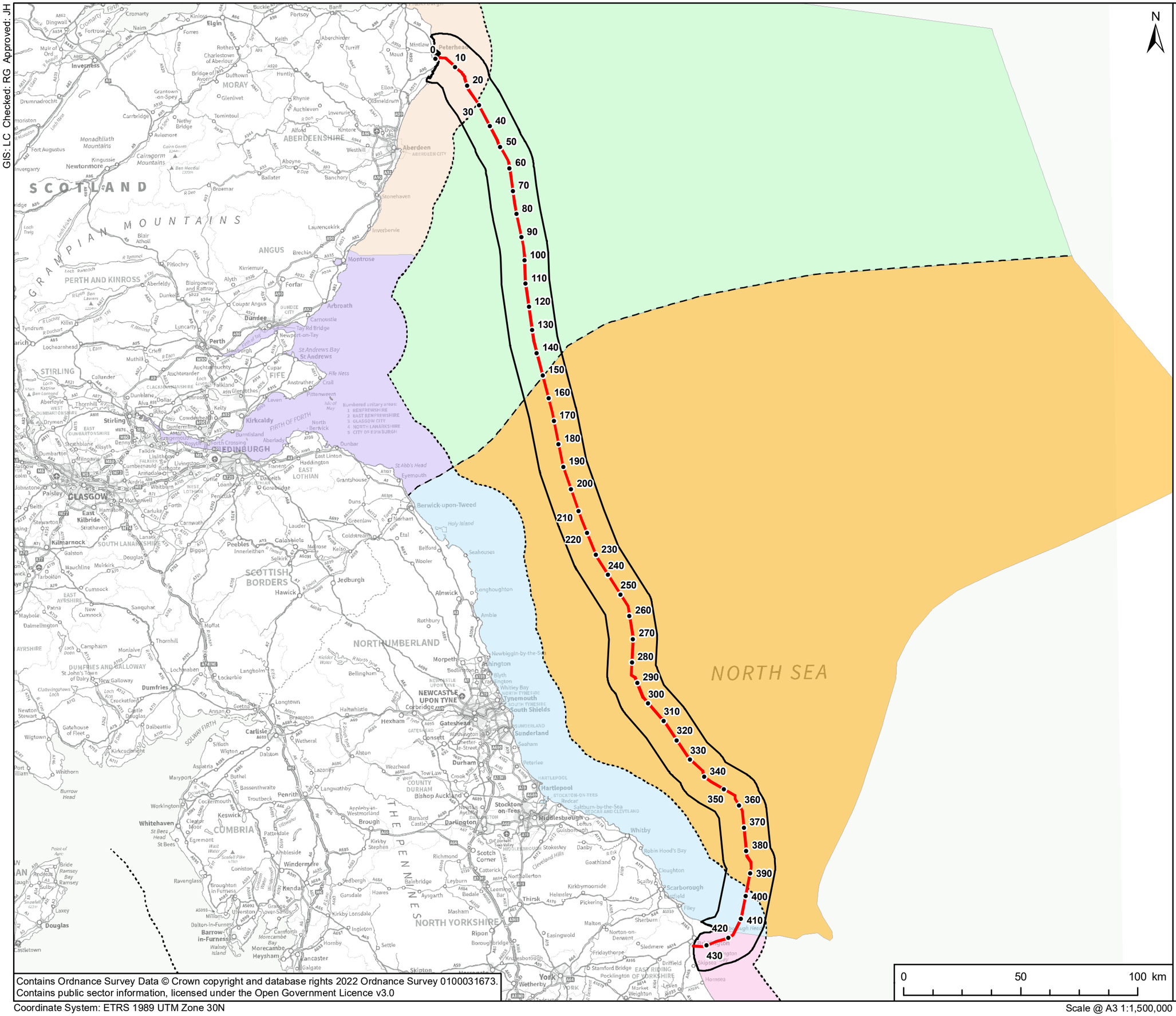

Coordinate System: ETRS 1989 UTM Zone 30N

Scale @ A3 1:1,500,000

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PROJECT
Eastern Green Link 2

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
- North East

Marine Plan Area (England)

- East inshore
- North East inshore
- North East offshore

TITLE
Figure 15-1
Other Sea Users Study Area

REFERENCE
SEGL2_M_EAR_15-1_v3_20220518

SHEET NUMBER
1 of 1

DATE
18/05/2022

15.5 Baseline Conditions

This section provides the baseline characterisation of other sea users' activities within the study area defined in Section 15.3. The following aspects have been scoped out from further assessment or are covered elsewhere within the EAR:

Table 15-1. Other Sea Users Scoped out of Further Assessment

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 Project Onshore Scheme assessments. 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[1], wave or tidal developments or mineral or aggregate extraction sites identified within 10 km of the Marine Installation Corridor, therefore these receptors have been scoped out of further assessment.
Wave or tidal Developments	
Mineral or aggregate extraction sites	
Marine aquaculture sites	There are no active, inactive, or deregistered marine aquaculture sites in the Marine Installation Corridor and therefore this receptor has been scoped out of further assessment. It is noted that, according to the Scottish National Marine Plan, there is a continuing presumption against further marine finfish farm developments on the north and east coasts of Scotland to safeguard migratory fish species. In England, the North East Inshore and North East Marine Plan and the East Inshore and East Offshore Marine Plan both recognise 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 (HM Government, 2014; HM Government, 2021). A study published in 2019, identified areas of aquaculture potential in English waters (MMO1184) and defined strategic areas of sustainable aquaculture production. These may provide a future potential source of employment in disadvantaged 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 when approaching its landfall, between KP396 and KP435 (MMO, 2019; MMO, 2021a). As there are no specific aquaculture sites, only strategic sites identified, aquaculture has been scoped out from further assessment.

Therefore, 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;
- Renewable energy developments (offshore wind, tidal and wave, etc.);
- Dredging and disposal sites/activities;
- Military practice areas;
- Pipeline and cables; and
- Other developments, such as those near the landfall that may be affected by activities at sea.

[1] The proposed export cable for the Northern Endurance Partnership (NEP) is crossed by the Marine Scheme at KP 380 and discussed in Section 15.5.2.3.

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 this EAR, 'marine recreation' encompasses receptors and activities which are primarily associated with the marine environment below Mean High Water Spring (MHWS), including recreational boating, recreational fishing, and recreational users of the sea (e.g., surfers, scuba diving).

The NMPi (Marine Scotland) and MMO data portals compile several data sources which provide an overview of leisure and recreational activities around the Scottish and English coast, respectively (MMO, 2021a; NMPi, 2015) including sea and shoreline angling, recreational boating clubs and areas, windsurfing, and scuba diving.

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).

15.5.1.1 Recreational Boating

In Scottish waters there is one registered marina in proximity of the Marine Installation Corridor, known as Peterhead Marina. The Marina is located within Peterhead Bay approximately 1 km north of the Scottish landfall (Scottish Government, 2021). Peterhead Sailing Club and four training centres are located within Peterhead Marina.

AIS data can be used to provide an insight into the average vessel density in the area surrounding the Marine Installation Corridor, visually represented as a density grid. It must be noted, however, as described in Chapter 13: Shipping and Navigation, AIS is not compulsory for recreational vessels and therefore tends to be underrepresented. The RYA Coastal Atlas (RYA, 2019) indicates that the area within 1 km off Peterhead's coastline has a high concentration in recreational boating activity.

In English waters, Bridlington has a marina and two sailing clubs, known as Yorkshire & Humberside Youth Sailing Association and the Royal Yorkshire Yacht Club. In addition, the Marine Installation Corridor crosses into a General Boating Area between KP420 and the English landfall at KP436. These areas are used extensively for general day-sailing by all types of recreational craft and for racing and training (RYA, 2019). In England, the AIS data shows some traffic in the proximity of the Marine Installation Corridor approaching land, but of moderately low density when approaching the English landfall location. Overall, boating activity considerably reduces in the study area as the distance offshore increases (RYA, 2019).

Tour boat operators are also active in proximity to the English landfall and include: the 'Pirate Ships Bridlington' company which operates out of Bridlington all year round (weather dependent), the Yorkshire Belle, and the Yorkshire Rose Fishing Trips.

Recreational boating receptors within the study area are presented in Chapter 13: Shipping and Navigation.

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 sea conditions, local behaviour of target species, and tourism patterns. The MMO found

that in terms of overall number of trips, there was a maximum in summer and a minimum in winter (summer, 61%; winter, 39%) (MMO, 2020).

Between 2016 and 2019, the estimated number of annual sea angler days spent in Scotland was between 42,000 and 88,000 days per annum (Cefas, 2021). There is a high density of recreational fishing along the coast, extending approximately 15.2 km from Boddam (approximately 1.3 km south of the Scottish landfall at KP0) to Rattray Head Lighthouse (approximately 14.2 km north of the Scottish landfall at KP0) (LUC, 2016). There are two local angling clubs: the Ugie Angling Association, which operates mostly inland along the River Ugie; and the Peterhead and District Angling Club, a club newly formed in 2020. Whilst sea angling from a private or chartered boat is less common than shore fishing, fishing boat operator, Misty Angling Trips, operates out of Boddam Harbour (Peterhead) during summer months. Peterhead Pier is considered to offer good general sea fishing, especially for cod *Gadus morhua*, with dab *Limanda limanda*, coalfish *Pollachius virens*, and wrasse *Labridae spp.* (British Sea Fishing, n.d.).

In English waters, sea angling activities along the Marine Installation Corridor are anticipated to be of low to medium intensity and high intensity approximately 70 km before reaching the English landfall at Fraisthorpe Sands (i.e., between KP366 and the landfall at KP0) (MPC, 2014). Fishing and tour boat operators such as Yorkshire Rose Fishing Trips and the Yorkshire Belle operate out of Bridlington and Scarborough, and it is understood that they run all year round. Flamborough Head and Bridlington are popular areas for fishing from the shore, with some anglers fishing directly off the cliffs, whilst Bridlington Harbour and wall is known for cod and whiting *Merlangius merlangus* in winter, plus flatfish and coalfish species, and occasional dogfish *Squalus acanthias* and mackerel *Scomber scombrus* in the summer (British Sea Fishing, n.d.). No angling clubs operating out of Bridlington have been identified.

Sea angling receptors within the study area are presented in Figure 15-2.

15.5.1.3 Other Recreational Activities

Other recreational activities in the marine environment may take place sporadically along the east coast; in the most part, recreational activity is primarily expected to be a feature of the coastal area and within Scottish and English territorial waters.

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 15-2):

- **Scuba diving:** There are several scuba diving sites in proximity of the Scottish landfall and along the Marine Installation Corridor in Scottish waters, including Boddam, located approximately 1.5 km south of the landfall, plus Boddam Lighthouse (2 km south) and Almanethy Creek (3 km north) (PADI, 2021; Finstrokes, 2021). There is no ‘limit’ to the seaward extent of scuba diving however generally, dive sites are typically no more than 10 km to 15 km from the shore (i.e., day-trip diving). On the east coast of Scotland and England, the conditions of the North Sea mean that there is generally a tendency for inshore diving or diving within and around sheltered inshore features. This is also driven by the fact that these are typically the locations where more reef, flora, fauna and wreck features can be found. This is reflected in available data which shows that scuba diving intensity is defined as low along the majority of the Marine Installation Corridor (HM Govenment, 2021; LUC, 2016). Some diving sites near the Scottish landfall, such as those described previously, have medium intensity activity recorded.
- **Surfing, surf kayaking, and paddleboarding:** A study commissioned by the Scottish Government in 2015 indicates that there is intense surfing, surf kayaking, or paddleboarding along the coast near Peterhead (NMPi, 2015). The website Surf Forecast states that, as a sheltered beach and containing a reef break, Sandford Bay has fairly consistent waves and is a reliable spot for surfers (2021). Whilst summer months are more popular with surfers, visitors are likely to come all year round, with approximately 40% of surfing in the UK occurring during the summer (Surfers Against Sewage, 2013).

- **Windsurfing and kite surfing:** The 2015 study by the Scottish Government (NMPi, 2015) indicates that windsurfing and kite surfing is less popular on the eastern coastline when compared to the west coast of Scotland, although the area around the Scottish landfall is one of the more popular east coast locations. The Windsurf & SUP Club operate in Peterhead Marina and it is understood they use Sandford Bay (The Windsurf & SUP Club, 2021).
- **Canoeing and kayaking**: The coastline between Peterhead and Cruden Bay, located approximately 10 km south of the Scottish landfall, is noted to be popular with sea kayakers (East Grampian Coastal Partnership, 2020), though a separate source stated that canoeing and kayaking in the sea is less popular in the area in comparison to surfing (NMPi, 2015). Peterhead Canoe Club operates out of Peterhead.
- **Bathing Waters**: Sandford Bay is not classified as an area designated for bathing under the EU Bathing Waters Directive (2006/7/EC); the closest site is the Peterhead Lido, located near the Peterhead Marina, approximately 1.3 km north of KP1. According to the Scottish Government (NMPi, 2015), minimal long-distance swimming occurs in the sea in proximity to Peterhead.

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

- **Scuba diving**: Bridlington Bay is popular with divers, containing a number of dive and wreck sites (Scarborough Maritime Heritage Centre, n.d.). Dive sites including North Landing and Thorwick Bay are located on the northern side of Flamborough Head, whilst Selwicks Bay is located on the eastern shore of Flamborough Head, approximately 5.5 km north-west of KP424 (PADI, 2021; Finstrokes, 2021). Fraisthorpe Sands itself, the site of the English landfall, has much lower amount of scuba diving than Bridglington to the north (MMO, Explore Marine Plans, 2021a).
- **Surfing and paddleboarding**: Surfing is not identified at the landfall. The closest surfing areas are in Filey and Hornsea, over 10 km north and south from the landfall, respectively (Magic Seaweed, 2021). Paddleboarding is popular at Fraisthorpe Sands during the summer months, where the water is flatter (East Riding of Yorkshire Council, 2021).
- **Windsurfing and kitesurfing**: Fraisthorpe Sands is a designated Power Kiting Zone and popular with kite and windsurfers as the water is shallow a long way out (East Riding of Yorkshire Council, 2021). Also, this location receives more wind than many other sites along the same stretch of coast because the sand dunes are lower (KitesurfingUK, 2016).
- **Canoeing and kayaking**: Flamborough Head is popular with experienced sea kayakers, and also along the coast between Filey and Spurn Point (British Canoeing, 2021), within which the English landfall is located.
- **Bathing waters**: Fraisthrope Sands is an area designated for bathing under the EU Bathing Waters Directive (2006/7/EC) and is popular with tourists during the summer months. In 2016, it received a ‘good’ compliance rating (Environment Agency, 2021).

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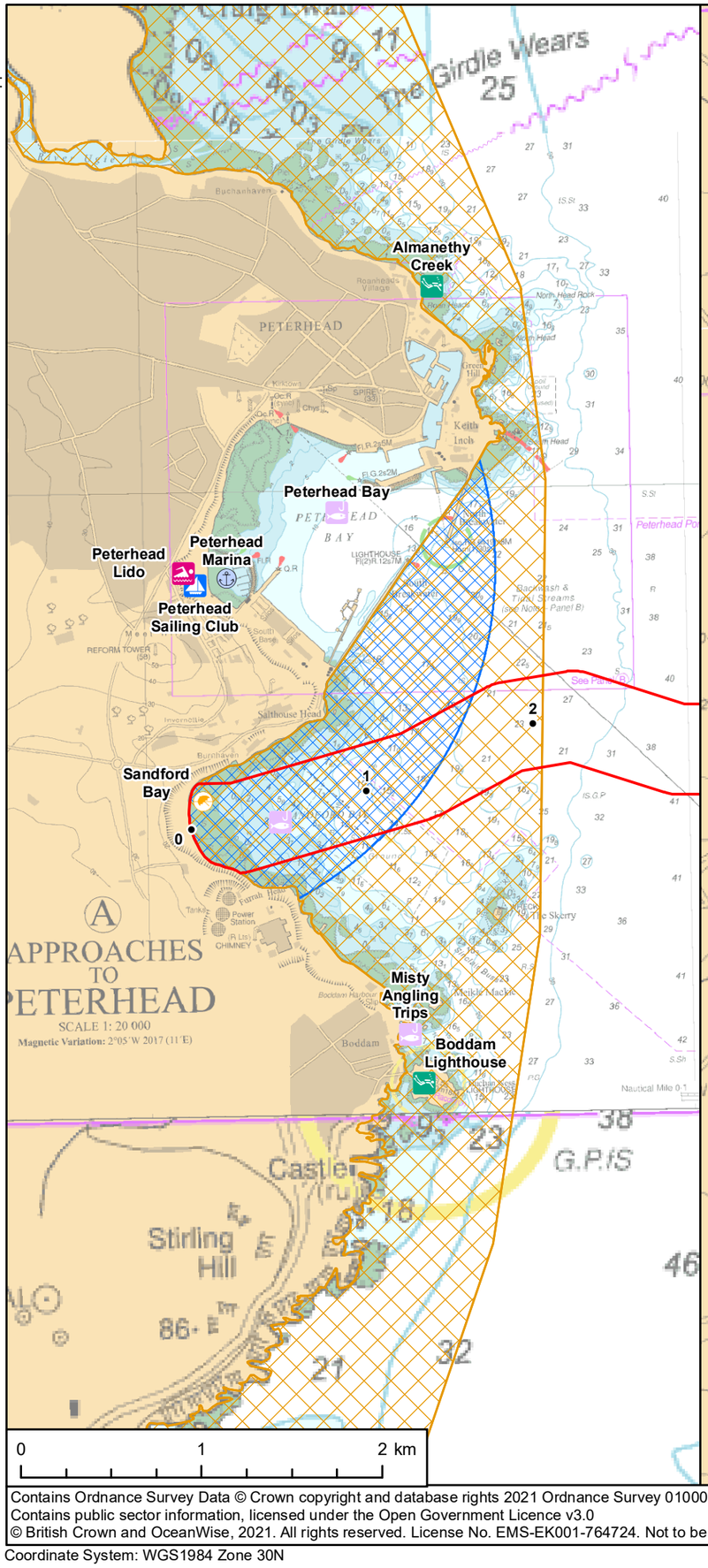

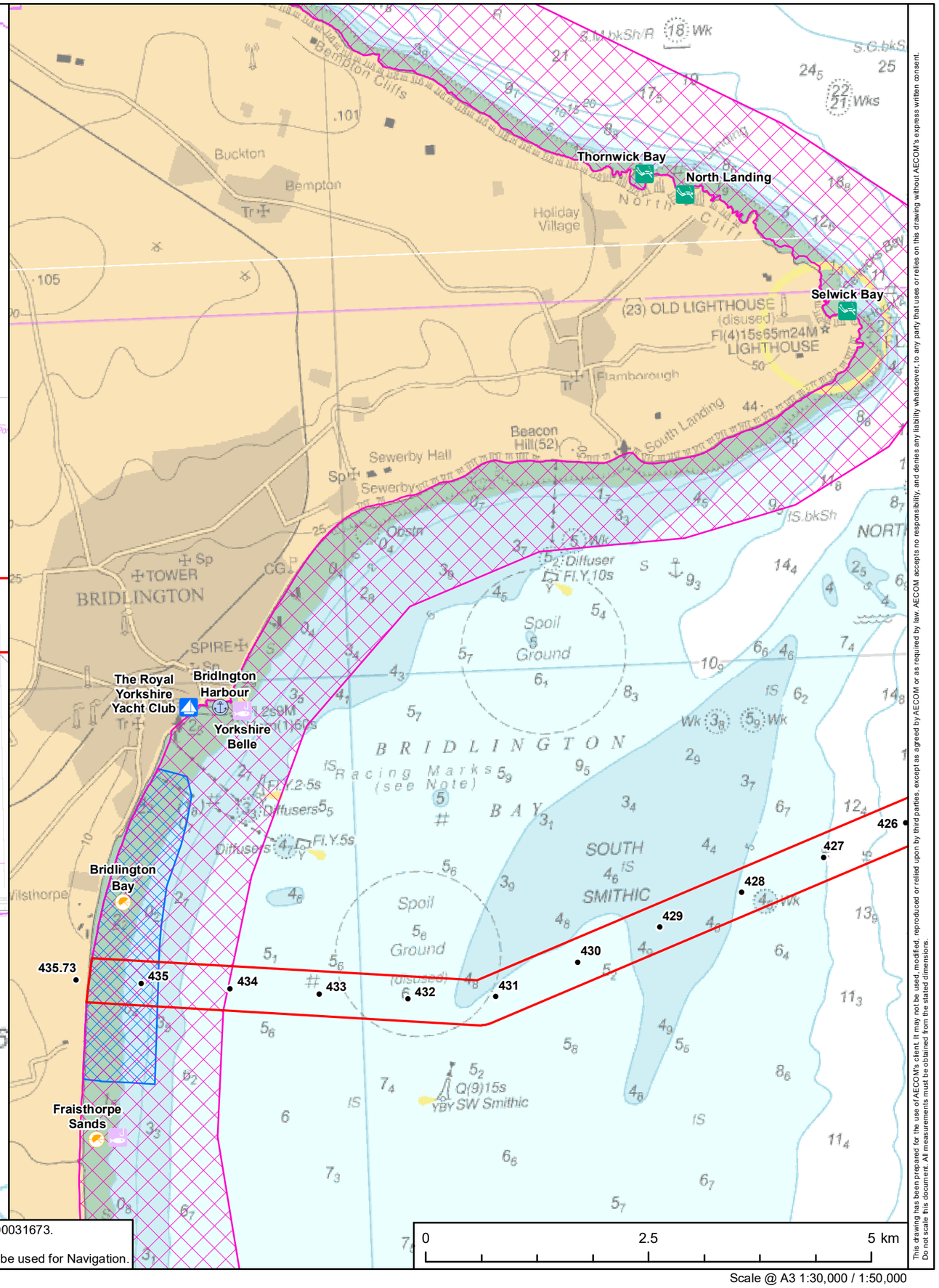

Coordinate System: WGS1984 Zone 30N

Scale @ A3 1:30,000 / 1:50,000

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PROJECT
Eastern Green Link 2

KEY
- Marine Installation Corridor
- Kilometre Point (KP)
- Sea Angling
- Beach
- Dive Site
- Harbour / Marina
- Sailing Site
- Swimming Zone
- Power Kiting Zone
- Canoeing and Kayaking
- Surfing and Windsurfing

TITLE
Figure 15-2
Marine Recreational Users in the Study Area (Landfall)

REFERENCE
SEGL2_M_EAR_15-2_v4_20220624

SHEET NUMBER
1 of 1

DATE
24/06/2022

15.5.2 Other Sea Users and Offshore Infrastructure

In addition to marine tourism and recreation sea users, the following potential other users of the sea have been reviewed within the study area in both Scottish and English Waters.

15.5.2.1 Oil and Gas Operations

No installations or active infrastructure were identified; however, a number of decommissioned exploration or production wells have been identified in the proximity of the study area (NST Authority, 2022) (Figure 15-3).

There are no licensed blocks within the Marine Installation Corridor in Scottish waters. Within English waters, between KP259 and KP340, the Marine Installation Corridor crosses six licensed oil and gas blocks, namely Blocks 35/23, 35/28, 41/3, 41/4, 41/9, and 41/10a (Table 15-2 and Figure 15-3); however, there are no current development consents within these blocks (NST Authority, 2022).

Table 15-2: Oil and Gas Blocks Crossed by the Marine Installation Corridor.

Block	Admin Organisation	License Start Date	License Status	Crossing with Marine Installation Corridor
Scotland				
None identified				
England				
35/23	SHELL U.K. LIMITED (00140141)	December 2020	Extant	KP260 – KP279
35/28	SPIRIT ENERGY NORTH SEA LIMITED (04594558)	May 2017	Extant	KP279 – KP299
41/3	SHELL U.K. LIMITED (00140141)	May 2017	Extant	KP299 – KP305
41/4	SIMWELL RESOURCES LIMITED (07905535)	May 2017	Extant	KP305 – KP322
41/9	SIMWELL RESOURCES LIMITED (07905535)	May 2017	Extant	KP322 – KP328
41/10a	SHELL U.K. LIMITED (00140141)	December 2014	Extant	KP328 – KP340

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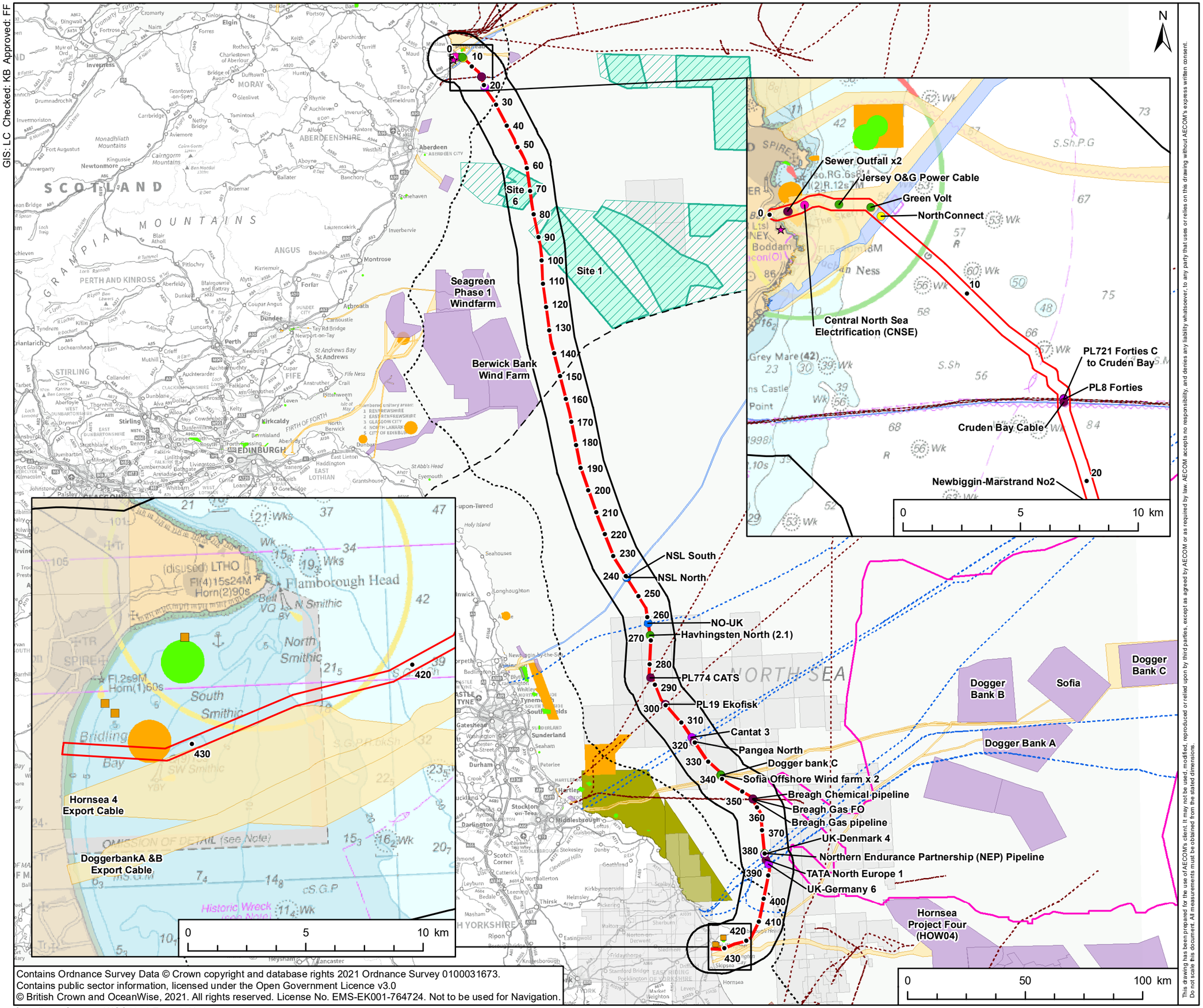

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Scale @ A3 1:1,500,000 / 1:150,000

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PROJECT
Eastern Green Link 2

KEY

- Marine Installation Corridor
- 10km Study Area
- Kilometre Point (KP)
- UK Territorial Sea Limit
- Scottish/English Water Border
- Peterhead Power Station

Crossing Point

- Concept
- Planned
- On Hold
- Installed
- OOS
- In Service
- Cable
- Pipeline
- Diffuser
- Oil and Gas Licensed Block
- Offshore Wind Site Agreement
- Offshore Wind Cable Agreements
- Cable Agreement
- Pipeline Agreement
- ScotWind Leasing Area
- ScotWind Offer
- Offshore Wind Leasing Round 4 Bidding Areas
- Offshore Minerals Aggregates, Evaprites and Mining Site Agreement

Dredge Spoil Disposal Site

- Open
- Closed

TITLE
Figure 15-3
Offshore Infrastructure in the Study Area

REFERENCE
SEGL2_M_EAR_15-3_v5_20220628

SHEET NUMBER
1 of 1

DATE
28/06/2022

15.5.2.2 Offshore Wind Farms

There are no operational wind farm sites within the study area, with the closest being the Seagreen 1 array site (located 18.8 km west of KP119) and the proposed Berwick Bank offshore wind farm (located 11.5 km west of KP160). The Marine Installation Corridor intersects two proposed ScotWind Offshore Leasing Areas, which recently have had lead applicants selected: Proposed Site 6 lies between KP63 and KP74, and Proposed Site 1 lies between KP84 to KP91 (Scottish Government, 2019). These sites offer development scenarios of up to 1 Gigawatt (GW) and 3 GW of generating capacity, respectively, and both option agreements are for fixed wind farm technology. Timescales for these projects are unknown as they are in the pre-planning stages of development, and it is therefore assumed they will be under construction after the Marine Scheme is operational.

In England, there are two Offshore Wind High Potential Future Development Areas that are located in proximity to the Marine Installation Corridor; the Durham Coast (KP410 to KP416) and Yorkshire Coast (KP416 to KP435), although these were not progressed as part of the Round 4 leasing by The Crown Estate (TCE, Offshore Wind Leasing Round 4, 2019).The Marine Installation Corridor is located 9.2 km west of the Dogger Bank Bidding Area (at KP356), part of the Offshore Wind Leasing Round 4 (TCE, Offshore Wind Leasing Round 4, 2019), though the preferred project sites from the leasing round are not located within the study area.

A number of export cables for existing and proposed wind farms located outside of the study area are crossed by the Marine Installation Corridor, including:

- Dogger Bank C and Sofia Offshore Wind Farm export cables cross the Marine Scheme between KP338.1 and KP338.5;
- Dogger Bank A and B export cables lie in proximity to the Marine Installation Corridor between KP417 and KP422; and
- Hornsea Four export cable search area lie in proximity to the Marine Installation Corridor between KP424 and KP432.

These are referenced in Section 15.5.2.3. Pipeline and Cable Crossings.

15.5.2.3 Pipeline and Cable Crossings

Several pipeline and cables, which provide a variety of services, including but not limited to wind farm export cables, fibre optic cables, and gas and oil pipelines, cross the Marine Installation Corridor; these are listed in Table 15-3 and shown in Figure 15-3.

The Buchan Deep Demo (Hywind floating offshore wind project) export cable is located approximately 2.7 km north of the Marine Installation Corridor at KP2.

Table 15-3: Pipelines and Cables Crossed by the Marine Installation Corridor.

Name	Developer/ Operator	Status	Type	Approximate KP of the Marine Installation Corridor
Scotland				
Outfall (x2 pipelines)	Peterhead Power Station	In Service	Outfall	KP0.8
Central North Sea Electrification	BP – Harbour – Shell – Total Energies	Concept	Power	KP0 to KP5
Jersey Oil and Gas proposed cable	Jersey Oil and Gas	Planned	Power	KP3.1
Green Volt	Floatation Energy PLC and CNOOC Petroleum Europe Ltd	Planned	Power	KP4.5

Name	Developer/ Operator	Status	Type	Approximate KP of the Marine Installation Corridor
NorthConnect	NorthConnect	Consented (on hold)	Power	KP5.1
PL721 Forties C to Cruden Bay	Ineos	In Service	Pipeline	KP16.3
PL8 Forties	Ineos	Out of Service – anticipated to be used again	Pipeline	KP16.4
Cruden Bay Cable	Tampnett	In Service	Fibre Optic	KP16.5
England				
Newbiggen – Marstrad No2	Great North Tel Co.	Out of Service	Fibre Optic	KP211.8
North Sea Link (NSL) North	National Grid	Installed	Power	KP240.8
NSL South	National Grid	Installed	Power	KP240.8
NO-UK	Altibox Carrier	Installed	Fibre Optic	KP262.6
Havhingsten North (2.1)	Alcatel Submarine Networks (ASN)	Planned	Fibre Optic	KP267.8
PL774 CATS	Kellas Midstream (owner); Wood Group (operator)	In Service	Gas Pipeline	KP286.4
PL19 Ekofisk	Norpipe Oil AS (owner); ConocoPhillips Skandinavia AS (operator)	In Service	Oil Pipeline	KP299.6
Cantat 3	Faroese Telecom	Out of Service	Fibre Optic	KP317.6
Pangea North	ASN	In Service	Fibre Optic	KP319.6
Sofia Offshore Wind Farm x2	RWE and Innogy	Pre-construction (due to be operational by 2026)	Wind Farm Export Cable	KP338.1
Dogger Bank C	Dogger Bank (SSE & Equinor)	Planned (to be operational in 2026)	Power	KP338.5
Breagh MEG	Ineos	In Service	MEG Pipeline	KP355.8
Breagh Gas FO	Ineos	In Service	Fibre Optic	KP356.1
Breagh Gas Pipeline	Ineos	In Service	Pipeline	KP356.1
Northern Endurance Partnership (NEP)	BP (consortium)	Planned (due to be operational in mid-2020's)	Carbon Capture, Utilisation and Storage	KP380.0
UK-Denmark 4	BT	Out of Service	Fibre Optic	KP380.3
TATA North Europe 1	TATA Communications	In Service	Fibre Optic	KP382.9
UK-Germany 6	BT	Out of Service	Fibre Optic	KP385.1
Dogger Bank A and B	Equinor ASA, SSE Renewables, Eni Gas & Power SpA	Under construction (due to be	Power	In proximity to KP417 to KP422

Name	Developer/ Operator	Status	Type	Approximate KP of the Marine Installation Corridor
		operational in 2023/ 2024)		
Hornsea Four	Orsted	Planned (construction between 2024-2029)	Power	In proximity to KP424 to KP432
Atlantic Super Connector	ASC	Concept	Power	Not yet available
Continental Link	NGV	Concept	Power	Not yet available

* Development highlighted in dark 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. Those highlighted in light grey are anticipated to be constructed after the Marine Scheme is operational in 2029. These developments are also considered in further detail in Chapter 16: Cumulative and In-combination Effects.

Two diffusers are known to be located approximately 1.4 km and 1.7 km to the north of the Marine Installation Corridor in the vicinity of the English landfall (Figure 15-3). The most northern diffuser is located beyond the Zone of Influence for suspended sediment concentrations of 1.5 km to be observed (see Chapter 7: Physical Environment) and therefore is not considered further.

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.

No dredged navigational channels occur within the study area.

Dredge spoil deposit sites, shown in Table 15-4, have been identified in proximity to the Marine Installation Corridor in Scottish waters (Scottish Government, 2021). In English Waters, two licensed disposal sites have been identified in the proximity of the landfall at Fraisthorpe Sands (MMO, 2021a) (Figure 15-3 and Table 15-4).

Table 15-4: Dredge Spoil Deposit Sites within the Study Area.

Name	Status	Proximity to Marine Installation Corridor	Approximate KP of the Marine Installation Corridor
Scotland			
Peterhead Harbour	Open	1.6 km north	KP 1
South Buchan Ness B	Closed	Intersects	KP 1
South Buchan Ness	Closed	500 m north	KP 1
Middle Buchan Ness B	Closed	1.8 km north	KP 2
North Buchan Ness	Open	3 km north	KP 4
Middle Buchan Ness	Closed	3.5 km north	KP 4
England			
Bridlington Bay A	Open	2.2 km north	KP 429
Bridlington Bay B	Closed	Intersects	KP 431 to 433

Name	Status	Proximity to Marine Installation Corridor	Approximate KP of the Marine Installation Corridor
** Sites highlighted in grey are no longer in operation.*			

15.5.2.5 Military Practice and Exercise Areas

Over 80% of the Marine Installation Corridor intersects military practice and exercise areas (PEXAs). These are described in Table 15-5, and presented in Chapter 13: Shipping and Navigation (UKHO, 2021).

Table 15-5: Military Practice and Exercise Areas within the Study Area.

Name	Type	Proximity to Marine Installation Corridor	Approximate KP of the Marine Installation Corridor
Scotland			
D613A	Areas of Intense Aerial Activities (AIAA)	Intersects	KP29 to KP81
D613B		Intersects	KP81 to KP89
D613C		Intersects	KP89 to KP139
D613D		Intersects	KP138 to KP150 (Scotland) KP150 to KP155 (England)
England			
D513: DRURIDGE BAY	Surface danger area, firing danger area	Intersects	KP198 to KP289
D513B: DRURIDGE BAY		Intersects	KP210 to KP260, and KP279 to KP289
D513A: DRURIDGE BAY		Intersects	KP259 to KP279
D323A	AIAA	Intersects	KP289 to KP353
D412: STAXTON	Surface danger area, firing danger area	0.8 km east	Parallel to Marine Installation Corridor from KP304 to KP332
D323B	AIAA	Intersects	KP352 to KP418
D323F		Intersects	KP418 to KP433

15.5.2.6 Other Developments

Other developments identified within the proximity of the Marine Installation Corridor include the Peterhead Power Station, a gas fired plant supported by sweater abstraction for cooling. It is located less than 1 km south of the Scottish landfall at Peterhead (SSE, 2021; Scottish Government, 2015), as shown in Figure 15-3. The proximity to Scottish Hydro Electric (SHE) Transmission's existing infrastructure associated with the power station was a key consideration in the selection of the landfall location

15.6 Appraisal of Potential Impacts

This section presents the potential impacts upon other sea users during Installation, Operation and Maintenance, 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

Mitigation that has been implemented into the design of the Marine Scheme has been presented in Chapter 2: Project Description. Any that are specific to other sea users and this impact appraisal are presented in Table 15-6.

During consultation, Peterhead Port Authority confirmed that a works licence would not be required for the works within their statutory harbour limits. Further information on this can be found in Chapter 6: Consultation and Stakeholder Engagement.

Table 15-6. Other Sea Users Embedded Mitigation

Measure	Description
Cable route siting and routing	As identified within Chapter 5: Alternatives and Design Evolution, the Marine Installation Corridor has been positioned to minimise interaction with a range of receptors, including marine recreational activities and third-party infrastructure development and operators, as far as possible.
Landfall installation	HDD will be used at both landfalls to install the cables in the transition zone the Onshore Schemes and the Marine Scheme, which avoids any works in the intertidal environment. This will limit any potential impacts to both the environmental and social receptors in these areas.
Marine Scheme vessel requirements	A temporary 500 m Recommended Clearance Zone will be established around all vessels associated with the works to prevent interactions with other vessels. Where possible, vessels will operate with dynamic positioning which will minimise anchor disturbance on the seabed;
Safety legislation and equipment to be adhered to by all vessels associated with the Marine Scheme	All vessels associated with installation and any required maintenance will comply with the Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) and the International Convention for the Safety of Life at Sea 1974 (SOLAS).
	All applicable vessels will broadcast their status on Automatic Identification System (AIS) at all times. Guard vessels will use RADAR with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions. Further required features are described in Table 2-15: Summary of Embedded Mitigation in Chapter 2: Project Description.
Notifications	Notifications of the Marine Scheme will be made; this shall include: • Notice(s) to Mariners (including Kingfisher Bulletins); • The Ministry of Defence (MoD) will be notified prior to commencement of Installation Phase activities within Military Practice and Exercise Areas; • Appropriate notification will be provided to advise beachgoers and those using the area for recreation in the close vicinity of each landfall; • Regular consultation will be made with third-party infrastructure asset owners to notify them of any activities associated with the Marine Scheme and avoid spatial and temporal interactions between vessels.
Construction Environmental Management Plan (CEMP)	Prior to cable installation activities commencing, a CEMP, including an Emergency Spill Response Plan (ESRP) and Waste Management Plan will be developed and agreed with relevant stakeholders in accordance with the coastal and marine environment site guide.
Third-party infrastructure 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 third-party infrastructure 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; and Proximity agreements describe the approach to works close to, but not crossing third party assets, to ensure safety and manage interactions between the two projects.

15.6.2 Installation Phase

15.6.2.1 Disruption to marine recreational activities

As described in Section 15.6.1, HDD will be used to install the submarine cables through the intertidal zone (between MHWS and MLWS), avoiding any direct interactions with the seabed in comparison to alternate techniques (such as open cut trenching). The boreholes will be drilled from a temporary onshore drilling compound (within the scope of the Onshore Project Schemes) to an exit pit within the subtidal zone within which the borehole will breakout. During cable installation, a temporary 500m Recommended Clearance Zone will be established around cable installation vessel(s), some of which will operate in shallow waters (i.e., within a depth of 10 m chart datum (CD)). The temporary 500 m Recommended Clearance Zone will extend from any required anchoring system, potentially placed on the seabed up to 800 m from the installation vessels within the Marine Installation Corridor, resulting in the Recommended Clearance Zone extending up to 1.3 km from the vessel itself.

In water deeper than 10 m below chart datum (CD), anchoring is not expected to be required (vessels will maintain position using a Dynamic Positioning (DP) system) and the temporary 500 m Recommended Clearance Zone will extend 500 m from the installation vessels.

Installation at each landfall is anticipated to take approximately six months, with installation expected to be timed to avoid poor weather over winter. The installation of cables has the potential to disrupt marine recreational users in the Marine Installation Corridor.

Recreational Boating

Recreational vessels that travel through the Marine Installation Corridor are likely to be routing to or from Peterhead Marina in Scottish waters and from Bridlington Marina in English waters. 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 at both landfalls.

There is risk of project vessels colliding with recreational vessels, with potential to cause physical harm to people and financial loss. This is considered further in Chapter 13: Shipping and Navigation. There is also potential for boaters to lose access to certain areas they would normally travel through for recreational purposes during installation of the Marine Scheme. Notice(s) to Mariners will be issued to harbours and will include information on timings and location of installation activities prior to commencement of works. Recreational vessel access to Peterhead Bay, associated marina and boat clubs will be maintained through agreements and ongoing engagement between the Project and Peterhead Port Authority. The magnitude has been assessed as low as the installation works in the nearshore areas will be short term (<1 year). The sensitivity of the sailing clubs at the proposed landfalls has been assessed as negligible as although the installation works may be disrupt activities for users at both landfalls for the short term, sailors will be able to use other areas in close proximity. The effect upon marine recreational users has been assessed as **negligible**, which is considered to be **not significant**.

Recreational Fishing

Sea fishing boat operators operate from both landfalls all year round and are likely to travel through the Marine Installation Corridor and the temporary 500 m Recommended Clearance Zone around installation vessels, potentially temporarily disrupting their existing operations. 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. However, as per recreational vessel users, operators will be able to use alternate routes and areas. The magnitude has been assessed as low as the installation works in the nearshore areas will be short term (<1 year).

Angling clubs and sea fishing boat operators will be sent Notice(s) to Mariners via the local harbours. The sensitivity of recreational fishers has been assessed as low as the installation works may be considered to prove an inconvenience for offshore tour and sea fishing boat operators at both landfalls but will be able to use other areas in close proximity. Shore-based anglers will not be affected by the installation works as beaches will remain open, and therefore the sensitivity of the receptor group is considered to be negligible. The effect upon offshore tour and sea fishing boat operators and shore-based anglers has been assessed as **negligible** and is considered to be **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 therefore will not be affected. However, some recreational activities utilising small boats to access shallow waters shoreward of the installation activities have the potential to be negatively affected, such as dingy sailing, scuba diving, and kayaking. 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 temporary 500 m Recommended Clearance Zone when cable installation works are ongoing.

A greater impact is predicted at the Scottish landfall in comparison to the English landfall, as Sandford Bay is a relatively small beach, and access to the waters of the Bay may be restricted in its entirety for some activities. The English landfall at Fraisthorpe Sands is part of a more extensive series of beaches along the adjacent coast, and displaced users will experience less disruption, with adjacent areas available for use.

Appropriate notification will be put in place to advise beachgoers and those using areas for recreation. The magnitude of change has been assessed as low as the nearshore installation works will be short term (<1 year) but the potential loss of access may result in displacement of some recreational activities. The sensitivity at the Scottish landfall is considered to be low as Sandford Bay is small and access may be lost temporarily, causing disruption for users. The sensitivity at the English landfall is considered to be negligible as Fraisthorpe Sands and surrounding areas are larger and more tolerant to short term change. For both landfalls, the effect is assessed as **negligible** and is therefore considered to be **not significant**.

15.6.2.2 Disruption to Other Sea Users and Offshore Infrastructure

The risk of collision of a third-party vessel with a vessel associated with the cable installation is discussed in Chapter 13: Shipping and Navigation. To maintain a safe distance between vessels associated with installation and other vessels, a temporary 500 m Recommended Clearance Zone will be applied, and guard vessels set up to monitor approaching vessels. The temporary 500 m Recommended Clearance Zone has the potential to overlap with operations of other users of the sea, resulting in disruption to planned activities and access to working areas.

Oil and Gas Operations

Six licensed oil and gas blocks were identified, all of which are extant; as they are not currently operation, there are considered to be of low sensitivity. If operations of the Marine Scheme were to coincide with oil and gas operations, impacts would include temporary disruption to vessels transiting to sites. Therefore, the magnitude of the impact is assessed as low and the effect as **negligible**, which is considered to be **not significant**.

Dredging and Disposal Sites

Three open dredging and disposal sites were identified within the study area, of which, the closest is 1.6 km north of the Marine Installation Corridor at Bridlington. The dredging and disposal site users are considered to have high tolerance for change and are therefore considered to have low sensitivity. If operations of the Marine Scheme were to coincide with dredging and disposal activities, impacts could include temporary restrictions to dredging and disposal vessels as they manoeuvre to and from the disposal site. Therefore, the magnitude of the impact is assessed as low on this low sensitivity receptor, therefore the effect is assessed as **negligible**, which is considered to be **not significant**.

Simultaneous Operations with Offshore Wind Farms, Pipelines and Cables

This section relates to the interactions between Installation Phase vessels during simultaneous operations with other vessels working on existing assets, or those under installation, for assets associated with offshore wind farms, pipelines and cables.

Whilst the Marine Installation Corridor crosses two ScotWind lease areas, these projects are still in their early states, and there are no proposed timelines set out for the developments and therefore it is assumed that the construction periods for the projects will not coincide with that of the Marine Scheme. However, several existing and proposed assets cross the Marine Installation Corridor, as detailed in

Table 15-3. Furthermore, a number of assets are in proximity to the Marine Installation Corridor, such as Hornsea 4 and Dogger Bank A and B export cable routes.

The proposed route for Hornsea Four's export cable lies in close proximity to the Marine Installation Corridor and the potential for simultaneous operations (SIMOPS) has been recognised by both NGET and Orsted. Proximity agreements will be required in order to manage risks including a necessary mitigation and controls including the application of exclusion zones. Given the potential for SIMOPS, ongoing collaboration will be informed by appropriate industry guidance, such as the International Marine Contractors Association (IMCA) guidance on SIMOPS (IMCA M203, Version II 2021).

Should the potential for Installation Phase vessels associated with the Marine Scheme coincide with other vessels working on existing assets, or those under installation, for assets associated with offshore wind farms, pipelines and cables be identified, a proximity agreement would be agreed with the asset owner to ensure that SIMOPS could be undertaken to manage risks between vessels and activities. The sensitivity of the receptor and magnitude of the impact are both assessed as low and the significance of the effect as **negligible** and therefore considered to be **not significant**.

Effects associated with damage to third-party infrastructure are presented in Section 15.6.2.3.

Interactions with Diffusers

One diffuser was identified within the 1.5 km zone of influence for increases in suspended sediment concentrations (see Chapter 7: Physical Environment). The diffuser is considered to be of low sensitivity. Increases in suspended sediment concentration could result in sediment building up around the diffuser and its operation being affected, however, Installation Phase activities which could generate increased suspended sediment concentrations would be transient in nature and the any seabed sediments held in suspension are expected to disperse rapidly due to natural hydrodynamic processes within the open coastal environment where the diffuser is located. Therefore, the magnitude of the impact is assessed as low and the effect as **negligible**, which is considered to be **not significant**.

Military Practice and Exercise Areas

Over 80% of the Marine Installation Corridor intersects with Military Practice Areas. The temporary 500 m Recommended Clearance Zone around installation vessels has the potential to disrupt planned MOD activities within military practice and exercise areas. Consultation will take place with the MOD and they will be notified prior to any installation activities being undertaken in the Military Practice and Exercise Areas. Given that the advisory 500 m safety zone around the installation vessels will move at the rate of the associated vessels, any disruption will be localised and short term, and therefore the magnitude has been assessed as low. Embedded mitigation measures will be sufficient to avoid potential impacts, allowing exercises to be programmed accordingly. The sensitivity of the receptor is considered to be low as the installation may disrupt activities temporarily, but the tolerance for change is high. The effect has been assessed as **negligible** and is therefore considered to be **not significant**.

15.6.2.3 Damage to or interference with a third-party asset

Crossing infrastructure will be required where the Marine Installation Corridor crosses existing infrastructure or those which are planned where the Installation Phase will coincide with that of the Marine Scheme. As described in Chapter 2: Project Description, the Applicants anticipates that all crossings of existing infrastructure will be constructed in strict accordance with the terms of the Crossing Agreements put in place prior to Installation Phase activities of the Marine Scheme commencing. Furthermore, proximity agreements would also be agreed with asset owners to manage risks, such as agreements on trenching exclusion zones and preventing large subsea equipment, such as trenchers and ploughs, operating close to assets. These would therefore making damage or interference to these assets highly unlikely.

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. Cables and pipelines are therefore considered to be of high sensitivity. The magnitude of any impact of unanticipated damage to existing submarine cables and pipelines at crossing locations has been assessed as low as it is site-specific and short term. The effect has been assessed as moderate, which is considered to be significant. However, the risk of this this occurring is considered unlikely with the appropriate controls in place, and embedded mitigation measures are in place to reduce risk to

third-party assets as much as reasonably practical. Therefore, the significance of the unplanned event is **minor** and therefore **not significant**.

15.6.3 Operation and Maintenance Phase

The potential effects of the presence of the trenched cables and external protection on the seabed on recreational vessels is considered in Chapter 13: Shipping and Navigation and therefore is not discussed further within this appraisal.

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 one to two years following completion of the Installation Phase. The results of the initial surveys will be used to determine the frequency of future surveys and identify areas requiring more regular surveys based on the potential natural and anthropogenic threats to the cables.

The cable system is designed to avoid the need for routine maintenance and therefore no planned maintenance activities is anticipated during the lifetime of the Marine Scheme. However, monitoring surveys may identify the need for preventative maintenance to increase the external protection (e.g., in highly localised areas of mobile seabed risking exposure of the cable over time).

In the event that repairs are required, advisory 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 and Maintenance Phase will be of a smaller magnitude when compared to the Installation Phase, and the magnitude has been assessed as low for all potential impacts.

Sensitivity of the receptors will remain the same as during the Installation Phase. For the majority of impacts upon marine commercial users, the effect has been assessed as **negligible** and therefore **not significant**; due the high sensitivity of third-party cables or pipelines, any unplanned damage during maintenance would result in a moderate effect, which is considered to be significant. However, the risk of this occurring is considered unlikely with the appropriate controls in place, including the crossing and proximity agreements, which will be in place to cover the lifetime of the Project Marine Scheme. Therefore, the significance of the unplanned event is **minor**, and considered to be **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 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, impacts from decommissioning activities are expected to be 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 assessed as **negligible** and therefore considered to be **not significant**.

Due the high sensitivity of third-party cables or pipelines, any unplanned damage attributed to cable removal during the Decommissioning Phase would result in a moderate effect, which is considered to be significant. However, the risk of this occurring is considered unlikely with the appropriate controls in place, such as proximity and crossing agreements, which will be in place to cover the lifetime of the Marine Scheme. Therefore, the significance of the unplanned event is **minor**, and considered to be **not significant**.

15.7 Mitigation and Monitoring

It is not considered that any additional mitigation and monitoring measures will be required during Installation, Operation and Maintenance, and Decommissioning Phases as embedded mitigation measure will lessen any risks as low as reasonably practicable.

15.8 Residual Impacts

Given that no significant impacts have been identified for other sea users, no significant residual impacts have been identified as a result of Marine Scheme activities.

15.9 Summary of Appraisal

Table 15-7: Summary of Environmental Appraisal

Project Phase	Potential Impact	Receptor	Sensitivity	Magnitude/ Likelihood	Significance/ Risk	Project Specific Mitigation	Magnitude after Mitigation	Significance of Residual Effect
Installation	Disruption to marine recreational users	Recreational boaters	Negligible	Low	Negligible	None required	Low	Not Significant
		Recreational fishing	Negligible	Low	Negligible		Low	Not Significant
		Other recreational activities	Scottish landfall: low	Low	Negligible		Low	Not Significant
			English landfall: negligible					
	Disruption to other sea users and offshore infrastructure	Oil and gas operations	Low	Low	Negligible	None required	Low	Not Significant
		Dredging and disposal sites	Low	Low	Negligible		Low	Not Significant
		Simultaneous operations with offshore wind farms, pipelines and cables	Low	Low	Negligible		Low	Not Significant
		Interaction with diffusers	Low	Low	Negligible		Low	Not Significant
		Military practice areas	Low	Low	Negligible		Low	Not Significant
	Unplanned event resulting in risk of damage to, or interference with, a third-party asset	Cable and pipeline asset owners	Moderate	Unlikely	Minor Risk	None required	Unlikely	Minor Risk
Operation and maintenance	Disruption to vessel routeing and access to other sea user working areas	Oil and gas operations	Low	Low	Negligible	None required	Low	Not Significant
		Dredging and disposal sites	Low	Low	Negligible		Low	Not Significant

Project Phase	Potential Impact	Receptor	Sensitivity	Magnitude/ Likelihood	Significance/ Risk	Project Specific Mitigation	Magnitude after Mitigation	Significance of Residual Effect
		Simultaneous operations with offshore wind farms, pipelines and cables	Low	Low	Negligible		Low	Not Significant
		Military practice areas	Low	Low	Negligible		Low	Not Significant
	Unplanned event resulting in risk of damage to, or interference with, a third-party cable or pipeline assist	Cable and pipeline asset owners	Moderate	Unlikely	Minor Risk	None required	Unlikely	Minor Risk
Decommissioning	Potential effects of the Decommissioning Phase are considered to be the same as the Installation Phase.							

15.10 References

Aberdeenshire Council. (2017, September). *Peterhead / Buchan Overview*. Retrieved from https://www.ouraberdeenshire.org.uk/wp-content/uploads/2017/09/Peterhead_Buchan-Overview_05092017.pdf

ABP Mer. (2021). *Non-licensable impacts on priority MPAs*. Retrieved from https://www.abpmer.co.uk/blog/abpmer-to-develop-marine-recreation-activity-maps-to-help-decision-making/?utm_source=LinkedIn&utm_medium=Social

British Canoeing. (2021). *Sea Kayaking - Offshore*. Retrieved from https://www.britishcanoeing.org.uk/regions/yorkshire/varieties-of-canoeing-and-kayaking/open-water-and-coastal/sea-kayaking-offshore

British Sea Fishing. (n.d.). *Yorkshire and Humberside*. Retrieved from https://britishseafishing.co.uk/yorkshire-and-humberside/

Cefas. (2021). Participation, effort, and catches of sea anglers resident in the UK in 2018 & 2019. *Hyder, Kieran; Brown, Adam; Armstong, Mike; Bell, Brigid; Hook, Samantha Alison; Kroese, Jo; Radford, Zachary*.

CES. (2020). *Crown Estate Scotland. Enery & Infrastructure Spatial Data., s.l.: Updated on 21 .*

CES. (2020a). *Crown Estate Scotland. Enery & Infrastructure Spatial Data.* Updated on 21 December 2020.

CES. (2022). *Crown Estate Scotland. Enery & Infrastructure Spatial Data.* https://www.crownestatescotland.com/resources/map: Updated on 21 December 2020.

DEFRA. (2014x). *East Inshore and East Offshore Marine Plans, s.l.: Department for Environment, Food.*

DEFRA. (2020). *Three-year Report on the East Inshore and East Offshore Marine Plans For the period.* s.l.: Department for Environment, Food & Rural Affairs. .

East Grampian Coastal Partnership. (2020). *Sea Kayaking*. Retrieved from https://www.egcp.scot/sea-kayaking

East Riding of Yorkshire Council. (2021). *https://www.eastriding.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=99257*.

EEA. (2021). *England Environmental Agency Bathing Water Map*. Retrieved from http://environment.data.gov.uk/bwq/profiles/

Environment Agency. (2021, March). *Bathing Waters Monitoring Locations*. Retrieved from https://data.gov.uk/dataset/dcb8bd46-c4cf-4749-bad0-7663da96845c/bathing-waters-monitoring-locations

ESCA. (2016). *The Proximity of Offshore Renewable Energy Installations & Submarine Cable Infrastructure in UK Waters.* file:///C:/Users/Eliana.Mercyaraujo/Downloads/Guideline-06---Proximity-of-Wind-Farms-Issue-5-March-2016%20(3).pdf: European Subsea Cables Association.

Finstrokes. (2021). *Finstrokes Dive Map*. Retrieved from https://www.finstrokes.com/dive-map

Glasson, J., Durning, B., Olorundami, T., & Welch, K. (2020). *Guidance on assessing the socio-economic impacts of offshore wind farms (OWFs) .* Impact Assessment Unit (IAU), Oxford Brookes University; Vattenfall.

HM Govenment. (2021). *North East Inshore and North East Offshore Marine Plan.* https://www.gov.uk/government/publications/the-north-east-marine-plans-documents. Retrieved from https://www.gov.uk/government/publications/the-north-east-marine-plans-documents

HM Government. (2014). *East Inshore and East Offshore Marine Plans*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312496/east-plan.pdf

HM Government. (2015). *East Inshore and East Offshore Marine Plans.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312496/east-plan.pdf.

HM Government. (2015x). *East Inshore and East Offshore Marine Plans.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312496/east-plan.pdf.

HM Government. (2021). *North East Inshore and North East Offshore Marine Plan*. Retrieved from https://www.gov.uk/government/publications/the-north-east-marine-plans-documents

HM Government. (2021b). North East Inshore and North East Offshore Marine Plan - Technical Annex.

ICPC. (2013). *Recommendation No.13. The Proximity of Offshore Renewable Wind Energy Installations and Submarine Cable Infrastructure in National Waters .*

ICPC. (2014). *Recommendation No.3. Telecommunications Cable and Oil Pipeline / Power Cables Crossing Criteria .*

ICPC. (2015). *Recommendation No.2. Cable Routing and Reporting Criteria.*

KIS-ORCA. (2022). *KIS-ORCA - Offshore Renewables and Cable Awarness - Map*. Retrieved from https://kis-orca.org/map/

KitesurfingUK. (2016). *Kitesurfing - Fraisthorpe Beath*. Retrieved from https://kitesurfinguk.org.uk/uk-kite-beaches/kitesurfing-fraisthorpe/

LUC. (2016). *Scottish Marine Recreation and Tourism Survey 2015.* Marine Scotland.

Magic Seaweed. (2021). *UK + IRELAND SURF REPORTS AND SURF FORECASTS*. Retrieved from https://magicseaweed.com/UK-Ireland-Surf-Forecast/1/

Marine Scotland. (2015). *Scottish Marine Recreation and Tourism Survey 2015*. Retrieved from https://www.clydemarineplan.scot/wp-content/uploads/2016/05/Scottish-Marine-Recreation-and-Tourism-Survey-2015-Final-Report4.pdf

MMO. (2019). *Identification of areas of aquaculture potential in English waters (MMO1184), s.l.: s.n.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/854128/MMO1184_AquaPotential_forPub_191210.pdf.

MMO. (2019ax). *North East Inshore and Offshore Marine Plans Sustainability Appraisal. Part 2: Scoping Information. Draft Report.*

MMO. (2020). *Mapping recreational sea anglers in English waters (MMO1163): Non-technical Summary.*

MMO. (2020a). *Mapping recreational sea anglers in English waters (MMO1163): Non-technical Summary.*

MMO. (2020b). *North East Inshore and North East Offshore Marine Plan. Technical Annex - Draft for consultation.*

MMO. (2021a). *Explore Marine Plans*. Retrieved from Marine Management Organisation: https://explore-marine-plans.marineservices.org.uk/

MMO. (2021a). *Explore Marine Plans*. Retrieved from Marine Management Organisation: https://explore-marine-plans.marineservices.org.uk/

MMO. (2021ax). *Explore Marine Plans*. Retrieved from Marine Management Organisation: https://explore-marine-plans.marineservices.org.uk/

MMO. (2021b). *Evidence Projects Register - Non-licensable impacts on priority MPAs (MMO1243)*. Retrieved from https://www.gov.uk/government/publications/evidence-and-the-marine-management-organisation-mmo/evidence-projects-register

MPC. (2014). *Modelling Marine Recreation Potential in England. MMO1064.*

Net Zero Teeside. (2021). *Net Zero Teeside*. Retrieved from https://www.netzeroteesside.co.uk/

NMPi. (2015). *Scottish Marine Recreation & Tourism Survey 2015 - Spatial maps*. Retrieved from http://marine.gov.scot/information/scottish-marine-recreation-tourism-survey-2015

NMPi. (2021). *Marine Scotland National Marine Planning Interactive (NMPi)*. Retrieved from Marine Scotland: http://marine.gov.scot/maps/nmpi

NMPi. (2021a). *Marine Scotland National Marine Planning Interactive (NMPi)*. Retrieved from Marine Scotland: http://marine.gov.scot/maps/nmpi

NMPi. (2021x). *Marine Scotland National Marine Planning Interactive (NMPi)*. Retrieved from http://marine.gov.scot/maps/nmpi

NST Authority. (2022). *Offshore Interactive Map.* Retrieved from Oil and Gas Authority: https://www.arcgis.com/apps/webappviewer/index.html?id=f4b1ea5802944a55aa4a9df0184205a5

OGA. (2021). *Offshore Oil and Gas Activity Map*. Retrieved from Oil and Gas Authority

PADI. (2021). *Top dive sites in the United Kingdom*. Retrieved from https://www.padi.com/dive-sites/united-kingdom/?ordering=-rating%2C-number_reviews

Pale Blue Dot. (2021). *Acorn CCS & Acorn Hydrogen*. Retrieved from Pale Blue Dot. : https://pale-blu.com/acorn/

Peterhead Development Partnership. (2021). *Peterhead Development Partnership Vision and Action Plan*. Retrieved from https://www.aberdeenshire.gov.uk/media/22873/peterhead-action-plan.pdf

RYA. (2019). *Royal Yacht Association (RYA) UK Coastal Atlas of Recreational Boating*. Retrieved from http://marine.gov.scot/maps/nmpi?title=rya&items_per_page=25

RYA. (2019). *UK Coastal Atlas of Recreational Boating*. Retrieved from Royal Yacht Association (RYA) : http://marine.gov.scot/maps/nmpi?title=rya&items_per_page=25

Scarborough Maritime Heritage Centre. (n.d.). *Yorkshire Coast Shipwreck Map*. Retrieved from http://www.scarboroughsmaritimeheritage.org.uk/article.php?article=476

Scottish Government. (2014). *Scotland's National Marine Plan.*

Scottish Government. (2014). *Scotland's National Marine Plan.*

Scottish Government. (2015). *Scotland's National Marine Plan*. Retrieved from https://www.gov.scot/publications/scotlands-national-marine-plan-9781784128555/

Scottish Government. (2015x). *Scotland's National Marine Plan.*

Scottish Government. (2019, December). *Draft Sectoral Marine Plan for Offshore Wind Energy*. Retrieved from https://www.gov.scot/binaries/content/documents/govscot/publications/consultation-paper/2019/12/draft-sectoral-marine-plan-offshore-wind-energy/documents/draft-sectoral-marine-plan-offshore-wind-energy-2019/draft-sectoral-marine-plan-offshore-wind-energy-

Scottish Government. (2021). *Maps NMPi*. Retrieved from Marine Scotland Information: http://marine.gov.scot/maps/nmpi?title=&items_per_page=25

SEPA. (2021). *Scottish Environmental Protection Agency: Bathing Waters results for Scotland*. Retrieved from https://www2.sepa.org.uk/bathingwaters/Locations.aspx

SSE. (2021). *PETERHEAD POWER STATION*. Retrieved from https://www.ssethermal.com/flexible-generation/operational/peterhead/

STR. (2019). *East Lothian Visitor Survey 2018.* Available in https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj1vMOswY3vAhWzQUEAHX7RDQ4QFjABegQIBxAD&url=https%3A%2F%2Fwww.eastlothian.gov.uk%2Fdownload%2Fdownloads%2Fid%2F28174%2Feast_lothian_visitor_survey_2018.pdf&usg=AOvVaw1.

Surf Forecast. (2021). *Sandford Bay*. Retrieved from Surf Forecast: https://www.surf-forecast.com/breaks/Sandford-Bay

Surfers Against Sewage. (2013). *The economic impact of domestic surfing on the United Kingdom.* https://www.sas.org.uk/wp-content/uploads/SAS-Economic-Impact-of-domestic-surfing-on-the-UK-med-2.pdf.

TCE. (2019, September). *Offshore Wind Leasing Round 4*. Retrieved from https://www.thecrownestate.co.uk/media/3378/tce-r4-information-memorandum.pdf

TCE. (2020a). *Offshore Carbon Capture and Storage Site Agreements (England, Wales & NI).* Retrieved from The Crown Estate.

TCE. (2020b). *Offshore Tidal Stream Site Agreements (England, Wales & NI) and Offshore Wave Site Agreements (England, Wales & NI).* Retrieved from The Crown Estate.

TCE. (2021b). *Marine Aggregates Information Centre - The Crown Estate*. Retrieved from http://www.marineaggregates.info/index.php Access on 02 September 2021

TCE. (2021b). *Offshore Wind Site Agreements (England, Wales & NI), s.l.: The Crown Estate.*

TCE. (2021c). *The Crown Estate - Assets Map*. Retrieved from https://thecrownestate.maps.arcgis.com/apps/webappviewer/index.html?id=b7f375021ea845fcabd46f83f1d48f0b

TCE. (2022). *The Crown Estate - Assets Map WebViewer*. Retrieved from https://thecrownestate.maps.arcgis.com/apps/webappviewer/index.html?id=b7f375021ea845fcabd46f83f1d48f0b

The Scottish Government. (2009). *Economic Impact of Recreational Sea Angling in Scotland: Executive Summary.*

The Seaside Awards. (2015). *Seaside Award Winners 2015*. Retrieved from http://www.theseasideawards.org/seasideawardwinners2015/2168

The Windsurf & SUP Club. (2021). *The Windsurf & SUP Club*. Retrieved from https://www.windsurfsup.club/

UK Government. (2020, October). *New Plans to Make UK World Leader in Green Energy*. Retrieved from Prime Minister's Office Press Release: https://www.gov.uk/government/news/new-plans-to-make-uk-world-leader-in-green-energy

UKHO. (2021). *UK Practice and Exercise area (PEXA) - Marine Limits App*. Retrieved from https://datahub.admiralty.co.uk/portal/apps/sites/#/marine-data-portal

UKHO. (2021). *UK Practice and Exercise area (PEXA) - Marine Limits App.* Retrieved from https://datahub.admiralty.co.uk/portal/apps/sites/#/marine-data-portal

Visit Scotland. (2017). *Scotland Visitor Survey 2015 & 2016*. Retrieved from https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers/scotland-visitor-survey-2015-16-full.pdf

Windsurf. (n.d.). *FRAISTHORPE*. Retrieved from https://www.windsurf.co.uk/beach-guide/fraisthorpe/