



Offshore Wind Power Limited

West of Orkney Windfarm Offshore EIA Report

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20 OTHER SEA USERS

Chapter summary

This chapter of the Offshore Environmental Impact Assessment (EIA) Report assesses the potential effects from the offshore Project on other sea user receptors. This includes direct, indirect, whole project assessment, cumulative, inter-related effects, inter-relationships, and transboundary effects.

There are a range of other sea user receptors present in the other sea users offshore study area. There is one marine renewable energy project, the proposed Pentland Floating Offshore Wind Farm (PFOWF) which recently received consent, two existing telecommunications cables (British Telecommunications (BT) Northern Lights and Farice-1), three active power cables (Pentland Firth East, Pentland Firth West and the Pentland Firth East Replacement Cable which is currently being replaced), with a fourth consented cable (Scottish Hydro Electric Transmission Limited (SHET-L) Caithness to Orkney High Voltage Alternating Current ((HVAC) Link), and one active spoil disposal site near Thurso. The intensity of marine recreation and tourism activities is high along the coasts, including activities such as SCUBA diving, surfing, canoeing or kayaking, coastal climbing and coasteering, and wildlife watching, although the levels of activity are slightly lower in the vicinity of the cable landfall options, due to their proximity to Dounreay. These types of activities are not prevalent in the Option Agreement Area (OAA) which is located over 20 kilometre (km) from shore. The Dounreay and Vulcan nuclear facilities and the associated decommissioning activities are present to the west of the landfall. A Food and Environment Protection Act 1985 (FEPA) Order Zone is in place which prohibits the harvesting of seafood within a 2 km radius of the historic Liquid Effluent Discharge System (LEDS) at Dounreay. Finally, it is expected that there will be launch exclusion zones associated with activities at Space Hub Sutherland project which have the potential to overlap with the OAA. Construction commenced in July 2023 and the first launch events are expected in 2024.

The following impacts were identified as requiring assessment during the construction, operation and maintenance and decommissioning stages:

- Obstruction to the PFOWF;
- Obstruction to subsea cables (telecommunication and power cables);
- Obstruction of recreational and tourism activities;
- Obstruction to Dounreay Nuclear Power Development Establishment (NPDE) and Vulcan Naval Reactor Test Establishment (NRTE) seabed decommissioning activities; and
- Obstruction to the Space Hub Sutherland.

The assessment has taken account of embedded mitigation measures for the assessment of potential effects, which will include a cable crossing agreement with SHET-L for the Caithness to Orkney HVAC Link.

All impacts to other sea users are predicted to be highly localised and manageable through consultation and coordination with relevant receptors. Numerical modelling undertaken to inform the physical and coastal processes assessment has predicted there will be no impacts on the wave resource, and hence surfing, along the north coast of Scotland. Therefore, no significant impacts to any other sea user receptors are predicted, either for the offshore Project alone, or cumulatively with other plans or projects (developments). No secondary mitigation or monitoring requirements are proposed. There are also no inter-related effects or transboundary effects and no overlap with the effects of the onshore Project and the impacts on other sea user receptors assessed for the offshore Project.



20.1 Introduction

This chapter of the Offshore Environmental Impact Assessment (EIA) Report presents the other sea user receptors of relevance to the offshore Project and assesses the potential impacts from the construction (including pre-construction), operation and maintenance, and decommissioning of the offshore Project on these receptors. Where required, mitigation is proposed, and the residual impacts and their significance are assessed. Potential cumulative and transboundary impacts are also considered.

The impact assessment presented herein draws upon information presented within other impact assessments within this Offshore EIA Report, including chapter 8: Marine physical and coastal processes, which assesses the impacts of suspended sediments and changes in water quality, chapter 15: Shipping and navigation, which assesses the impact of the offshore Project on shipping and navigation receptors, including the safety of third-party vessels potentially associated with other developments, recreational vessels and ferry services (the safety of vessels will not be considered within the other sea users chapter, only within chapter 15), chapter 17: Military and aviation, which assesses the impacts of military and aerial activity, and chapter 19: Socio-economics, which assesses the impacts on tourism and the local economy.

Equally, the other sea users impact assessment also informs other impact assessments. This interaction between the impacts assessed within different topic-specific chapters on a receptor is defined as an 'inter-relationship'. The chapters and impacts related to the assessment of potential effects on other sea users are provided in Table 20-1.

Table 20-1 Other sea users inter-relationships

CHAPTER	IMPACT	DESCRIPTION
Marine physical and coastal processes (chapter 8, Offshore EIA Report) and water and sediment quality (chapter 9, Offshore EIA Report)	Impact on aquaculture sites due to suspended sediments and changes in water quality. Impacts on waves and wave heights.	The potential for suspended sediments and changes in water quality to affect aquaculture sites via physical and coastal processes, and the potential for changes to wave parameters. An assessment of potential suspended sediment concentrations and associated changes in water quality are discussed in chapter 8: Marine physical and coastal processes and chapter 9: Water and sediment quality. The impact of the offshore Project on wave parameters, which could affect surfing communities, is discussed in chapter 8: Marine physical and coastal processes.
Military and aviation (chapter 17, Offshore EIA Report)	Impacts on military Practice and Exercise Areas (PEXA), and aerial activity.	The presence of military PEXA and Areas of Intense Aerial Activity are described in detail in chapter 17: Military and aviation.
Shipping and navigation (chapter 15, Offshore EIA Report)	Impacts on recreational boating, ferry services, third-party vessels, including those associated with nearby assets	The impact on marine recreation and tourism activity associated with recreational boating and ferry services, and the presence of non-aerial military activity.



CHAPTER	IMPACT	DESCRIPTION
	/ activities, and subsea military operations.	The impact of the offshore Project on recreational boating and ferry services is discussed in chapter 15: Shipping and navigation.
Socio-economics (chapter 19, Offshore EIA Report)	Impacts on tourism, recreation, and the economy.	Both positive and negative socio-economic impacts associated with tourism, recreation, and amenities. Socio-economics impacts (either positive or negative) have the potential to impact other sea user receptors, and these are assessed in chapter 19: Socio-economics.

Furthermore, impacts relating to other sea user receptors not considered within this chapter are discussed in chapter 15: Shipping and navigation, chapter 17: Military and aviation, and chapter 14: Commercial fisheries, respectively.

Xodus Group Limited (Xodus) is the sole contributor to the other sea users assessment and has prepared this Offshore EIA Report chapter.

20.2 Legislation, policy and guidance

Over and above the legislation presented in chapter 3: Planning policy and legislative context, the following legislation, policy and guidance are relevant to the assessment of impacts from the offshore Project on other sea users. The wider marine planning and EIA legislation, policy and guidance is discussed in chapter 3: Planning policy and legislative context.

- Policy:
 - The following policies of the Scotland’s National Marine Plan (Scottish Government, 2015) apply to this other sea users assessment:
 - GEN 1 General Planning Principle; and
 - GEN 4 Co-existence.
 - The National Islands Plan (Scottish Government, 2019) sets out 13 objectives to address crucial sectors within island communities. Under Strategic Objective 2: to improve and promote sustainable economic development, there are several commitments to improve opportunities for island businesses and communities, including building on Scotland’s National Marine Plan objectives and policies to increase opportunities for Island communities in relation to economic activities stemming from the sea.
- Guidance:
 - Assessment of Impact of Offshore Wind Energy Structures on the Marine Environment (Marine Institute, 2000);
 - Guidance on Environmental Impact Assessment of Offshore Renewables Energy Development on Surfing Resources and Recreation (Surfers Against Sewage (SAS), 2009);
 - European Subsea Cables Association (ESCA) Guideline No 6, The Proximity of Offshore Renewable Energy Installations and Submarine Cable Infrastructure in United Kingdom (UK) Waters (ESCA, 2016);
 - International Cable Protection Committee (ICPC) Recommendations (ICPC, 2019);
 - The Crown Estate (TCE) Export transmission cables for offshore renewable installations – Principles of cable routing and spacing (TCE, 2012a); and



- TCE Submarine cables and offshore renewable energy installation – Proximity study (TCE, 2012b).

20.3 Scoping and consultation

Stakeholder consultation has been ongoing throughout the EIA and has played an important part in ensuring the scope of the baseline characterisation and impact assessment are appropriate with respect to the offshore Project and the requirements of the regulators and their advisors.

The Scoping Report, which covered the onshore and offshore Project, was submitted to Scottish Ministers (via Marine Scotland - Licensing Operations Team (MS-LOT)¹) and The Highland Council (THC) on 1st March 2022². MS-LOT circulated the Scoping Report to consultees relevant to the offshore Project and a Scoping Opinion was received on 29th June 2022. Relevant comments from the Scoping Opinion to other sea users are provided in Table 20-3 below, which provides a response on how these comments have been addressed within the Offshore EIA Report.

Further consultation has been undertaken throughout the pre-application stage. Table 20-2 summarises the consultation activities carried out relevant to other sea users.

Table 20-2 Consultation activities for other sea users

CONSULTEE AND TYPE OF CONSULTATION	DATE	SUMMARY
British Telecommunications (BT) - email	16 th November 2022	Written communication regarding adverse impacts to telecommunications links. BT confirmed that no interference with their networks from the offshore Project was anticipated.
Surfing community – Pre-application Consultation (PAC) event	30 th November 2022	Discussion on potential impacts to surfing beaches and spots along the Caithness and Sutherland coast, raising concerns of potential impacts to the wave climate.
Orbex, developer and operator of Space Hub Sutherland – meeting	8 th December 2022	Meeting to discuss potential interference with Space Hub Sutherland launch activities, construction timelines and operational protocols. Details from the consultation are included in section 20.4.3.7.

¹ MS-LOT have since been renamed Marine Directorate - Licensing Operations Team (MD-LOT).

² The Scoping Report was also submitted to Orkney Islands Council (OIC), as the scoping exercise included consideration of power export to the Flotta Hydrogen Hub, however, this scope is not covered in this Offshore EIA Report and will be subject to separate Marine Licence and onshore planning applications.



Table 20-3 Comments from the Scoping Opinion response relevant to other sea users

CONSULTEE	COMMENT	RESPONSE
<p>Scottish Ministers (via MS-LOT)</p>	<p>With regards to the proposed study area, the Scottish Ministers advise that the Developer must extend the routing area and buffer zone study area, as detailed within paragraph 5.10 of the Shipping and Navigation section of this Scoping Opinion.</p>	<p>The study area has been selected to be consistent with chapter 15: Shipping and navigation.</p>
<p>Scottish Ministers (via MS-LOT)</p>	<p>The Scottish Ministers broadly agree with the potential impacts scoped in for further assessment in the EIA Report as contained in Table 2-76 of the Scoping Report. However, in line with the advice from OIC, the Scottish Ministers advise that impacts on ferry services, and the communities that use those services, must be scoped into the EIA Report for all phases of the Proposed Development.</p>	<p>As advised by MS-LOT, impacts to ferry services, and the communities that use those services, are discussed within chapter 15: Shipping and navigation. No ferry routes cross the offshore Project, as the offshore export cable cables to the Flotta Hydrogen Hub are not part of this application. Therefore, disruption to ferry services and the communities that use those services have been scoped out of this chapter and is not considered further.</p>
<p>Scottish Ministers (via MS-LOT)</p>	<p>The Scottish Ministers note that the RYA recommends including impacts on recreational boating when assessing shipping and navigation and that OIC recommended that impacts on ferry services also be included in relation to shipping and navigation. To prevent duplication, the Scottish Ministers advise that the Developer must assess the impacts on recreational boating and ferry services within the Shipping and Navigation chapter of the EIA Report.</p>	<p>As advised by MS-LOT, assessment of impacts to recreational boating and ferry services are discussed in chapter 15: Shipping and navigation only and cross-referenced within this chapter, where appropriate.</p>
<p>BT</p>	<p>The conclusion is that the Project indicated will likely cause interference to BT’s current and presently planned radio network.</p> <p>Please let us know when you have the coordinates for the turbines, and we will carry out an investigation to see if they will cause</p>	<p>The potential interference with BT point-to-point microwave radio links was identified within the Scapa Flow region, which is not part of the offshore Project boundary.</p>



CONSULTEE	COMMENT	RESPONSE
	<p>interference. We require 100 metre clearance of any structure that passes our radio path to pass a proposal. We have also included the results below which shows the co-ordinates and antenna heights of the links which may assist you. However, it is best we have the exact co-ordinates of the proposed structures to carry out an assessment when they are available. If we have missed them apologies, please let us know where these are available.</p>	<p>BT were consulted in November 2022 to understand if a potential interference with the BT point-to-point microwave radio links exists for the updated offshore Project area which is outwith Scapa Flow. BT responded with the following:</p> <p><i>"We have studied this proposal using the co-ordinates attached, with respect to electromagnetic compatibility and related problems to BT point-to-point microwave radio links.</i></p> <p><i>The conclusion is that the study area should not cause interference to BT's current and presently planned radio network."</i></p> <p>Considering this response, impacts to telecommunication links are scoped out of this Offshore EIA Report, as noted in section 20.5.2.</p>
<p>Marine Scotland Science (MSS)</p>	<p>There are currently no aquaculture sites registered with Marine Scotland Science located in the immediate vicinity of the OAA of the West of Orkney Wind Farm development proposed by Offshore Wind Power Ltd.</p>	<p>Noted. A baseline description of aquaculture sites is included in section 20.4.3.3.</p>
<p>MSS</p>	<p>However, there are a number of aquaculture sites in the wider surrounding area. The nearest are situated on the North coast of mainland Scotland ca. 30 km south of the SW boundary of the OAA. This includes an active shellfish site at Kyle of Tongue stocking Pacific oysters and native oysters in seawater trestles (operated by Kyle of Tongue Oysters), and also two active marine finfish cage sites stocking Atlantic salmon in Loch Eriboll (operated by Scottish Sea Farms Ltd). Further into Loch Eriboll there are 5 active shellfish sites: four common mussel longline sites and one Pacific oyster trestle site. The operators of these sites are Loch Eriboll Oysters, Loch Laxford Shellfish and Cape Wrath Mussels.</p>	<p>Noted. As the other sea users offshore study area only extends out to 18 kilometre (km), these sites are not considered within the assessment. The potential for suspended sediment and water quality impacts is addressed in chapter 8: Marine physical and coastal processes and chapter 9: Water and sediment quality. Suspended sediment and water quality impacts are not anticipated to extend out to the closest aquaculture site at 17.4 km, as the plume of suspended sediments is not anticipated to extend beyond 8 km from the offshore Project area Therefore, suspended sediment and reduced water quality impacts on aquaculture sites are scoped out of this Offshore EIA Report, as noted in section 20.5.2.</p>



CONSULTEE	COMMENT	RESPONSE
<p>MSS</p>	<p>There are also a number of aquaculture sites on the east coast of Hoy: the nearest site at the north end is ~37 km east of the proposed development. These sites are active marine cage Atlantic salmon sites (operated by Scottish Sea Farms Ltd or Cooke Aquaculture Scotland). Furthermore, an active Pacific and native oyster trestle site is situated 42 km south east of the proposed development on the south coast of Hoy (this site is operated by Orkney Oysters (Hoy) Ltd).</p>	<p>Noted. However, given that the other sea users offshore study area only extends out to 18 km these sites are not considered. Furthermore, the offshore export cables to the Flotta Hydrogen Hub which overlap with Scapa Flow are not part of this consent application.</p> <p>The potential for suspended sediment and water quality impacts that could travel to aquaculture outside of the other sea users offshore study area is addressed in chapter 8: Marine physical and coastal processes and chapter 9: Water and sediment quality. Suspended sediment and water quality impacts are not anticipated to extend out to the closest aquaculture site at 17.4 km, as the plume of suspended sediments is not anticipated to extend beyond 8 km from the offshore Project area.</p>
<p>NatureScot</p>	<p>We are content with the outlined approach, but advise that, particularly for Scapa Flow, there may be the potential for cumulative effects from other types of development, aquaculture, and port / harbour construction in particular, and these should be included in any cumulative assessment.</p>	<p>Noted. These development types were considered in the identification of other developments which could result in cumulative effects with the offshore Project, as outlined in section 20.7. No aquaculture or port / harbour developments were identified as potentially acting cumulatively with the offshore Project. It should be noted that the offshore export cables to the Flotta Hydrogen Hub which overlap with Scapa Flow are not part of this consent application.</p>
<p>OIC</p>	<p>In Table 20-4, Include:</p> <ul style="list-style-type: none"> • Orkney Harbours Masterplan – Phase 1 https://www.orkneyharbours.com/documents/orkney-harbours-masterplan-phase-1 • Scotland's Aquaculture Home • Clyde Cruising Club Sailing Directions and Anchorages: Orkney and Shetland Islands including North and Northeast Scotland: https://www.clyde.org/publications/ 	<p>The relevant key datasets and reports were reviewed for this chapter (see Table 20-4). It should be noted that data from the Clyde Cruising Club will be considered in chapter 15: Shipping and navigation in relation to recreational boating. The Orkney Harbours Masterplan is not considered further as the offshore export cables to the Flotta Hydrogen Hub are not part of this application and Scapa Flow is outside of the other sea users offshore study area.</p>



CONSULTEE	COMMENT	RESPONSE
	<ul style="list-style-type: none"> The Kingfisher Information Service – Offshore Renewable and Cable Awareness (KIS-ORCA) 	
OIC	<p>For clarity, the restriction on new aquaculture development only applies to fin fish farming; growth of shellfish farming is currently not restricted on the North and East coasts.</p>	<p>This clarification on restricted areas for aquaculture is noted and is reflected upon in section 20.4.3.3.</p>
OIC	<p>The British Telecommunications plc (BT) - R100 Fibre Optic Telecommunication Cable Project is scheduled to install sixteen submarine cables to extend superfast broadband (30Mbps+) coverage across Shetland, Orkney, and Inner Hebrides. Cables are scheduled to be installed from Crockness (Hoy) to Flotta and Flotta to South Ronaldsay in 2020. Marine licence details here:</p> <ul style="list-style-type: none"> https://marine.gov.scot/ml/marine-licence-cable-installation-hoy-flotta-00009535 https://marine.gov.scot/ml/marine-licence-cable-installation-flotta-south-ronaldsay-00009538 	<p>Noted. However, as the offshore export cables to the Flotta Hydrogen Hub are not part of this consent application, the BT R100 Fibre Optic Telecommunication Cables lie outwith the other sea users offshore study area. Therefore, there is a limited potential for interaction between the offshore Project and impacts on these cables are scoped out of the assessment. Therefore, the BT R100 Fibre Optic Telecommunication Cable Project is not considered further.</p>
OIC	<p>Should include ferry services. Ferry terminals are addressed in the land use section of the Scoping Report and the navigational aspects of ferry routes / services are addressed under shipping and navigation. It is appropriate for the Other Sea Users section of the EIA to consider impacts on ferry services and the associated communities.</p>	<p>Impacts to ferry services are discussed within chapter 15: Shipping and navigation. This is reflected on in section 0. No ferry routes cross the offshore Project, as the offshore export cables to the Flotta Hydrogen Hub are not part of this application. Therefore, disruption to ferry services has been scoped out of this chapter and is not considered further.</p>
OIC	<p>The Orkney Harbour Authority should be consulted to determine whether there are any wider Harbour Area operational issues to be</p>	<p>The Orkney Harbour Authority were consulted in relation to impacts on shipping and navigation (see chapter 15: Shipping and navigation) as requested by Scottish Ministers / MS-LOT.</p>



CONSULTEE	COMMENT	RESPONSE
	considered over and above STS and the Flotta Oil Terminal in Scapa Flow.	
OIC	Include Orkney Harbour Authority as a consultee.	The Orkney Harbour Authority were consulted in relation to impacts on shipping and navigation (see chapter 15: Shipping and navigation), where appropriate information obtained during this consultation has been used to inform the Other Sea Users impact assessment.
RYA	For recreational boating there is considerable overlap between this section and another section. I recommend that text relating to recreational boating is amalgamated with the relevant parts of the other section to avoid duplication. Note that while recreational boating intensity is greatest in the summer there can be activity all year round in favourable weather windows.	Assessment of impacts to recreational boating are discussed in chapter 15: Shipping and navigation only and cross-referenced within this chapter, where appropriate, as requested by Scottish Ministers / MS-LOT.
THC	If there are no predicted effects on communication links as a result of the development, the EIAR should still address this matter by explaining how this conclusion was reached.	Written communication was sent to BT on the 16 th November 2022, regarding adverse impacts to telecommunications links. BT confirmed that no interference with their networks from the offshore Project was anticipated.



20.4 Baseline characterisation

This section outlines the current baseline for other sea user receptors within the other sea users offshore study area. A desk-based approach was used to establish the baseline through publicly available data sources and literature.

20.4.1 Study area

The other sea users offshore study area is defined as the offshore Project area, encompassing the Zone of Influence (Zol) that will be directly impacted by the offshore infrastructure (including Wind Turbine Generators (WTGs) and associated foundations, the Offshore Substation Platforms (OSPs) and associated foundations, the inter-array cables, the interconnector cables, and offshore export cables). A buffer of up to 27 kilometres (km) has been placed around the offshore Project area to consider a wider area around the offshore Project and consider the movement of mobile other sea users.

20.4.2 Data sources

The existing data sets and literature with relevant coverage to the offshore Project, which have been used to inform the baseline characterisation for other sea user receptors are outlined in Table 20-4.

Table 20-4 Summary of key datasets and reports

TITLE	SOURCE	YEAR	AUTHOR
Marine and Coastal Tourism and Recreation in the Pentland Firth and Orkney Waters: A Case Study	https://marine.gov.scot/datafiles/misc/PFOW_marine_and_coastal_tourism_report/PFOW%20report%20V2%20-%20FINAL.pdf	2015	Aquatera
Scottish Marine Recreation and Tourism Survey	https://data.marine.gov.scot/dataset/scottish-marine-recreation-and-tourism-survey-2015	2015	Marine Scotland
Scotland's National Marine Plan	https://www.gov.scot/publications/scotlands-national-marine-plan/	2015	Scottish Government
State of the Environment Assessment: A Baseline Assessment of the Orkney Islands Marine Region	https://www.orkney.gov.uk/Service-Directory/D/orkney-islands-marine-region-state-of-the-environment-assessment.htm	2020a	OIC
Orkney Islands Council Marine Services Annual Report 2019-2020	https://view.publitas.com/k4-graphics/marine-services-annual-report-19-20/page/32	2020b	OIC



TITLE	SOURCE	YEAR	AUTHOR
Sectoral marine plan: regional locational guidance	https://www.gov.scot/publications/sectoral-marine-plan-regional-locational-guidance/	2020	The Scottish Government
Dounreay Nuclear Decommissioning Guide	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/985222/Dounreay_2021.pdf	2021a	Dounreay Site Restoration Limited (DSRL)
Regional Marine Plan for the Orkney Islands: Statement of Public Participation	https://www.orkney.gov.uk/Service-Directory/D/marine-planning.htm	2021	OIC
Energy & Infrastructure Spatial Data	https://crown-estate-scotland-spatial-hub-coregis.hub.arcgis.com/	2022a	Crown Estate Scotland (CES)
Aquaculture Spatial Data	https://crown-estate-scotland-spatial-hub-coregis.hub.arcgis.com/	2022b	CES
The Kingfisher Information Service – Offshore Renewable and Cable Awareness (KIS-ORCA)	https://kis-orca.org/map/	2022	ESCA and the Kingfisher Information Service of Seafish
Leisure Activities	https://magicseaweed.com/UK-Ireland-Surf-Forecast/1/	2022	Magic Seaweed
The Marine Scotland National Marine Plan Interactive (NMPI) Maps	https://marinescotland.atkinsgeospatial.com/nmpi/	2022	Marine Scotland
Scotland's Aquaculture Online Database	http://aquaculture.scotland.gov.uk/	2022	Marine Scotland, Scottish Environment Protection Agency, Crown Estate Scotland, Food Standards Scotland, and NatureScot
Orkney Marine Planning Tourism and Recreation Survey	https://www.orkney.gov.uk/Service-Directory/D/marine-planning.htm	2022a	OIC
Orkney Islands Regional Marine Plan: Consultation Draft	https://www.orkney.gov.uk/Service-Directory/D/marine-planning.htm	2022b	OIC



20.4.3 Existing baseline

A review of literature and available data sources (Table 20-4), augmented by consultation responses on the Scoping Report and subsequent consultation, has been undertaken to describe the current baseline environment for other sea users.

The key features of other sea users present in or around the offshore Project area are:

- Offshore renewable energy developments;
- Subsea cables and utilities;
- Aquaculture;
- Licenced spoil disposal sites;
- Recreation and tourism;
- Nuclear infrastructure; and
- Other infrastructure.

The following section provides information on the key other sea user receptors across the other sea users offshore study area, as described in section 20.4.1.

20.4.3.1 Offshore renewable energy developments

Pentland Floating Offshore Wind Farm (PFOWF) is located approximately 7.5 km off the coast of Dounreay (Figure 20-1). The PFOWF is being developed by Highland Wind Limited (HWL) and will consist of up to seven floating WTGs with an installed capacity of around 100 megawatts (MW). The PFOWF offshore export cable corridor route makes landfall at the Dounreay Foreshore in Caithness, and PFOWF is located approximately 2 km west of the offshore Export Cable Corridor (ECC) and 20 km southeast of the Option Agreement Area (OAA).

There are other offshore renewable energy developments along the north coast of Scotland and the Orkney islands, such as the European Marine Energy Centre Ltd. (EMEC) wave energy test site (Billia Croo), MeyGen tidal project, both operational and the Orbital Marine Power (Orkney) Tidal Farm (Ness of Duncansby) currently in pre-planning, but these developments are outwith the other sea users offshore study area and will not be considered further (Figure 20-1). There are also additional ScotWind sites present along the north coast of Scotland, such as those located within the N2 and N3 Plan Option (PO) areas which will be developed by Northland Power and Magnora Offshore Wind respectively. However, these sites are also outside of the offshore study area and are not considered further.

20.4.3.2 Subsea cables and utilities

There are two telecommunication cables located within the other sea users offshore study area. The BT Northern Lights cable, running from Dunnet in Caithness to Skail Bay on Orkney Mainland; and Farice telecommunication cable Farice-1, running from Castletown in Dunnet Bay, Caithness, continuing north past the Orkney Mainland to the Faroe Islands. The Farice-1 telecommunications cable is closest, located 4.9 km east of the OAA and 5.2 km east of the offshore ECC (Figure 20-1). The Northern Lights telecommunications cable is 9.3 km east of the offshore ECC and 18.4 km east of the offshore ECC (Figure 20-1).



There are three existing subsea power cables located within the other sea users offshore study area, including: Pentland Firth East and Pentland Firth West, and the Pentland Firth East³ replacement cable. Scottish and Southern Electricity (SSE) completed replacement works for the Pentland Firth East subsea power cable in 2020 (SSE, 2020). However, due to the fact the Pentland Firth East replacement cable has since failed, further cable replacement works are taking place, at the time of writing, and are expected to be complete by the end of August 2023⁴. These replacement works involve partial removal of the existing cable and the installation of a complete replacement of the Pentland Firth East cable. The Pentland Firth West and Pentland Firth East cables are approximately 36 km in length, which have connection points between Murkle Bay, near Thurso and Rackwick Bay on the west coast of Hoy, Orkney. These power cables are located approximately 10.8 – 15.7 km east of the offshore ECC, and 23.7 – 25.2 km east of the OAA (Figure 20-1).

The Scottish Hydro Electric Transmission Ltd (SHET-L) Caithness to Orkney High Voltage Alternating Current (HVAC) Link is within the other sea users offshore study area, approximately 22 km south of the OAA and crossing the offshore ECC (Figure 20-1). The consented 70 km 220 kilovolt (kV) subsea electricity transmission connection runs from the existing connection site at Dounreay, Caithness to Warebeth on the west coast of Orkney mainland (SSEN, 2019). The Marine Licence for the development expired in 2021 and has since been extended to cover a period between 2022 and 2027⁵. Therefore, it has been assumed that construction of the cable may occur up until 2027.

20.4.3.3 Aquaculture

There is one aquaculture lease agreement site for seaweed harvesting within the other sea users offshore study area. This lease agreement is located in Dunnet Bay (ID: CA-11-8) approximately 17.4 km from the offshore Project (Figure 20-2). Impacts related to suspended sediments and water quality are not expected to occur out to this distance (see chapter 8: Marine physical and coastal processes and chapter 9: Water and sediment quality), and access to seaweed harvesting will not be obstructed by the offshore Project.

There are no aquaculture lease agreements or sites for finfish or shellfish farming located within the other sea users offshore study area. Additionally, new aquaculture development for fin fish farming is restricted on the north of Scotland coastline, and only existing aquaculture sites can be extended (Scottish Government, 2014). This restriction does not apply to shellfish farming which is currently not restricted on the north and east coasts of Scotland.

Overall, there are no impacts expected on aquaculture sites or lease agreements, and aquaculture will not be considered further within this chapter.

³ It should be noted that the Pentland Firth East replacement cable has since failed and is undergoing replacement. A Marine Licence application was submitted for the cable removal and replacement in December 2022 and a Marine Licence was granted on 19th April 2023. Further information is available through the Marine Directorate website at: <https://marine.gov.scot/node/23332>.

⁴ <https://www.orkneyharbours.com/info/notices/pentland-firth-power-cable-installation>.

⁵ Further information available through the Marine Directorate website at: <https://marine.gov.scot/ml/marine-licence-hvac-cable-orkney-mainland-scotland-06889>.

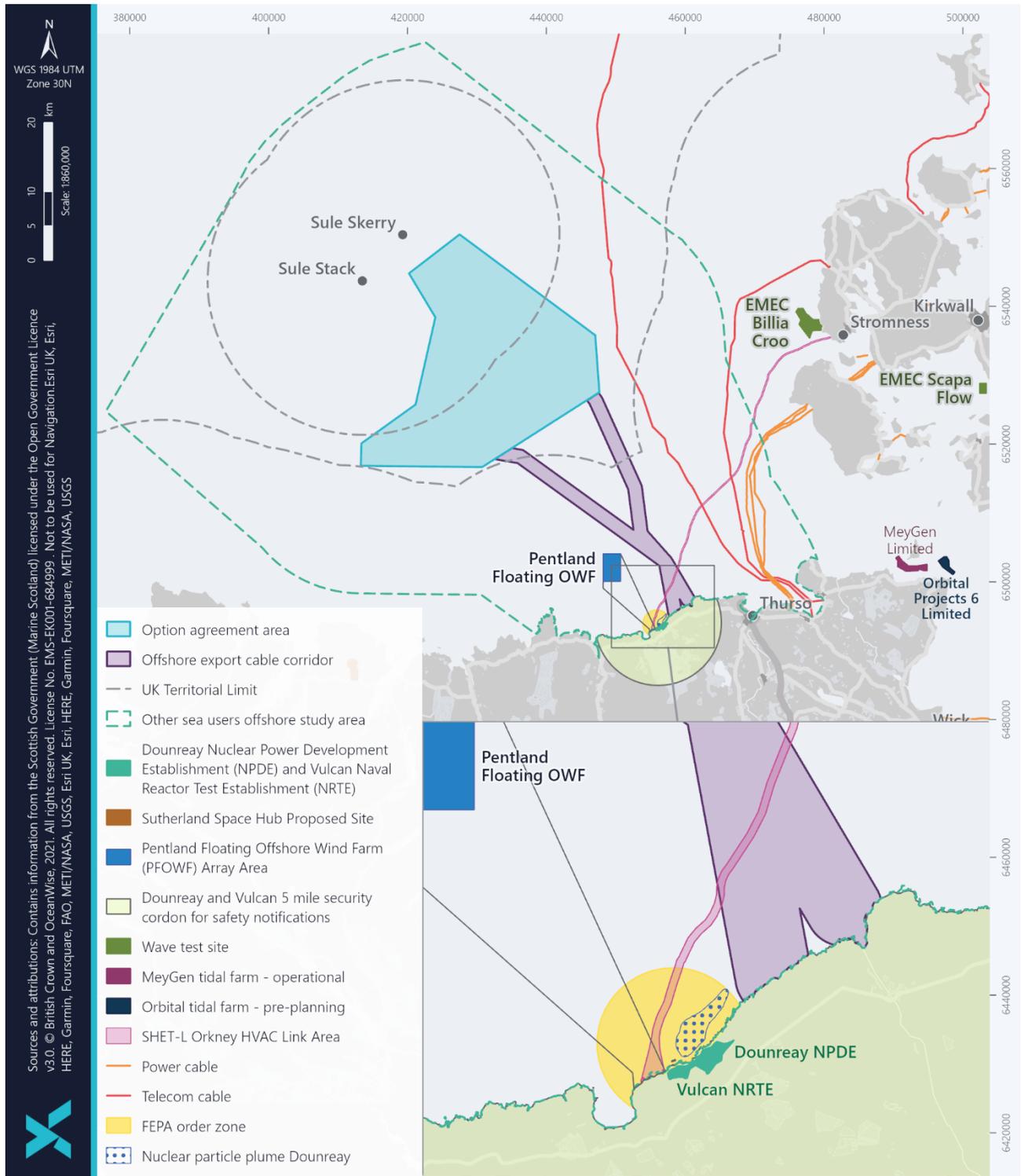


Figure 20-1 Existing infrastructure

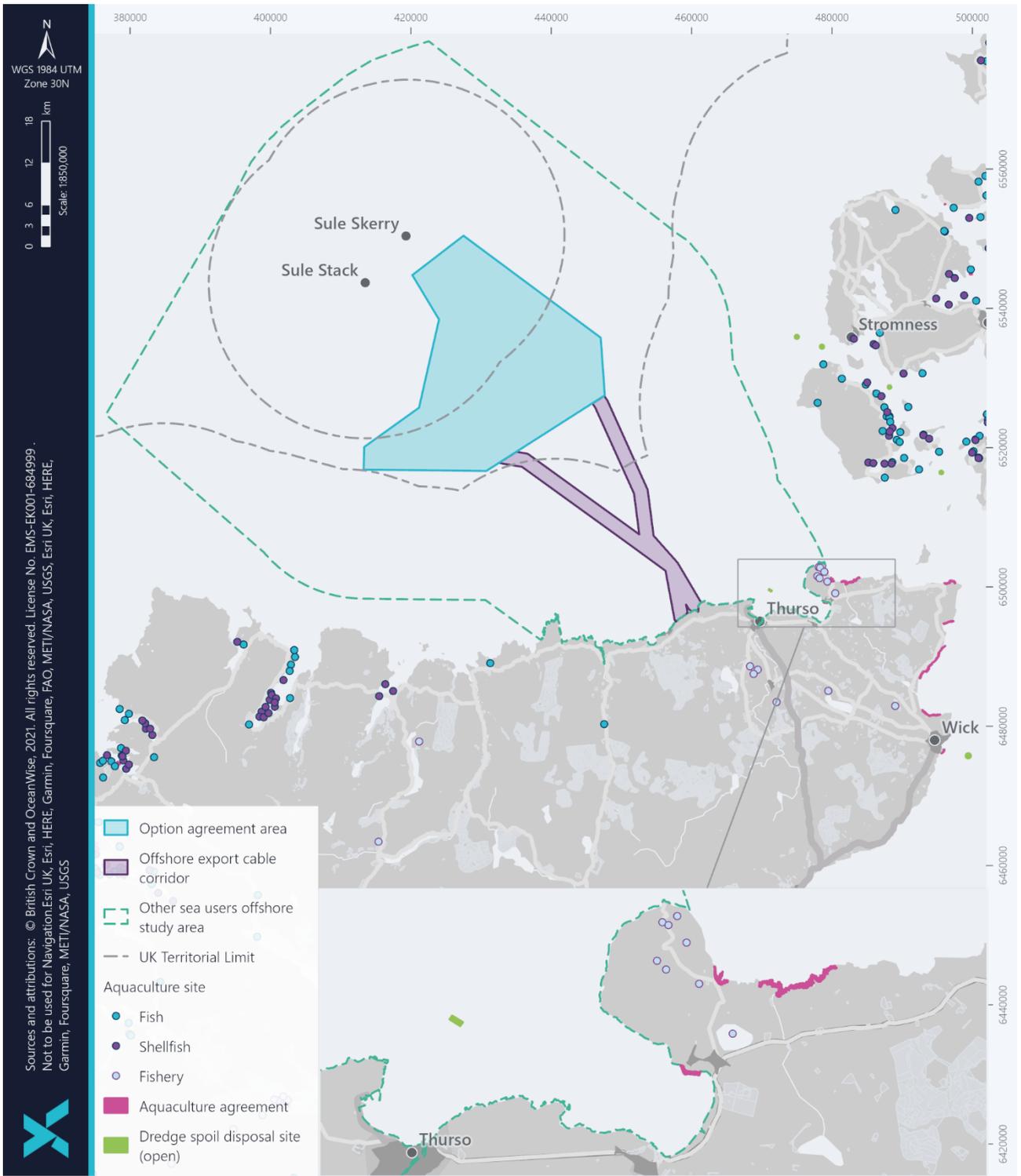


Figure 20-2 Aquaculture and licenced spoil disposal sites



20.4.3.4 Licenced spoil disposal sites

There is only one active dredge spoil disposal site within the other sea users offshore study area. The Scrabster dredge disposal site (ID: FI008) is located near Thurso at approximately 9.8 km east of the offshore ECC and 36.4 km southeast of the OAA (Figure 20-2). Other spoil disposal sites in the region are closed or inactive, and no impacts to these sites are anticipated. Considering the distance between the offshore Project and the closest dredge disposal site, no obstruction is expected. Therefore, licenced spoil disposal sites will not be considered further within this chapter.

20.4.3.5 Recreation and tourism

The Scottish Marine Recreation and Tourism Survey (SMRTS) highlighted the importance of recreational and tourism activity around the Scottish coastline (Marine Scotland, 2015). The majority of recreational activities occur within 10 km of the shoreline (Figure 20-3). There are a number of dive sites along the Caithness coast and west Orkney coast, such as Thurso East reef which is a known SCUBA diving spot. There are popular surfing beaches located all along the Caithness and Sutherland coastline. These include Sandside Bay, Thurso (including Thurso reef), and Brimms Ness, amongst others some of which are located 2 km from the potential landfall at Crosskirk (Magic Seaweed, 2022). Local wildlife tourism operators, such as Seawolf Wildlife Tours and Above and Beyond, are also present around Thurso and Dunnet. Wildlife watching is promoted as a tourist and recreational activity throughout the Pentland Firth and Orkney waters given the abundance of nesting seabirds on the cliffs, seals, and whales (Aquatera, 2015). There is significant tourism out to John O'Groats to view the Atlantic puffins during the breeding season, and the Royal Society for the Protection of Birds (RSPB) Scotland has a large reserve near Dunnet Head. Figure 20-3, illustrates that recreational and tourism related activity is of lower importance at the cable landfalls, compared to other areas along the Caithness coast.

Canoeing and kayaking are also popular in this region, with the Pentland Canoe Club participating in river and sea kayaking, surf kayaking, and open canoeing. Recreational boating is also present throughout; and these activities are also discussed in chapter 15: Shipping and navigation, as outlined in section 20.3. It is noted that all recreational activities are highly seasonal and dependant on certain weather and tidal conditions.

Ferry services are operated between the north of Scotland and Orkney and are a popular mode of transport for tourists to access the islands. There are no ferry routes that overlap with the offshore Project. NorthLink Ferries operate a roll-on / roll-off (ro-ro) ferry service between Scrabster and Stromness and the ferry route passes approximately 7 km to the east of the offshore ECC. John O'Groats Ferries operate a passenger only ferry service in the summer months between John O'Groats and Burwick, South Ronaldsay, Orkney approximately 30 km east of the offshore ECC. Pentland Ferries operates a ro-ro ferry service between Gill's Bay and St Margarets Hope, South Ronaldsay, Orkney approximately 35 km east of the offshore ECC. As no ferry routes overlap with the offshore Project, no disruption is expected (and was confirmed from consultation with NorthLink Ferries), and therefore, disruption to ferry services has been scoped out of this chapter. Further details on ferry services are provided in chapter 15: Shipping and navigation.

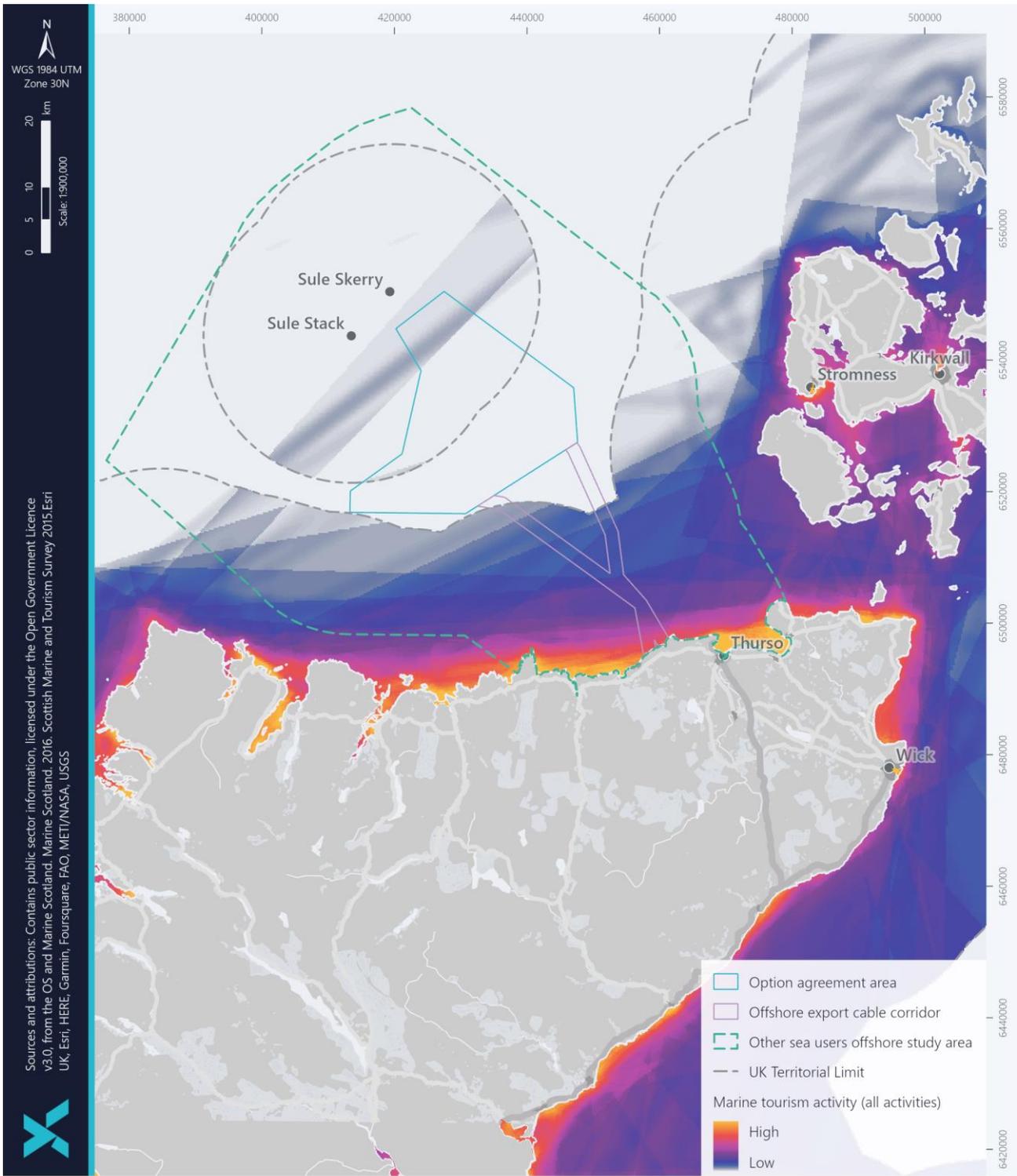


Figure 20-3 Marine recreation and tourism activity levels around the offshore Project



20.4.3.6 Nuclear infrastructure

The Dounreay and Vulcan nuclear sites are located on the north coast of Caithness, adjacent to the Greeny Geo landfall in the other sea users offshore study area (Figure 20-1). The sites consist of 73 active facilities, including the Dounreay Nuclear Power Development Establishment (NPDE), managed by DSRL within the Nuclear Decommissioning Authority (NDA), and the Vulcan Naval Reactor Test Establishment (NRTE), managed by the Ministry of Defence (MoD), along with the reactors, fuel cycle areas, and nuclear and radioactive waste facilities (DSRL, 2021a).

As a result of operational standards in reprocessing during the 1960s and 1970s, some radioactive particles were released into the sea via a discharge pipeline in a subsea tunnel that extends approximately 600 m offshore, as part of the liquid effluent discharge system that was in place until 1992. Due to this area of concern, a Food and Environment Protection Act 1985 (FEPA) Order zone is in place which prohibits the harvesting of seafood within a 2 km radius of the historic liquid effluent discharge system (Figure 20-1). A new discharge pipeline was installed, largely within the previous subsea tunnel to a new discharge point adjacent to the old location (Dounreay Particles Advisory Group, 2006). A number of radioactive particles have been discovered on the seabed close to the old discharge point. An extensive programme of remediation activity was undertaken by DSRL to detect and retrieve hazardous particles from a 60-hectare area of seabed near the outfall using Remotely Operated Vehicles (ROVs), clean-up vehicles and divers.

The seabed remedial works commenced in 2008 and continued each summer until 2012 (DSRL, 2021b). Presently, there is routine monitoring undertaken at the beaches at Sandside Bay and Dounreay Foreshore as part of a particle recovery programme regulated by the Scottish Environment Protection Agency (SEPA) and funded by the NDA (DSRL, 2021b). These monitoring activities are confined to beaches that do not overlap with the landfall area for the offshore Project.

The Dounreay NPDE is set to be decommissioned, with a target date of 2033 (NDA, 2022). There is currently limited public information available regarding the specific decommissioning activities and timeline. A report in October 2022 by the DSRL's Dounreay Stakeholder Group (DSG) Site Restoration sub-group indicates that a Life Time Plan is being developed and set to be carried out as of April 2024, and it is expected that more detail on decommissioning programmes will be available at that time (DSRL, 2022). The decommissioning activities are predicted to be isolated onshore, as the current report emphasises plans for the fuel cycle area, reactors, and waste disposal via incineration (DSRL, 2022). No information was identified for the decommissioning activities for the subsea tunnel, which extends approximately 600 m offshore.

The Vulcan NRTE site consists of a short test facility that was shut down in 2015, and it is now within a 'post-operational stage' until the site is decommissioned⁶. In June of 2021 it was announced that fuel management activity at the site would extend for up to three more years (UK Parliament, 2021). The Vulcan NRTE decommissioning programme is currently progressing, with intention to transfer the decommissioning liability to the NDA; however, as of July 2023, the feasibility of the transfer is still being assessed and options are being reviewed (DSRL, 2023a; b). It is expected

⁶ <https://www.naval-technology.com/uncategorized/newsuk-mod-shuts-down-naval-test-nuclear-reactor-in-scotland-4630622/>.



that the Vulcan NRTE decommissioning will be within a timeline that is consistent with the programme for Dounreay (DSRL, 2019).

20.4.3.7 Other infrastructure

Space Hub Sutherland is located on the A' Mhòine peninsula, Sutherland approximately 30 km south-southwest of the OAA. Space Hub Sutherland was granted planning approval by THC in August 2020 and Orbex were appointed to lead construction and operational manager of the spaceport in November 2022. Construction commenced in early 2023 with the first space launch expected in 2024; launches are capped at 12 per year. Consultation with Space Hub Sutherland (section 20.3) indicates that a launch exclusion zone will have to be initiated within 1-2 hours of the space vehicle being fuelled on the launch pad and there will be restrictions in place for the launch corridor to ensure human safety in the event of a technical failure (but not including unmanned vehicles or installations). Orbex have confirmed that a temporary exclusion zone during launches over the sea will only be exercised during launch stages and that aviation and marine operators will be notified via Notice to Airmen (NOTAM) and Notice to Mariners (NtM). Offshore Wind Power Limited (OWPL's) discussions with Orbex indicate that operation of the offshore Project is not expected to disrupt Space Hub Sutherland's operations. However, OWPL will develop internal procedures to ensure that personnel working within the offshore Project remain outside temporary exclusion zones, or take appropriate safety measures, during launch sequences (expected to be once a month).

20.4.4 Future baseline

The baseline description in section 20.4.3 considers both existing and proposed developments and activities. For example, the future baseline for subsea cables, other offshore renewable energy developments, and Space Hub Sutherland is subject to change, as these developments are either proposed to be constructed or, in the case of the Dounreay Nuclear Facility and Vulcan NRTE, proposed to be decommissioned. These users have been considered within this impact assessment; and therefore, the future baseline scenario is unlikely to change substantially from that presented in section 20.4.3. Nevertheless, it is acknowledged that the future baseline is subject to gradual change as new developments / plans are proposed and progressed, and the baseline will evolve with or without the offshore Project being in place.

Recreation and tourism activities are highly seasonal, driven by periods of optimal weather and tidal conditions. As climate change may result in unfavourable weather and tidal conditions, such as increased storminess, the future baseline condition for these activities has the potential to change. Climate change may also impact wildlife resulting in changes in abundance of species and/or spatial and temporal changes in their distribution which has the potential to change the future baseline condition for wildlife tourism activity.



20.4.5 Summary and key issues

Table 20-5 Summary and key issues for other sea users

OFFSHORE PROJECT AREA	
SUMMARY AND KEY ISSUES	<ul style="list-style-type: none"> • Proximity of PFOWF; • Proximity of the BT Northern Lights and Farice Farice-1 telecommunications cables and two active power cables (Pentland Firth East, Pentland Firth West); • Overlap with the consented SHET-L Caithness to Orkney HVAC Link power cable; • A high intensity of marine recreational and tourism activity inshore, although less so in the immediate vicinity of the cable landfalls; • Ongoing decommissioning activities associated with the Dounreay NPDE and Vulcan NRTE; and • Potential overlap with the temporary marine exclusion zone required during launch events at the Space Hub Sutherland.

20.4.6 Data limitations and uncertainties

The baseline environment detailed in section 20.4.3 above has been established through an extensive review of the available data sources and literature (Table 20-4), and information gained through consultation, which are considered to be sufficient. Therefore, there is a robust baseline available to inform the impact assessment and there are no significant data gaps regarding other sea users present in the other sea users offshore study area.

The key areas of uncertainty include:

- SHET-L Caithness to Orkney HVAC Link - the construction timeline for the SHET-L Caithness to Orkney HVAC Link;
- Dounreay NPDE and Vulcan NRTE - the timeline and activities for the decommissioning for the Dounreay NPDE and Vulcan NRTE, as a specific decommissioning programme and activities are yet to be announced; and
- Space Hub Sutherland - the temporary exclusion zones over the air and sea have not been announced.

Overall, the impact assessment has been based on the most up-to-date information available.

20.5 Impact assessment methodology

20.5.1 Impacts requiring assessment

The impacts identified as requiring consideration for other sea user receptors are listed in Table 20-6. Information on the nature of impact (i.e., direct, or indirect) is also described.



Table 20-6 Impacts requiring assessment for other sea users

POTENTIAL IMPACT	NATURE OF IMPACT
Construction (including pre-construction) and decommissioning*	
<ul style="list-style-type: none"> • Temporary obstruction to the PFOWF; • Temporary obstruction to subsea cables (telecommunication and power cables); • Temporary obstruction of recreational and tourism activities; • Temporary obstruction to Dounreay NPDE and Vulcan NRTE seabed decommissioning activities; and • Temporary obstruction to the Space Hub Sutherland. 	Direct
Operation and maintenance	
<ul style="list-style-type: none"> • Obstruction of the PFOWF activities; • Obstruction of subsea cables; • Obstruction of recreational and tourism activities; • Obstruction of Dounreay NPDE and Vulcan NRTE seabed decommissioning activities; and • Obstruction or interference to the Space Hub Sutherland. 	Direct

** In the absence of detailed information regarding decommissioning works, and unless otherwise stated, the impacts during the decommissioning of the offshore Project considered analogous with, or likely less than, those of the construction stage.*

20.5.2 Impacts scoped out of the assessment

The impacts scoped out of the assessment during EIA scoping, and the justification for this, are listed in Table 20-7. Since the production of the Scoping Report, the offshore Project area has been refined. The connection to the Flotta Hydrogen Hub is a separate project and will be subject to separate applications in due course. Accordingly, the details currently available for connection to the Flotta Hydrogen Hub have been considered in the cumulative assessment only. Therefore, some of the impacts scoped into the Offshore EIA Report within the Scoping Report are no longer relevant, as detailed in Table 20-7.



Table 20-7 Impacts scoped out for other sea users

IMPACT SCOPED OUT	JUSTIFICATION
Construction and decommissioning	
<p>Suspended sediment and reduced water quality impacts on aquaculture during construction</p>	<p>The impacts associated with increased suspended sediments are expected to be localised to approximately 8 km from the offshore Project area (see chapter 8: Marine physical and coastal processes). Furthermore, the risk and impact of accidental releases of hazardous substances will be reduced through the implementation of the Environmental Management Plan (EMP), including measures for compliance with international requirements of the International Convention for the Prevention of Pollution from Ships (MARPOL) convention, as well as best practice for works in the marine environment (e.g., preparation of Shipboard Oil Pollution Emergency Plans (SOPEP)) (see Offshore EIA Report, Outline Plan (OP) 1: Outline Environmental Management Plan).</p> <p>Given the compliance with legislation, implementation of embedded mitigation, and the distance between the offshore Project and the nearest aquaculture lease agreement, no significant effects are predicted in relation to potential suspended sediment or water quality impacts on aquaculture sites. Therefore, this impact has been scoped out of this Offshore EIA Report.</p>
<p>Temporary obstruction to oil and gas activities within Scapa Flow*</p>	<p>There are no oil and gas assets or activities within the other sea users offshore study area. Therefore, there is no potential pathway for impact.</p> <p>The Orkney transmission connection within Scapa Flow to the Flotta Hydrogen Hub are not part of this consent application and will not be considered within this offshore EIA.</p>
<p>Obstruction to carbon capture, natural gas storage, underground gasification, and coal deposits</p>	<p>There is no carbon capture, natural gas storage, underground gasification, or coal deposit developments within the other sea users offshore study area. Therefore, there is no pathway for impact, and impacts on these receptors have been scoped out of this Offshore EIA Report.</p>
<p>Temporary obstruction to the EMEC wave test sites</p>	<p>The EMEC wave test sites are located outside of the other sea users offshore study area, approximately 30 km from the offshore Project area. Considering this distance, no temporary obstruction to the EMEC wave test sites is anticipated and impacts on this receptor have been scoped out of this Offshore EIA Report.</p>
<p>Temporary obstruction to spoil disposal</p>	<p>As described in section 20.4.3.4, the Scrabster dredge disposal site (ID: FI008) is located 9.8 km from the offshore Project area and is the only active spoil disposal in the other sea users offshore study area. There are no impacts to dredge disposal activity or obstruction to site access expected given this distance between the site and the offshore Project. Therefore, temporary obstruction to spoil disposal has been scoped out of this Offshore EIA Report.</p>
<p>Temporary obstruction to ferry services</p>	<p>As described in section 0, there are no ferry routes that overlap with the offshore Project and therefore will not be considered in this Offshore EIA Report. Impacts on ferry services are discussed in chapter 15: Shipping and navigation.</p>



IMPACT SCOPED OUT	JUSTIFICATION
Operation and maintenance	
<p>Reduced water quality impacts on aquaculture during operation and maintenance</p>	<p>Routine maintenance activities may potentially result in reduced water and sediment quality in the immediate vicinity of the offshore Project infrastructure, including from the cleaning of biofouling of offshore Project infrastructure, accidental discharges from vessels and increased suspended sediments. However, any impacts are likely to be short lived and localised and risks will be adequately managed through the embedded mitigation measures, including using anti biofouling paints suitable for the marine environment and fauna and complying with pollution prevention measures (as outlined for construction and decommissioning).</p> <p>Given the compliance with legislation, implementation of embedded mitigation, and the distance between the offshore Project and the nearest aquaculture lease agreement, no significant effects are predicted on aquaculture sites associated with the operation and maintenance of the offshore Project.</p>
<p>Adverse impacts to telecommunication links*</p>	<p>BT initially responded to the Scoping Report indicating that there was potential for interference with telecommunication links from the offshore Project (see Table 20-3). However, the interference was isolated to the Scapa Flow region which is not considered within the other sea users offshore study area. Therefore, no interference is anticipated from the offshore Project, and this has been confirmed with BT, as described in section 20.3. This impact has been scoped out of this Offshore EIA Report.</p> <p>There will be continued consultation with BT to ensure there is no potential interference to their operations.</p>
<p>Obstruction of oil and gas activities</p>	<p>As described above for construction and decommissioning.</p>
<p>Temporary obstruction to carbon capture, natural gas storage, underground gasification, and coal deposits</p>	<p>As described above for construction and decommissioning.</p>
<p>Obstruction of EMEC wave test sites</p>	<p>As described above for construction and decommissioning.</p>
<p>Obstruction to spoil disposal</p>	<p>As described above for construction and decommissioning.</p>
<p>Obstruction to ferry services</p>	<p>As described above for construction and decommissioning.</p>

** This impact was originally scoped into the Offshore EIA Report within the Scoping Report but is no longer relevant, as detailed in Table 20-3.*



20.5.3 Assessment methodology

An assessment of potential impacts is provided separately for the construction, operation and maintenance, and decommissioning stages.

The assessment for other sea users is undertaken following the principles set out in chapter 7: EIA methodology. The sensitivity of the receptor is combined with the magnitude to determine the impact significance. Topic-specific sensitivity and magnitude criteria are assigned based on professional judgement, as described in Table 20-8 and Table 20-9.

Table 20-8 Sensitivity criteria

SENSITIVITY OF RECEPTOR	DEFINITION
High	<ul style="list-style-type: none"> Receptor with no capacity to accommodate a particular effect and no ability to recover or adapt; and/or Receptor of economic value to an extent that is international or nationally important.
Medium	<ul style="list-style-type: none"> Receptor with low capacity to accommodate a particular effect with low ability to recover or adapt; and/or Receptor of economic value to an extent that is regionally important.
Low	<ul style="list-style-type: none"> Receptor has some tolerance to accommodate a particular effect or will be able to recover or adapt; and/or Receptor of economic value to an extent that is locally important.
Negligible	<ul style="list-style-type: none"> Receptor is generally tolerant and can accommodate a particular effect without the need to recover or adapt; and/or Receptor is widespread / common and is of low conservation / economic value.

Table 20-9 Magnitude criteria

MAGNITUDE CRITERIA	DEFINITION
High	<ul style="list-style-type: none"> Total change or major alteration to key elements / features of baseline conditions (e.g., damage to the asset which results in permanent or long-term inoperability or complete loss of access); Impact occurs over a large scale or spatial geographical extent and/or is long-term or permanent in nature; and/or



MAGNITUDE CRITERIA	DEFINITION
	<ul style="list-style-type: none"> • High frequency (occurring repeatedly or continuously for a long period of time) and/or at high intensity.
Medium	<ul style="list-style-type: none"> • Partial change or alteration to one or more key elements / features of the baseline conditions (e.g., damage to the asset which results in medium-term inoperability or a significant loss of access); • Impact occurs over a medium scale / spatial extent and/or has a medium-term duration; and/or • Medium to high frequency (occurring repeatedly or continuously for a moderate length of time) and/or at moderate intensity or occurring occasionally / intermittently for short periods of time but at a moderate to high intensity.
Low	<ul style="list-style-type: none"> • Minor shift away from the baseline conditions (e.g., damage to the asset which results in temporary inoperability or temporary loss of access); • Impact occurs over a local to medium scale / spatial extent and/or has a short to medium-term duration; and/or • Impact is unlikely to occur or at a low frequency (occurring occasionally / intermittently for short periods of time at a low intensity).
Negligible	<ul style="list-style-type: none"> • Very slight change from baseline conditions (e.g., miniscule damage to the asset which results in short-term inoperability or minor loss of access); • Impact is highly localised and short term with full rapid recovery expected to result in very slight or imperceptible changes to baseline conditions or receptor population; and/or • The impact is very unlikely to occur and if it does will occur at very low frequency or intensity.

The consequence and significance of effect is then determined using the matrix provided in chapter 7: EIA methodology.

20.5.4 Embedded mitigation

As described in chapter 5: Project description, certain measures have been adopted as part of the offshore Project development process in order to reduce the potential for impacts to the environment, as presented in Table 20-10. These have been accounted for in the assessment presented below. The requirement for additional mitigation measures (secondary mitigation) will be dependent on the significance of the effects on other sea user receptors.



Table 20-10 Embedded mitigation measures relevant to other sea users

MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
<p>Application for and implementation of safety zones</p>	<p>Primary</p>	<p>Application for and implementation of statutory safety zones of up to 500 m around structures during construction and periods of major maintenance, and 50 m around structures pre commissioning.</p>	<p>An application for safety zones will be made in accordance with Section 95 of the Energy Act 2004 and the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007. Details will be included within the Navigational Safety Vessel and Management Plan (NSVMP), required under Section 36 Consent and/or Marine Licence conditions.</p> <p>An outline NSVMP is provided as part of the offshore application in OP4: Outline Navigational Safety and Vessel Management Plan. The outline NSVMP details the process and approach for the application of statutory safety zones.</p>
<p>Promulgation of information, such as Notice to Mariners, Kingfisher notifications and other navigational warnings on the location, duration and nature of works</p>	<p>Tertiary</p>	<p>Promulgation of information, including timely and efficient distribution of NtMs, Kingfisher notifications and other navigational warning on the location, duration and nature of works, including, statutory and advisory safety zones.</p>	<p>Secured through Section 36 Consent and/or Marine Licence conditions.</p> <p>Requirements will be detailed within the NSVMP, required under Section 36 Consent and/or Marine Licence conditions.</p> <p>An outline NSVMP is provided as part of the offshore application in OP4: Outline Navigational Safety and Vessel Management Plan. The outline NSVMP includes details on the communication and information dissemination to other mariners.</p>
<p>Communication of final layout to confirm effects on telecommunication links, community television and radio</p>	<p>Tertiary</p>	<p>Continued consultation with BT, British Broadcasting Corporation (BBC), Joint Radio Company (JRC) and Ofcom with regards to potential interference with telecommunication links, community television and radio.</p>	<p>The production and approval of a Development Specification Layout Plan will be required under Section 36 Consent and/or Marine Licence conditions.</p>



MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
Notifications to Dounreay Site Restoration (DSRL) and the Ministry of Defence (MoD)	Tertiary	Notification to DSRL and the MoD regarding plans for offshore activity for compliance with the security measures of the Dounreay NPDE and Vulcan NRTE given their proximity to the offshore Project.	Secured through consultation with relevant stakeholders.
Crossing and proximity agreements	Primary	Crossing and proximity agreements with known existing cable operators will be established where reasonably practicable.	Secured through consultation with relevant stakeholders and OWPL's commitment to discuss the establishment of crossing and proximity agreements with relevant third-parties.
Emergency Response Cooperation Plan (ERCoP)	Tertiary	Development and adherence to an ERCoP. The ERCoP will provide sufficient information about the Project, actions and details required in the event of an emergency situation. This will ensure that Maritime and Coastguard Agency recommended standards and procedures are followed as well as ensuring appropriate lighting and marking is in place to facilitate aeronautical safety during Search and Rescue helicopter operations.	<p>The production and approval of a ERCoP will be required through the Section 36 Consent and/or Marine Licence conditions.</p> <p>Lighting requirements will be detailed in the Lighting and Marking Plan (LMP), required under Section 36 Consent and/or Marine Licence conditions.</p> <p>An outline LMP is provided as part of the offshore application in OP6: Outline Lighting and Marking Plan.</p>
Charting of installed infrastructure	Tertiary	Notification to the United Kingdom Hydrographic Office (UKHO) / Kingfisher of the proposed works to facilitate the promulgation of maritime safety information and updating of nautical / admiralty charts and publications.	<p>Requirements will be detailed within the NSVMP, required through Section 36 Consent and/or Marine Licence conditions.</p> <p>An outline NSVMP is provided as part of the offshore application in OP4: Outline Navigational Safety and Vessel Management Plan.</p>
Database of local users	Tertiary	Creation of a database of known users (including local yacht clubs, local dive clubs and local recreational activity centres) to act as a mailing list for direct issue of NtMs. To ensure that as many interested parties as possible are aware of Project activities.	Ongoing commitment for OWPL.



MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
Consultation with Space Hub Sutherland	Tertiary	Continue to consult with Space Hub Sutherland as they develop their launch exclusion zone and operational procedures.	Ongoing commitment for OWPL.
Decommissioning programme	Tertiary	The development of, and adherence to, a Decommissioning Programme, approved by Scottish Ministers prior to construction and updated throughout the Project lifespan.	The production and approval of a Decommissioning Programme will be required under Section 105 of the Energy Act 2004 (as amended).

20.5.5 Worst case scenario

As detailed in chapter 7: EIA methodology, this assessment considers the worst case scenario for the offshore Project parameters, which are predicted to result in the greatest environmental impact, known as the 'worst case scenario'. The worst case scenario represents, for any given receptor and potential impact, the design option (or combination of options) that would result in the greatest potential for change.

Given that the worst case scenario is based on the design option (or combination of options) that represents the greatest potential for change, the development of any alternative option within the design parameters will give rise to no worse effects than those assessed in this impact assessment. Table 20-11 presents the worst case scenario for potential impacts on other sea users during construction, operation and maintenance, and decommissioning.



Table 20-11 Worst case scenario specific to other sea users receptor impact assessment

POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
Construction		
<p>Temporary obstruction to the PFOWF</p>	<ul style="list-style-type: none"> • Pre-construction activities including: <ul style="list-style-type: none"> – Geophysical surveys; – Unexploded Ordnance (UXO) clearance requiring detonation of up to 22 targets over 22 days, with one detonation per 24-hour period. The method of detonation would be High-Order, involving up to 5 kg bulk high explosive disposal charge and fragments out to a 10 – 15 m radius; – Pre-lay grapnel run along the entire length of all cables; – Boulder clearance width of 30 m per cable and at WTG and OSP locations; and – Bedform⁷ clearance along the inter-array, export, and interconnector cables. • Construction of: <ul style="list-style-type: none"> – A maximum of 125 WTGs; 	<p>The parameters that represent the greatest obstruction to access for the PFOWF based on the maximum area and duration of construction and decommissioning activities.</p>
<p>Temporary obstruction to subsea (telecommunication and power cables)</p>	<ul style="list-style-type: none"> • Construction of: <ul style="list-style-type: none"> – A maximum of 125 WTGs; 	<p>The parameters that represent the greatest obstruction to proposed and existing subsea cables in terms of cable laying and cable crossings based on the maximum area and duration of construction and decommissioning activities.</p>

⁷ Bedforms include sandwave bedforms, bedform fields comprising of sand and gravel, megaripples and rippled scour depressions which are present in different areas across the offshore Project area (see chapter 8: Marine physical and coastal processes for further information).



POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
<p>Temporary obstruction of recreational and tourism activities</p>	<ul style="list-style-type: none"> - A maximum of up to five HVAC OSPs; - Six interconnector cables with a total length of 150 km within the OAA; - Inter-array cables with a total length of 500 km within the OAA; - Five offshore export cables with a total length of 320 km within the offshore ECC; - Landfall installation works requiring Horizontal Directional Drilling (HDD) of up to six drilled holes split across Greeny Geo and Crosskirk with a maximum of six HDD exit pits (five plus one spare), each of an area of 300 m² (totalling 1,800 m²), at a water depth of approximately 10 - 40 m below Lowest Astronomical Tide (LAT) (approximately at a minimum of 100 m offshore from 0 m LAT); and - Up to 10 total cable crossings across the offshore Project area with five within the offshore ECC (including with the consented SHET-L Caithness to Orkney HVAC Link) and an additional five with the inter-array and interconnector, and crossing material consisting of concrete mattresses, rock berms or a combination of these methods. 	<p>The parameters that represent the greatest obstruction to marine recreation and tourism activities due to restricted access based on the maximum area and duration of construction and decommissioning activities.</p>
<p>Temporary obstruction to Dounreay NPDE and Vulcan NRTE seabed decommissioning activities</p>	<ul style="list-style-type: none"> • 500 m statutory safety zones during construction activities around WTG / OSPs, implemented on a rolling basis; • A construction period up to four years (with an additional year of pre-construction activities (e.g. boulder clearance and UXO clearance), across multiple seasons of approximately 6 – 9 months each; and • Up to 30 vessels on site at any one time. 	<p>The parameters that represent the greatest obstruction to access of Dounreay nuclear facility for decommissioning activity based on the maximum area and duration of construction and decommissioning activities.</p>
<p>Temporary obstruction or interference to the Space Hub Sutherland</p>	<ul style="list-style-type: none"> • 500 m statutory safety zones during construction activities around WTG / OSPs, implemented on a rolling basis; • A construction period up to four years (with an additional year of pre-construction activities (e.g. boulder clearance and UXO clearance), across multiple seasons of approximately 6 – 9 months each; and • Up to 30 vessels on site at any one time. 	<p>The parameters that represent the largest area used by the offshore Project and longest duration of the construction and decommissioning activities that represents obstruction to the launch exclusion zone for Space Hub Sutherland.</p>
<p>Operation and maintenance</p>		
<p>Obstruction of PFOWF activities</p>	<ul style="list-style-type: none"> • Operational life of up to 30 years; 	<p>The parameters that represent the greatest obstruction to access for the PFOWF based on</p>



POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
<p>Obstruction of subsea cables</p>	<ul style="list-style-type: none"> • Presence of: <ul style="list-style-type: none"> – A maximum of 125 WTGs; – Up to five HVAC OSPs; – Six interconnector cables with a total length of 150 km within the OAA; – Inter-array cables with a total length of 500 km within the OAA; – Five offshore export cables with a total length of 320 km within the offshore ECC; and 	<p>the maximum area and duration of operation and maintenance activities.</p> <p>The parameters that represent the greatest obstruction to proposed and existing subsea cables based on the maximum area and duration of operation and maintenance activities.</p>
<p>Obstruction of recreational and tourism activities</p>	<ul style="list-style-type: none"> – Up to 10 cable crossings across the offshore Project area with five within the offshore ECC (including with the consented SHET-L Caithness to Orkney HVAC Link) and an additional five with the inter-array and interconnector, with crossing material consisting of concrete mattresses, rock berms or a combination of these methods. 	<p>The parameters that represent the greatest obstruction to marine recreation and tourism activities due to restricted access based on the maximum area and duration of operation and maintenance activities.</p>
<p>Obstruction of Dounreay NPDE and Vulcan NRTE seabed decommissioning activities</p>	<ul style="list-style-type: none"> • Maintenance activities including: <ul style="list-style-type: none"> – 500 m statutory safety zones around the WTG / OSPs for major maintenance activities; – Annual and bi-annual maintenance activities for the WTGs and major component replacements performed on an ad hoc basis; – Annual routine inspections of the foundations, with repairs on an ad hoc basis; 	<p>The parameters that represent the greatest obstruction to access of Dounreay and Vulcan nuclear facilities for decommissioning activity based on the maximum area and duration of operation and maintenance activities.</p>
<p>Obstruction or interference to the Space Hub Sutherland</p>	<ul style="list-style-type: none"> – Annual routine inspections of the inter-array cables, interconnector cables, and offshore export cables initially, and then visual inspections on a three-year basis, with the surveys performed over several days at a time; – Following the routine inspections, the requirement of geophysical surveys, inter-array cable repair, inter-array cable reburial, and additional inspections on an ad hoc basis; and – Up to 19 vessels on site at one time. 	<p>The parameters that represent the greatest amount of and longest duration of operation and maintenance activities that represents obstruction to the launch exclusion zone Space Hub Sutherland.</p>



POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
Decommissioning		

In the absence of detailed information regarding decommissioning works, the implications for other sea users are considered analogous to or likely less than those of the construction stage. Therefore, the worst case parameters defined for the construction stage also apply to decommissioning. The decommissioning approach is set out in chapter 5: Project description.



20.6 Assessment of potential effects

20.6.1 Potential effects during construction (including pre-construction)

Temporary obstruction of other sea users may arise from increased presence of vessels and safety zones during pre-construction (e.g. UXO clearance and site preparation) and construction activities.

In addition, UXO clearance has the potential to damage infrastructure in the vicinity of the offshore Project. Pre-construction geophysical surveys will identify if there are UXO present along the seabed, and any potential UXO identified will be subject to further examination by use of ROVs. If UXO is confirmed along the seabed and is unavoidable, then a separate Marine Licence application and approval will be sought for UXO clearance. Industry standard safety measures will be implemented to reduce any risk of damage, and there will be consultation between OWPL and any nearby other sea user receptors (e.g. PFOWF and SHET-L Caithness to Orkney HVAC Link) regarding these safety measures to ensure all assets are protected. Considering this embedded mitigation, damage from UXO clearance will be effectively mitigated, and this impact is not considered further in this chapter.

An assessment of potential effects from these activities, using the worst case scenario presented in 20.5.5 is provided below.

20.6.1.1 Temporary obstruction to the Pentland Floating Offshore Wind Farm (PFOWF)

The PFOWF array area is located approximately 2 km west of the offshore ECC. The construction activities associated with the offshore Project have the potential to temporarily obstruct access to the PFOWF site. The construction activities of PFOWF are planned to finish by 2026, and therefore, prior to construction for the offshore Project (which is planned to commence in 2027). The construction periods do not overlap, and therefore the obstruction of access to PFOWF will be during its operation and maintenance stage.

The OAA is located 20 km from the PFOWF array area, and therefore, no major obstruction is expected from the construction activities taking place in this area. The impacts are most likely to be associated with the installation of the offshore export cables within the offshore ECC which could limit the movements of third party vessels and obstruct access for the operation and maintenance activities associated with the PFOWF.

The PFOWF is of an economic value to an extent that it is nationally important, as it is set to be the world's largest floating OWF and will contribute to the Scottish Government's target of net zero greenhouse gas emissions by 2045 set out in the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019. Therefore, the PFOWF is assessed to be of **high sensitivity**.

There will be distribution of NtM prior to construction and ongoing consultation between OWPL and HWL regarding planned activities to agree on procedures that will reduce any adverse effect on both the PFOWF and the offshore Project. As third party vessels will be aware of the offshore Project construction activities, it is expected that they will be able to plan ahead and re-route with minimal interference to access. Furthermore, the temporary obstruction will only occur occasionally / intermittently for short periods of time, as access to PFOWF will not be required on a



continuous basis but rather ad-hoc for operation and maintenance activities. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.

Evaluation of significance

Taking the high sensitivity of PFOWF and the low magnitude of the impact, the overall effect of temporary obstruction to the PFOWF during construction is considered to be **minor** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
High	Low	Minor

Impact significance - NOT SIGNIFICANT

20.6.1.2 Temporary obstruction to subsea cables (telecommunication and power cables)

The BT Northern Lights and Farice-1 telecommunications cables are existing assets located within the other sea users offshore study area. Additionally, SSE's Pentland Firth East⁸ and Pentland Firth West are two active power cables present within the other sea users offshore study area. The consented SHET-L Caithness to Orkney HVAC Link subsea power cable is also within the offshore study area and crosses the offshore ECC. Overall, subsea cables are of an economic value to an extent they are nationally important, and internationally important in the case of the Farice-1 telecommunications cable, and therefore are assessed to be of **high sensitivity**.

Pre-construction activities, construction of infrastructure and the implementation of safety zones around construction vessels may obstruct activities associated with the subsea cable construction, operation and maintenance. The offshore Project will not directly overlap with the BT Northern Lights, Farice-1, Pentland Firth East, and Pentland Firth West cables. It is expected that given the distribution of NtMs, third-party vessels associated with operations and maintenance of these existing cables (including any future cable repair / replacement activities) will be able to plan ahead and re-route, as necessary, around offshore Project construction activities for the majority of these cable assets. Considering that access to existing cables is only required on an ad-hoc basis, and the fact that any obstruction will be short in duration and intermittent throughout the four-year construction period and the additional year of pre-construction activities, the impact on the BT Northern Lights, Farice-1, Pentland Firth East, and Pentland Firth West is defined as being of **negligible magnitude**.

As the SHET-L Caithness to Orkney HVAC Link overlaps with the offshore ECC, there is a greater potential for access to be obstructed when compared with the operational cables that do not overlap with the offshore Project. Furthermore, as the construction timeline for the SHET-L Caithness to Orkney HVAC Link is yet to be announced, it has been assumed that there is the potential for an overlapping construction period with the offshore Project through 2027. The landfall works, increased vessel presence and implementation of safety zones may limit the movements of third-party vessels associated with the installation of the SHET-L cable if the construction periods overlap. Embedded

⁸ The Pentland Firth East cable has since failed and is undergoing replacement.



mitigation measures, such as the distribution of NtMs will make other users aware of the construction works for the offshore Project. Furthermore, prior to construction, OWPL will consult with SHET-L to understand the planned activities and to agree on procedures to reduce any adverse impact on both the SHET-L Caithness to Orkney HVAC Link and the offshore Project.

As the SHET-L Caithness to Orkney HVAC Link may cross the offshore ECC, there is the potential for damage to the cable which may be costly to repair. However, these will be managed through the establishment of crossing and proximity agreement(s) and the application of standard mitigation (ESCA, 2016; TCE, 2012a,b). Considering this, the impact on the SHET-L Caithness to Orkney HVAC Link is defined as being of **low magnitude**.

Evaluation of significance

Taking the high sensitivity of the SHET-L Caithness to Orkney HVAC Link and the low magnitude of impact, the overall effect of temporary obstruction is considered to be **minor** and **not significant** in EIA terms.

For all other cables in the other sea users offshore study area, taking the high sensitivity and negligible magnitude of impact, the overall effect of temporary obstruction is considered to be **negligible** and **not significant** in EIA terms.

Receptor	Sensitivity	Magnitude of impact	Consequence
SHET-L Caithness to Orkney HVAC Link	High	Low	Minor
All other cables in the other sea users offshore study area	High	Negligible	Negligible

Impact significance - NOT SIGNIFICANT

20.6.1.3 Temporary obstruction of recreational and tourism activities

The other sea users offshore study area overlaps with a range of recreational activities, especially in the inshore region where the recreational activity is higher. This includes the Pentland Canoe Club, as well as other recreational use of the waters such as for SCUBA diving out at Thurso East reef, and the significant wildlife tourism present in the region as described in section 0.

Recreational and tourism activities provide conservation and economic value from the coastline at Caithness out to Orkney, and therefore have a conservation and economic value to an extent that is regionally important. Marine recreational users are able to tolerate obstruction or displacement from the offshore Project area. Considering this, recreational and tourism activities are assessed to be of **low sensitivity**.

The increased vessel presence and implementation of safety zones during the construction stages may result in restricted areas and temporary loss of access, especially for the nearshore area of the offshore export cables, which lie within the area of higher recreational activity. Overall, the area of obstruction associated with the offshore Project represents a small area in comparison to where recreational activities occur, and any obstruction will largely cease once the landfall works and offshore export cable installation in the nearshore areas is complete. There will be notices



issued prior to the start of construction activities, and therefore it is expected that marine recreation and tourism will be able to adapt and plan around the restricted areas. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.

Evaluation of significance

Taking the low sensitivity of marine recreational and tourism receptors and the low magnitude of impact, the overall effect of temporary obstruction of recreational and tourism activities is considered to be **negligible and not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
Low	Low	Negligible

Impact significance - NOT SIGNIFICANT

20.6.1.4 Temporary obstruction to Dounreay NPDE and Vulcan NRTE seabed decommissioning activities

The Dounreay NPDE and Vulcan NRTE are coastal developments located adjacent to the Greeny Geo landfall in the other sea users offshore study area. The Dounreay NPDE and Vulcan NRTE decommissioning programmes are still being developed, but it is expected that decommissioning activities will largely be isolated to the onshore facilities. The only offshore infrastructure present is a subsea tunnel that extends out to 600 m, and the decommissioning activities for this tunnel are not known. The seabed remedial works finished in 2012, and there is no impact expected for the ongoing monitoring activities as these are constrained onshore to the beaches. The Dounreay NPDE and Vulcan NRTE as nuclear facilities are of an economic value to extent that is nationally important and are therefore assessed to be of **high sensitivity**.

The temporary obstruction may restrict access to some areas as a result of the landfall works and the presence of vessels and safety zones in the nearshore area. Any temporary obstruction is expected to be minimal given that the decommissioning activities will be predominantly onshore, and the offshore Project does not overlap with the Dounreay NPDE or Vulcan NRTE sites (or the 600 m subsea tunnel associated with Dounreay). Therefore, the decommissioning activities will still be able to proceed with minimal disruption caused. There will be consultation with MoD and DSRL closer to the time of construction and once information regarding decommissioning activities become available to reduce any adverse effects. The offshore Project will adhere to the agreed OWPL procedures to notify of activities and/or presence within the five-mile security cordon. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **negligible magnitude**.



Evaluation of significance

Taking the high sensitivity of Dounreay NPDE and Vulcan NRTE and the negligible magnitude of impact, the overall effect of temporary obstruction to Dounreay NPDE and Vulcan NRTE seabed decommissioning activities is considered to be **negligible** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
High	Negligible	Negligible

Impact significance - NOT SIGNIFICANT

20.6.1.5 Temporary obstruction or interference to the Space Hub Sutherland

The Space Hub Sutherland is located onshore outside of the offshore study area, but there is potential for overlap with temporary exclusion zones placed over the air and sea during launches. The geographic extent of the launches has yet to be announced in detail, but current plans are that the launches will be north of the Space Hub Sutherland onshore site which would then enter the airspace over the other sea users offshore study area, and that these exclusion zones would be initiated within 1 – 2 hours of the space vehicle being launched.

There will be extensive planning required in advance of the launches to ensure safety measures on land, in air, and in the sea. The launches will also require favourable weather conditions which may only occur in narrow windows of opportunity. Therefore, the Space Hub Sutherland would be considered to have a lower capacity to accommodate temporary obstruction, with low ability to adapt. The Space Hub Sutherland is also of an economic value to an extent that it is regionally important by supplying jobs in Caithness and Sutherland, and nationally important as it will support the UK space industry. Considering the low capacity to accommodate and adapt to temporary obstruction, and high economic value, the Space Hub Sutherland is assessed to be of **high sensitivity**.

OWPL’s discussions with Orbex indicate that operation of the offshore Project is not expected to disrupt Space Hub Sutherland’s space launches. OWPL will be required to develop internal procedures to ensure that personnel working within the offshore Project remain outside temporary exclusion zones implemented during launch events, or take appropriate safety measures, during launch sequences; however, no operational impact on Space Hub Sutherland launches is expected. There will be coordination between OWPL and Space Hub Sutherland, and as launches will only take place up to a maximum of 12 times per year, the temporary obstruction will occur occasionally / intermittently for short periods of time at a low intensity. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.



Evaluation of significance

Taking the high sensitivity of Space Hub Sutherland and the low magnitude of impact, the overall effect is considered to be **minor** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
High	Low	Minor

Impact significance - NOT SIGNIFICANT

20.6.2 Potential effects during operation and maintenance

The potential obstruction to other sea user receptors could occur from the presence of infrastructure as well as implementation of safety distances around maintenance vessels during maintenance and/or repair activities. An assessment of potential effects from these activities, using the worst case scenario presented in 20.5.5 is provided below.

20.6.2.1 Obstruction of Pentland Floating Offshore Wind Farm (PFOWF) activities

As detailed in section 20.6.1.1, PFOWF is assessed to be of **high sensitivity**. The obstruction during the operation and maintenance stage will be reduced compared to the construction stage as obstruction will only occur occasionally / intermittently for short periods of time during the annual / bi-annual routine inspections and ad-hoc repairs, and largely in association with the offshore export cables. Communication will also be maintained with PFOWF throughout the lifecycle of the offshore Project to reduce any potential obstruction caused. It is expected that only discrete areas would be inspected, maintained, or repaired at any one time, and only during major maintenance activities would a 500 m safety zone be implemented. The offshore Project will be appropriately marked on the Admiralty Charts by the UKHO and there will be appropriate lighting to ensure that other sea user receptors are aware of the offshore Project and can plan ahead accordingly. Taking this into account with the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.

Evaluation of significance

Taking the high sensitivity of PFOWF and the low magnitude of impact, the overall effect of obstruction of PFOWF activities during the operation and maintenance stage is considered to be **minor** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
High	Low	Minor

Impact significance - NOT SIGNIFICANT



20.6.2.2 Obstruction of subsea cables

As detailed in section 20.6.1.2, subsea cables are assessed to be of **high sensitivity**. The construction timeline for the SHET-L Caithness to Orkney HVAC Link is not known, and therefore, it is possible that construction could overlap with the operation and maintenance stage of the offshore Project, or the subsea cable could be operational. The obstruction during the operation and maintenance stage will be reduced compared to the construction stage as obstruction will only occur occasionally / intermittently for short periods of time during the annual / bi-annual routine inspections and ad-hoc repairs. Given there will be cable crossing and proximity agreement(s) in place, and prior notice sent out, it is expected that the subsea cable will have the ability to adapt around the operation and maintenance activities (ESCA, 2016; TCE, 2012a,b). Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.

For all other cables identified within the offshore study area, which are already existing or proposed, any obstruction is expected to be negligible as they do not overlap with the offshore Project. Combined with the short duration and intermittent frequency of any operation and maintenance activities associated with the offshore Project, the impact is defined as being of **negligible magnitude**.

Evaluation of significance

Taking the high sensitivity of the SHET-L Caithness to Orkney HVAC Link and the low magnitude of impact, the overall effect of obstruction during operation and maintenance is considered to be **minor** and **not significant** in EIA terms.

For all other cables in the other sea users offshore study area, taking the high sensitivity and negligible magnitude of impact, the overall effect of obstruction during operation and maintenance is considered to be **negligible** and **not significant** in EIA terms.

Receptor	Sensitivity	Magnitude of impact	Consequence
SHET-L Caithness to Orkney HVAC Link	High	Low	Minor
All other cables within the other sea users offshore study area	High	Negligible	Negligible

Impact significance - NOT SIGNIFICANT

20.6.2.3 Obstruction of recreational and tourism activities

As detailed in section 20.6.1.3, recreational and tourism activities are assessed to be of **low sensitivity**. Obstruction to recreational activities is most likely to result from the offshore export cables that lie within the region of higher marine recreational activity inshore. Therefore, no permanent obstruction from the presence of infrastructure is anticipated. Obstruction from operation and maintenance activity may result from the presence of vessels and the implementation of safety zones during annual / bi-annual inspections and ad-hoc repairs resulting in restricted access. However, this will be of a short-duration and of an intermittent frequency. There will be notices issued prior to operation and



maintenance activity, and therefore it is expected that recreational and tourism activities will be able to plan and re-route around these works.

Obstruction to recreational activities may also occur as a result of changes to waves and wave height. The potential impact of the offshore Project on waves and wave height has been assessed in chapter 8: Marine physical and coastal processes, and it was concluded that the impact of the offshore Project on wave parameters is minimal.

Therefore, no significant disruption to any recreational activities is anticipated. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.

Evaluation of significance

Taking the low sensitivity of recreational and tourism activities and the low magnitude of impact, the overall effect of obstruction during the operation and maintenance stage is considered to be **negligible** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
Low	Low	Negligible

Impact significance - NOT SIGNIFICANT

20.6.2.4 Obstruction of Dounreay NPDE and Vulcan NRTE seabed decommissioning activities

As detailed in section 20.6.1.3, Dounreay NPDE and Vulcan NRTE are assessed to be of **high sensitivity**. Obstruction will only occur occasionally / intermittently for short periods of time during the annual / bi-annual routine inspections and ad-hoc repairs. The main obstruction from operation and maintenance activity would be work done on the offshore export cables near the landfall area. The landfall and offshore export cables do not overlap with the Dounreay or Vulcan sites, and therefore, once operational, any potential obstruction of access would be limited. Otherwise, the maintenance activities will be located offshore away from these nuclear facilities. Given that the Dounreay NPDE and Vulcan NRTE decommissioning will also be primarily land-based at the onshore facilities, there should not be any resulting loss of access. There will also be communication regarding operation and maintenance activity with MoD and DSRL. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **negligible magnitude**.



Evaluation of significance

Taking the high sensitivity of Dounreay NPDE and Vulcan NRTE and the negligible magnitude of impact, the overall effect is considered to be **negligible** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
High	Negligible	Negligible

Impact significance - NOT SIGNIFICANT

20.6.2.5 Obstruction or interference to the Space Hub Sutherland

As detailed in section 20.6.1.5, Space Hub Sutherland is assessed to be of **high sensitivity**. During the operation and maintenance stage of the offshore Project there will be less frequent activity compared to the construction stage. As the launches are planned to only occur up to 12 times per year, the chances of the launches overlapping with periods of offshore activity will be reduced (compared to the construction stage of the offshore Project)

As noted in section 20.6.1.5, consultation with Orbex indicates that no disruption to the Space Hub Sutherland activities from the offshore Project is anticipated. There will be coordination between OWPL and Space Hub Sutherland, and internal procedures will be developed to ensure that personnel working within the offshore Project remain outside temporary exclusion zones, or take appropriate safety measures, during launch sequences. Taking this into account and the embedded mitigation listed in section 20.5.4, the impact is defined as being of **low magnitude**.

Evaluation of significance

Taking the high sensitivity of Space Hub Sutherland and the low magnitude of impact, the overall effect of obstruction or interference to the Space Hub Sutherland project is considered to be **negligible** and **not significant** in EIA terms.

Sensitivity	Magnitude of impact	Consequence
High	Negligible	Negligible

Impact significance - NOT SIGNIFICANT

20.6.3 Potential effects during decommissioning

The preferred decommissioning option will be for as close to full removal as possible, whilst recognising that this will be subject to assessments and consultation closer to the time of decommissioning, as part of the production and approval of the offshore Project’s Decommissioning Programme. Temporary obstruction to other sea users during decommissioning may occur as a result of the presence of vessels and safety zones associated with the decommissioning activities. This temporary obstruction is considered to be of the same or less magnitude as construction activities.



It is expected that WTGs and OSP structures (including foundations) will be removed in full, with the exception of piled foundations, which may be cut to approximately 1 m below the seabed, and scour protection, which may be left to preserve the marine habitat that has established over the lifetime of the offshore Project (specific details will be confirmed in the decommissioning programme). Sections of cable may also be left *in situ*, with ends being cut as close to the seabed as possible and buried to reduce any hazards posed to other marine users.

Considering the above, the sensitivities and impact magnitude for decommissioning are considered to be comparable to those identified for the construction stage. It is also worth noting that some of the existing other sea users' assets could also be decommissioned ahead of the offshore Project, and therefore, there would be no impact. Therefore, in the absence of detailed information regarding decommissioning works, the impacts during the decommissioning of the offshore Project are considered analogous with, or likely less than, those of the construction stage.

20.6.4 Summary of potential effects

A summary of the outcomes of the assessment of potential effects from the construction, operation and maintenance, and decommissioning of the offshore Project is provided in Table 20-12.

No significant effects on other sea user receptors have been identified. Therefore, secondary mitigation measures in addition to the embedded mitigation measures listed in section 20.5.4 (embedded mitigation) are not considered necessary.



Table 20-12 Summary of potential effects

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY REQUIREMENTS	MITIGATION	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Construction and decommissioning							
Temporary obstruction	PFOWF	High	Low	Minor (not significant)	None required above embedded mitigation measures.		Minor (not significant)
Temporary obstruction	Subsea cables – SHET-L Caithness to Orkney HVAC Link	High	Low	Minor (not significant)	None required above embedded mitigation measures.		Minor (not significant)
	Subsea cables – all other cables within the other sea users offshore study area	High	Negligible	Negligible (not significant)			Negligible (not significant)
Temporary obstruction	Recreation and tourism	Low	Low	Negligible (not significant)	None required above embedded mitigation measures.		Negligible (not significant)
Temporary obstruction	Dounreay NPDE and Vulcan NRTE	High	Negligible	Negligible (not significant)	None required above embedded mitigation measures.		Negligible (not significant)



POTENTIAL EFFECT	RECEPTOR	SENSITIVITY RECEPTOR	OF	MAGNITUDE OF IMPACT	OF	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY REQUIREMENTS	MITIGATION	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Temporary obstruction or interference	Space Hub Sutherland	High		Low		Minor (not significant)	None required above embedded mitigation measures.		Minor (not significant)
Operation and maintenance									
Obstruction	PFOWF	High		Low		Minor (not significant)	None required above embedded mitigation measures.		Minor (not significant)
Obstruction	Subsea cables – SHET-L Caithness to Orkney HVAC Link	High		Low		Minor (not significant)	None required above embedded mitigation measures.		Minor (not significant)
	Subsea cables – all other subsea cables in the other sea users offshore study area	High		Negligible		Negligible (not significant)	None required above embedded mitigation measures.		Negligible (not significant)
Obstruction	Recreation and tourism	Low		Low		Negligible (not significant)	None required above embedded mitigation measures.		Negligible (not significant)
Obstruction	Dounreay NPDE and Vulcan NRTE seabed decommissioning activities	High		Negligible		Negligible (not significant)	None required above embedded mitigation measures.		Negligible (not significant)



POTENTIAL EFFECT	RECEPTOR	SENSITIVITY RECEPTOR	OF	MAGNITUDE OF IMPACT	OF	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY REQUIREMENTS	MITIGATION	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Obstruction	Space Hub Sutherland	High		Negligible		Negligible (not significant)	None required above embedded mitigation measures.		Negligible (not significant)



20.7 Assessment of cumulative effects

20.7.1 Introduction

Potential impacts from the offshore Project have the potential to interact with those from other projects (developments), plans and activities, resulting in cumulative impacts on other sea user receptors. The general approach to the cumulative effects assessment is described in chapter 7: EIA methodology and further detail is provided below.

The list of relevant developments for inclusion within the cumulative effects assessment is outlined in Table 20-13. This has been informed by a screening exercise, undertaken to identify relevant developments for consideration within the cumulative effects assessments for each EIA topic, based on defined Zol.

The only potential impact of the offshore Project on other sea user receptors identified across the construction, operation and maintenance, and decommissioning stages was temporary or permanent obstruction (see Table 20-13). As this impact will be highly localised to the offshore Project, developments that overlap with the offshore Project are considered to have the potential to result in cumulative impacts on other sea user receptors. In addition, the following developments have been identified as potentially acting cumulatively with the offshore Project:

- PFOWF – as the offshore export cable corridor for PFOWF may cross the SHET-L Caithness to Orkney HVAC Link, potentially resulting in cumulative impacts on the SHET-L cable; and
- The transmission infrastructure for the connection to the Flotta Hydrogen Hub – the connection to the Flotta Hydrogen Hub is a separate development and will be subject to separate applications for consent in due course. Accordingly the details currently available for connection to the Flotta Hydrogen Hub have been considered in the cumulative assessment only.

The following developments have been excluded from the cumulative effects assessment:

- All existing developments at the time of the assessment – as these are considered to be part of the existing baseline as described in section 20.4.3;
- Dounreay and Vulcan nuclear facilities – as the majority of decommissioning activities will be conducted onshore, the potential for cumulative obstruction with the offshore Project is low; and
- Space Hub Sutherland – as all developments nearby to the offshore Project are located inshore or to the east, they are unlikely to be located within the Space Hub Sutherland launch exclusion zone, and therefore, there is a limited potential for cumulative obstruction with the offshore Project, either spatially or sequentially. Please note that the cumulative effects from Space Hub Sutherland on vessel transits are assessed in chapter 15: Shipping and navigation.

In addition, the following impacts have been excluded from the cumulative effects assessment:

- Obstruction to Dounreay NPDE and Vulcan NRTE seabed decommissioning activities – as the majority of decommissioning activities will be onshore, the effects from the offshore Project, as well as other cumulative developments will be negligible; and



- Obstruction or interference to the Space Hub Sutherland – as it is expected that other developments would adhere to launch exclusion zones, when in place, no cumulative effects are anticipated.

Table 20-13 List of developments considered for the other sea users cumulative impact assessment

LOCATION	DEVELOPMENT TYPE	DEVELOPMENT NAME	DISTANCE TO OAA (KM)	DISTANCE TO OFFSHORE ECC (KM)	STATUS	CONFIDENCE ⁹
Dounreay, Caithness to Warebeth, Orkney	Subsea cable	power SHET-L Caithness to Orkney HVAC Link	22	0	Consented	Medium
West of Orkney and Scapa Flow	OWF export cable	West of Orkney Windfarm – transmission connection to the Flotta Hydrogen Hub	0	0	Pre - application	Low
Dounreay, Caithness	OWF	PFOWF ¹⁰	20	2	Consented	Medium

20.7.2 Cumulative construction effects

20.7.2.1 Temporary obstruction to the Pentland Floating Offshore Wind Farm (PFOWF)

The PFOWF offshore export cable corridor overlaps with the SHET-L Caithness to Orkney HVAC Link. There is the potential for temporary obstruction on PFOWF from these developments in addition to that resulting from the offshore Project. However, as described for the offshore Project alone, the PFOWF will be constructed ahead of the offshore Project, and therefore, any access requirements will be occasional / intermittent for operation and maintenance activities. It is expected that SHET-L will employ similar embedded mitigations as those being employed

⁹ Confidence ratings have been applied to each cumulative development where: 'Low' = pre-application or application, 'Medium' = consented and 'High' = under construction or operational.

¹⁰ Pentland Floating Offshore Wind Farm (PFOWF) will incorporate the currently consented Pentland Floating Offshore Wind Demonstrator turbine, and hence PFOWF only has been considered. The PFOWF Section 36 Consent and Marine Licence was granted for 10 years. However, the cumulative effects assessment has been based on the Project Design Envelope, as specified within the EIA, and therefore, an operational life of up to 30 years for the PFOWF has been considered. Since consent was granted in June 2023, PFOWF have submitted a Screening Report to MD-LOT with the intention to request a variation to the Section 36 Consent. This variation will incorporate refinements to the Project Design Envelope and to extend the operational life to 25 years.



by the offshore Project, such as the distribution of NtMs, and will share plans and construction schedules with HWL to ensure all works are undertaken safely and with minimal disruption. Considering this, the effect remains as being of **low magnitude** for the PFOWF, and the overall effect remains as **minor** and **not significant**.

20.7.2.2 Temporary obstruction to subsea cables

As described above, the SHET-L Caithness to Orkney HVAC Link overlaps with the PFOWF offshore export cables. The transmission connection to the Flotta Hydrogen Hub also overlaps with the SHET-L Caithness to Orkney HVAC Link to the west of Hoy, Orkney. However, there will be ongoing dialogue between OWPL, SHET-L, and HWL to minimise any disruption caused, with crossing and proximity agreements in place. Furthermore, PFOWF will be constructed ahead of the offshore Project, reducing the extent of any cumulative obstruction. Therefore, any additional obstruction to the SHET-L Caithness to Orkney HVAC Link from nearby developments is expected to be minimal.

As access to the existing cables within the other sea users offshore study area will be required only occasionally / intermittently, the potential for a cumulative impact is also low.

Therefore, the impact of temporary obstruction to subsea cables during construction remains as being of **low magnitude** for the SHET-L Caithness to Orkney HVAC Link and the overall effect remains as **minor** and **not significant**. For all other subsea cables, the impact remains as being of a **negligible magnitude**, and the overall effect remains as **negligible** and **not significant**.

20.7.2.3 Temporary obstruction of recreational and tourism activities

The SHET-L Caithness to Orkney HVAC Link may be under construction at the same time as the offshore Project, with the potential for a spatial overlap of safety zones, either simultaneously or sequentially if the construction periods overlap. This could result in additional temporary obstruction due to restricted areas and limited access; however, this would be highly localised. It is expected that SHET-L will also provide advance notice of construction activities, and therefore marine recreation and tourism activities could be planned around construction. As PFOWF will be constructed ahead of the offshore Project, reducing the extent of any cumulative effect. Therefore, in the context of the wider area available for marine recreation and tourism, the cumulative effects remain as being of **low magnitude** for recreational and tourism activities, and the overall effect remains as **negligible** and **not significant**.

20.7.3 Cumulative operation and maintenance effects

20.7.3.1 Obstruction to the Pentland Floating Offshore Wind Farm (PFOWF) activities

As the timelines for the construction of the SHET-L Caithness to Orkney HVAC Link are not well known, there is the potential for these activities to overlap with the operation and maintenance stage of the offshore Project. This could result in additional obstruction to PFOWF. However, as described for the offshore Project alone, as obstruction to PFOWF would mainly result from ad-hoc operation and maintenance activities associated with the offshore export cables, any obstruction would be less frequent than what would be experienced during construction (described in section 20.6.1.1). Therefore, any potential for a cumulative impact will be less than what has been described for



construction and the impact remains as being of **low magnitude**. The overall effect remains as **minor** and **not significant**.

20.7.3.2 Obstruction to subsea cables

There is potential for additional obstruction to the SHET-L HVAC Link during operation and maintenance stage of the offshore Project due to the overlap with the PFOWF offshore export cables and the Orkney transmission connection to the Flotta Hydrogen Hub. However, both PFOWF and the offshore Project will be operational, and therefore, any potential for a cumulative impact will be less than what has been described for construction. The presence of vessels or safety zones will be highly localised and intermittent.

There is no potential for a cumulative impact to arise on existing subsea cables in the other sea users offshore study area. The distance between these subsea cable developments and the offshore Project limits any potential for an overlapping obstruction with other developments, either spatially or sequentially.

Therefore, the impact remains as being of **low magnitude** for the SHET-L Caithness to Orkney HVAC Link and the overall effect remains as **minor** and **not significant**.

20.7.3.3 Obstruction of recreational and tourism activities

The activities associated with SHET-L Caithness to Orkney HVAC Link have the potential to further obstruct recreational activities during planned maintenance events and ad-hoc repairs associated with the offshore Project. Overall, there will be less frequent activity associated with the offshore Project, and this reduces the potential for a cumulative impact when compared to the assessment for construction, and this would be reduced even further if the SHET-L Caithness to Orkney HVAC Link is already operational when the offshore Project is within its operation and maintenance stage. Therefore, marine recreation and tourism activities are expected to be able to plan around the activities associated with both the offshore Project and the SHET-L Caithness to Orkney HVAC Link, given that prior notices are issued by SHET-L and OWPL. Furthermore, the activities associated with the SHET-L Caithness to Orkney HVAC Link are not expected to result in changes to wave parameters, so the potential for a cumulative impact on waves is not anticipated and marine recreation and tourism activities (e.g. surfing) will not be obstructed. Therefore, the impact remains as being of **low magnitude** for recreational activities, and the overall effect remains as being **negligible** and **not significant**.

20.7.4 Cumulative decommissioning effects

As there is limited information on the decommissioning of the offshore Project and around the lifecycle of other developments, it is not possible to provide a meaningful cumulative assessment. However, the cumulative effects are expected to be less than or equal to the construction stage.

A Decommissioning Programme will be developed and approved pre-construction to address the principal decommissioning measures for the offshore Project and will be written in accordance with applicable guidance. The Decommissioning Programme will detail the environmental management, and schedule for decommissioning and will be reviewed and updated throughout the lifetime of the offshore Project to account for changing best practices.



20.7.5 Summary of cumulative effects

A summary of the outcomes of the assessment of cumulative effects for the construction, operation and maintenance, and decommissioning stages of the offshore Project is provided in Table 20-14.



Table 20-14 Summary of assessment of cumulative effects

POTENTIAL IMPACT	RECEPTOR	SENSITIVITY RECEPTOR	OF	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Construction and decommissioning							
Temporary obstruction	PFOWF	High		Low	Minor (not significant)	None required above embedded mitigation measures.	Minor (not significant)
Temporary obstruction	Subsea cables – SHET-L Caithness to Orkney HVAC Link	High		Low	Minor (not significant)	None required above embedded mitigation measures.	Minor (not significant)
	Subsea cables – all other cables within the other sea users offshore study area	High		Negligible	Negligible (not significant)		Negligible (not significant)
Temporary obstruction	Recreational and tourism activities	Low		Low	Negligible (not significant)	None required above embedded mitigation measures.	Negligible (not significant)



POTENTIAL IMPACT	RECEPTOR	SENSITIVITY RECEPTOR	OF	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Operation and maintenance							
Obstruction	PFOWF	High		Low	Minor (not significant)	None required above embedded mitigation measures.	Minor (not significant)
Obstruction	Subsea cables – SHET-L Caithness to Orkney HVAC Link	High		Low	Minor (not significant)	None required above embedded mitigation measures.	Minor (not significant)
	Subsea cables – all other cables within the other sea users offshore study area	High		Negligible	Negligible (not significant)		Negligible (not significant)
Obstruction	Recreational and tourism activities	Low		Low	Negligible (not significant)	None required above embedded mitigation measures.	Negligible (not significant)



20.8 Inter-related effects

Inter-related effects are the potential effects of multiple impacts, affecting one receptor or a group of receptors. Inter-related effects include interactions between the impacts of the different stages of the offshore Project (i.e. interaction of impacts across construction, operation and maintenance and decommissioning), as well as the interaction between impacts on a receptor within an offshore Project stage. The potential inter-related effects for other sea user receptors are described below.

20.8.1 Inter-related effects between offshore Project stages

The majority of any potential obstruction to other sea user receptors would occur during the construction stage, when the number of vessels and safety zones present in the offshore Project area would be highest. There is no potential for the effects during other stages of the offshore Project to interact in a way that would result in combined effects of greater significance than the assessments for each individual stage.

20.8.2 Inter-related effects within an offshore Project stage

There are no anticipated inter-related effects within an offshore Project stage on other sea user receptors, as each impact assessed in this chapter is for a separate, non-related receptor.

20.9 Whole Project assessment

The onshore Project is summarised in chapter 5: Project description and a summary of the Onshore EIA Report is provided in chapter 21: Onshore EIA summary. The onshore aspects of the Project have been considered in relation to the impacts assessed in section 20.6.

The works for the onshore Project could disturb the onshore activities associated with the other sea users receptors described within this chapter, such as marine recreation and tourism activities at the coast, the decommissioning works at Dounreay NPDE and Vulcan NRTE, and the construction works for the SHET-L Caithness to Orkney HVAC Link. However, it is expected that any disturbance from the onshore Project will be mitigated in a similar manner to any disruption from the offshore Project (e.g. through consultation with relevant parties ahead of any onshore works and seeking agreements on procedures to reduce the potential for any disruption). Therefore, considering the localised and temporary nature of any disruption associated with both the onshore and offshore Project, there is no potential for the onshore Project to exacerbate any of the effects assessed within this chapter.

20.10 Transboundary effects

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

There is no potential for transboundary impacts upon other sea user receptors due to the construction, operation and maintenance, and decommissioning of the offshore Project. The potential impacts are localised and are not



expected to affect other EEA states. Therefore, transboundary effects for other sea user receptors do not need to be considered further.

20.11 Summary of mitigation and monitoring

No secondary mitigation, over and above the embedded mitigation measures proposed in section 20.5.4, is either required or proposed in relation to the potential effects of the offshore Project on other sea users as no adverse significant impacts are predicted.

No monitoring of potential impacts on (over and above ongoing consultation) other sea users is proposed.



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20.13 Abbreviations

ACRONYM	DEFINITION
BT	British Telecommunications
CES	Crown Estate Scotland
DSG	Dounreay Stakeholder Group
DSRL	Dounreay Site Restoration Limited
ECC	Export Cable Corridor
EEA	European Economic Area
EIA	Environmental Impact Assessment
EMEC	European Marine Energy Centre Ltd.
ERCoP	Emergency Response Cooperation Plan
ESCA	European Subsea Cables Association
FEPA	Food and Environment Protection Act
HVAC	High Voltage Alternating Current
HWL	Highland Wind Limited
ICPC	International Cable Protection Committee
JRC	Joint Radio Company
KIS-ORCA	Kingfisher Information Service – Offshore Renewable and Cable Awareness
km	kilometre
kV	kilovolt



ACRONYM	DEFINITION
MARPOL	The International Convention for the Prevention of Pollution from
MD-LOT	Marine Directorate - Licencing Operations Team
MoD	Ministry of Defence
MS-LOT	Marine Scotland - Licensing Operations Team
MSS	Marine Scotland Science
MW	megawatt
NDA	Nuclear Decommissioning Authority
NMPI	National Marine Plan Interactive
NPDE	Nuclear Power Development Establishment
NRTE	Naval Reactor Test Establishment
NtM	Notice to Mariners
OAA	Option Agreement Area
OIC	Orkney Islands Council
OSP	Onshore Substation Platform
OWPL	Offshore Wind Power Limited
PEXA	Practice and Exercise Area
PFOWF	Pentland Floating Offshore Wind Farm
PO	Plan Option
Ro-ro	Roll On / Roll Off



ACRONYM	DEFINITION
ROV	Remotely Operated Vehicle
RYA	Royal Yachting Association
SAS	Surfers Against Sewage
SEPA	Scottish Environment Protection Agency
SHET-L	Scottish Hydro Electric Transmission Limited
SMRTS	Scottish Marine Recreation and Tourism Survey
SOPEP	Shipboard Oil Pollution Emergency Plans
SSE	Scottish and Southern Electricity
SSEN	Scottish and Southern Electricity Networks
TCE	The Crown Estate
THC	The Highland Council
UKHO	United Kingdom Hydrographic Office
UXO	Unexploded Ordnance
WTG	Wind Turbine Generator
ZoI	Zones of Influence



20.14 Glossary

TERM	DEFINITION
Telecommunication link	Also known as wireless links and include signals from one device to another without being connected by wires, such as: <ul style="list-style-type: none">• Microwave communications;• Television reception;• Radio reception; and• Cellular telephone service
Space port	Launch or receive site for spacecraft or satellites into Earth's orbit.
Floating offshore wind farm	A wind farm comprised of WTGs supported by floating structures rather than fixed structures, typically anchored to the seabed by mooring lines.
Telecommunication cables	Cables that transmit electromagnetic waves that exchange information over significant distances.
Power cables	Cables that transmit electric power.