

**BRITISH TELECOMMUNICATIONS PLC**

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**Scotland - Northern Ireland (Scot-NI) 3 and 4  
Replacement Cables**

**Marine Environmental Appraisal - Non-Technical Summary**

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# 1. INTRODUCTION

British Telecommunications plc (BT plc) is proposing to install two replacement telecommunications cables between Scotland and Northern Ireland, known as Scotland-Northern Ireland 3 and Scotland-Northern Ireland 4 (Scot-NI 3 and Scot-NI 4). Figure 1-1 (Drawing P2302-LOC-001) shows the location of the proposed Scot-NI 3 and Scot-NI 4 cables.

Telecommunications cables provide essential services and connectivity which is of vital importance as the demand for data and communication increases. Submarine fibre optic cables support approximately 99% of all international data transmission and are central to the world's and UK's telecommunication networks. These cables are laid on the seabed and have the capability to carry significant data capacity between continents, countries, and national regions. Submarine cables are intrinsic to the functionality of UK society today and are used throughout the UK's core telecoms networks. The Covid-19 pandemic has sharply brought into focus our reliance on resilient and safe subsea networks to work remotely and communicate across the world.

The existing BT telecommunication cables, Scot-NI 1, and Scot-NI 2, crossing the Irish Sea are nearing the end of their functional life and replacement of this critical infrastructure is required to maintain telecommunication services. BT propose to install two replacement fibre optic cables, Scot-NI 3, and Scot-NI 4 to replace the existing Scot-NI 1 and Scot-NI 2 cables.

The application corridors are each 500m wide, and are as follows:

- Scot-NI 3 - approximately 42km in length from mean-high water springs (MHWS<sup>1</sup>) Portpatrick, Scotland, to MHWS at Donaghadee, Northern Ireland.
- Scot-NI 4 - approximately 85km in length from MHWS Girvan, Scotland to MHWS Larne (Drains Bay), Northern Ireland.

The Project comprises the installation of two separate marine fibre-optic telecommunication cables and associated activities.

Under the Marine (Scotland) Act 2010, the installation of submarine cables in Scottish waters requires a Marine Licence from Marine Scotland.

In Northern Irish waters, the Department of Agriculture, Environment and Rural Affairs (DAERA) Marine and Fisheries Division are responsible for marine licensing within territorial waters under the Marine and Coastal Access Act 2009. Under the Act, a Marine Licence application is required for the installation of submarine cables.

Four marine licence applications (two to Marine Scotland and two to DAERA) will be submitted covering each cable within each jurisdiction. To support the application, a Marine Environmental Appraisal (MEA) Report has been prepared. The MEA Report provides an overview of the environmental conditions within the proposed application corridors and identifies and assesses potential effects from the proposed installation of Scot-NI 3 and Scot NI 4.

This document is the Non-Technical Summary (NTS) of the MEA. The purpose of this NTS is to provide a concise description of the environmental appraisal and its findings. This NTS is structured in-line with the MEA Report and provides a summary of the existing environment, potential effects, and any mitigation proposed to reduce effects where required.

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<sup>1</sup> Average tide height throughout the year

# SCOTLAND - NORTHERN IRELAND TELECOMMUNICATION CABLES

## LOCATION OVERVIEW Route Options

Drawing No: P2302-LOC-001

B

### Legend

- BMH Location
- - - Existing SCOT-NI1
- - - Existing SCOT-NI2
- SCOT-NI3 Proposed Cable Corridor
- SCOT-NI4 Proposed Cable Corridor
- - - Scotland/Northern Ireland Adjacent Waters Limit

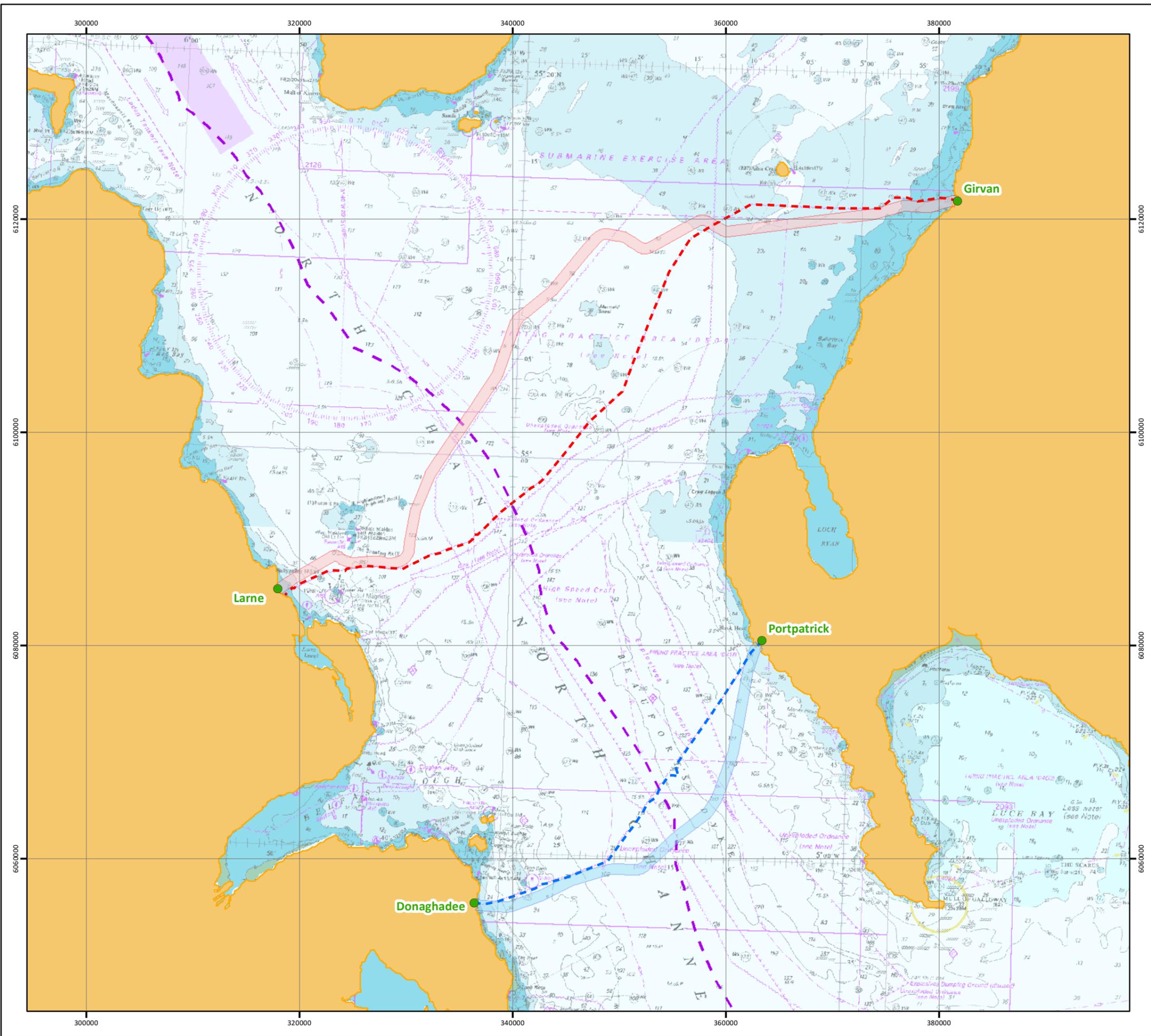


NOTE: Not to be used for Navigation

<b>Date</b>	19 November 2020
<b>Coordinate System</b>	WGS 1984 UTM Zone 30N
<b>Projection</b>	Transverse Mercator
<b>Datum</b>	WGS 1984
<b>Data Source</b>	UKHO; ESRI; GEBCO; MarineFind;
<b>File Reference</b>	J:\P2302\Mxd\01_LOC\ P2302-LOC-001.mxd
<b>Created By</b>	Chris Dawe
<b>Reviewed By</b>	Chris Carroll
<b>Approved By</b>	Paula Daghish



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## 2. PROJECT DESCRIPTION

### 2.1 Summary

The cable types to be used are armoured fibre optic cables that are between 25mm and 46mm in diameter. They will be buried into the seabed for most of the route by an installation plough, which is expected to proceed at a rate of up to 600m/hr. The target burial depth is 1m offshore and 2m in the intertidal area (MLW). Where burial is insufficient due to hard ground or rock, the cable may be protected using articulated pipe and surface laid for short sections.

The cables will have to cross several existing power and telecommunications cables along the route. To protect the cables at these crossings Uraduct® (if required or similar) will be fitted to the cables and the cables will be buried using a trenching remotely operated vehicle.

No further cable protection measures have been proposed, however contingency external cable protection measures of rock bags, concrete matting or rock berm are an option which may be used if required.

Due to the relatively small size of the fibre optic cables and the narrow trench cut by the plough, sediment along the installation route should backfill almost immediately after the cable is laid. It is generally recognised that the impacts of submarine telecoms cables on the environment are very low due to the small scale and temporary nature of the operations.

### 2.2 Indicative Programme

Following approval of the Marine Licence applications, cable installation is currently planned to commence in the 3rd quarter 2021 and be complete by the end of the year. Timings may vary due to weather and/or other operational reasons.

The exact timing of the landfall works will be dependent upon the offshore works, marine licensing and onshore permits and conditions and notifications will be issued at agreed schedules prior to operations closer to the project commencement.

### 2.3 Route Preparation

Prior to cable installation the installation route will be cleared and prepared. Out of service (OOS) cables that are no longer in use, that are present within the application corridor, will be cut, cleared, and ends made safe by using chain or clump weights to minimise the risk posed to fishing gear.

A grapnel will be pulled along the seabed along the cable routes. This process is referred to as a Pre-Lay Grapnel Run (PLGR) and aims to clear any obstacle that could obstruct cable installation activities such as abandoned fishing nets, ropes, and lines or other such debris. Occasional targeted boulders may be relocated if required.

### 2.4 Cable Landing and Beach Works

A beach and dive team, along with the necessary equipment and vessels to carry out the cable landings, will be mobilised to each site prior to the arrival of the cable ship. A pre-lay diver swim survey of each route will be carried out prior to the arrival of the cable ship, from the Low Water Mark (LWM) to the agreed plough down point /proposed position of the cable ship. Key positions, such as, alter courses (A/C), holding anchors, other in service and out of service cables, will be marked with temporary buoys or similar. Beach inspections/walk overs will be undertaken prior to any operations taking place and photographic and video records taken.

Once the cable ship has arrived, a messenger line will be transferred from the cable ship to the shore end support vessel. This messenger line will be transferred to shore and used to pull a haul rope ashore. The cable will be attached to the haul rope and floated/pulled ashore. Floats will be applied at regular intervals to the cable to help the pull-in process. Onshore the cable will be secured in a beach manhole. After removing the cable floats, the cable will drop to the seabed and divers will check that the cable is lying satisfactorily on the seabed.



The beach manhole is typically the transition point between the marine cable and the terrestrial cable. Three existing beach manholes from Scot-NI 1 and Scot-NI 2 will be utilised, with a new beach manhole constructed at the Larne landfall.

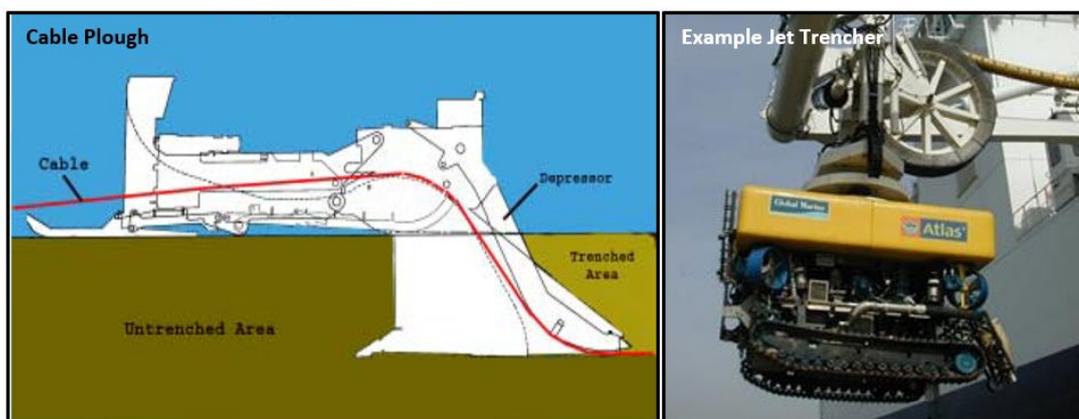
A duct will provide access to the beach manhole. This will be exposed on the beach using an excavator. Once the cable is secured within the duct and beach manhole a trench to a depth of up to 2m will be dug across the beach using the excavator. The cable will then be lowered into the bottom of the trench. The cable will be protected with articulated pipe (described in Section 2.7 below). The trench will then be filled in, post installation burial conducted to the plough down position if appropriate, restoring the beach profile and all machinery, equipment and personnel removed from site.

Cable pull in is likely to take up to 2 days per landfall and completion of the cable burial and restoration of the beach will take up to 5 days per landfall.

## 2.5 Cable Installation

Cable installation activities will be undertaken on a 24-hour basis which will minimise disruption to other sea users. Installation activities will be undertaken by a cable ship with support provided by an ancillary support vessel and if necessary, tugs in areas of high current speeds. For all shore end operations small boats (RIBs or similar) will be used to support the cable pull-in and the lowering of the cable to the seabed. Although rock protection is not planned, if it is required then a specialist rock placement vessel will be utilised. Notices to Mariners will be issued and vessels will be requested to stay 1 nautical mile (NM) distant from the cable ship due to the restricted manoeuvrability of the vessel during operations. All Project vessels will comply with the International Regulations for Preventing Collisions at Sea (COLREGS). Guard vessels may be deployed as required to ensure the cable installation proceeds as safely and efficiently as possible.

Once the cable ship arrives at site, the first cable end will be floated to shore and landed. The cable ship will then lay away from the landing site and use a plough to bury the cable. Where conditions are unsuitable for plough burial, the cable will be surface laid. This could be in areas of hard seabed or at cable crossings. Measures are taken during surface lay to ensure the cable naturally conforms to the seabed undulations. Post-lay inspection surveys of the surface laid cable are undertaken to determine if any areas are suitable for burial using a remotely operated vehicle jet trencher. This tool pumps seawater into the seabed, fluidising the sediment, and allowing the cable to sink into the seabed naturally.



At the landing sites, the water is too shallow to allow the cable ship and plough to approach. Therefore, the cable is floated in and with the aid of divers a jet burial tool is used to bury the cable to a target burial depth of 1m. At this time equipment will be present on the beach and small support vessels will be present in the nearshore waters.

Once inshore burial operations are complete a video survey will be undertaken by divers.

## 2.6 Cable Crossings

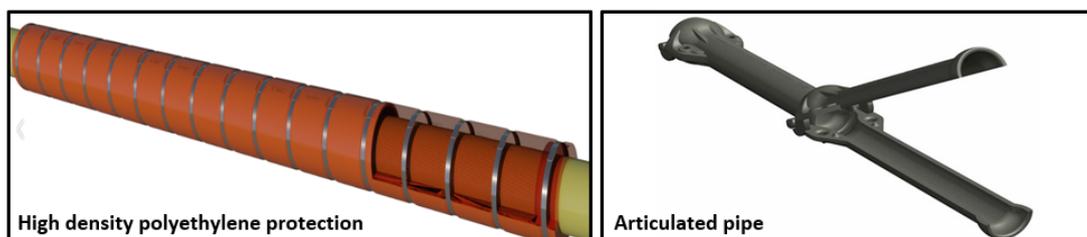
The proposed Scot-NI 3 cable will cross three existing cables. These include one telecoms cable in Scottish waters (Scot-NI 1), one telecom cable (Hibernia Atlantic) and the Western Link power cable in Northern Irish waters.

The proposed Scot-NI 4 cable will cross three telecoms cables and the Western Link power cable in Scottish waters. In Northern Irish waters it will cross one telecommunications cable.

## 2.7 Proposed Integral Cable Protection

Where the proposed cables cross existing power and telecoms cables high density polyethylene protection (HDPE), a synthetic material, may be fitted to the cable as integral protection. This will protect the cables from abrasion and impact.

Articulated pipe, cast iron steel pipes, will be fitted to the cables from the end of the beach manhole to approx. 10m water depth contour (or other position as appropriate). The articulated pipe will provide additional protection and stability to the cable in areas where it may move during storm conditions. In some cases, the articulated pipe may require clamping and pinning to the seabed to ensure tidal conditions do not cause abrasion damage. The clamping and pinning operations will be conducted by divers.



## 2.8 Contingency External Cable Protection Measures

Whilst external cable protection measures are not planned, Marine Scotland and DAERA require that all Marine Licence applications cover all eventualities with respect to deposits on the seabed. In areas where cable burial is not possible due to seabed conditions the application has assessed the deposit

of concrete mattresses, rocks bags and rock placement (berms). The requirement for such external cable protection will only be known following post installation survey operations.

There is currently no plan for boulder repositioning, but it may be necessary to relocate a limited number of targeted boulders from the cable route to allow adequate burial to be achieved during cable installation. If required, boulders will be lifted and moved off the line of the cable route and repositioned within the application corridor.

## 3. ENVIRONMENTAL ASSESSMENT METHODOLOGY

To assess the significance of the effect of cable installation activities on the environment the MEA followed a stepped process:

- Characterisation of the baseline environment and sensitive receptors using publicly available information, survey data and consultation;
- Establish the potential pressures<sup>2</sup> from the Project and their respective zones of influence<sup>3</sup>;
- Evaluate the significance of the effect taking into consideration the zone of influence, the duration, frequency of the pressures and the sensitivity, recoverability, and importance of the receptor; and
- Establish mitigation (where required).

Effects which are Negligible, Not Significant and Minor typically do not require mitigation measures other than compliance with environmental statute and best practice. Effects which are classified as Moderate or above would typically be unacceptable without the implementation of project specific mitigation designed to avoid, abate, or reduce the significance of the effect.

## 4. SUMMARY OF ASSESSMENT

The environmental assessment has been informed by consultation, publicly available information and supporting studies and surveys. The key supporting studies, provided as Appendices to the MEA, are:

- Intertidal Survey Reports
- Protected Sites Screening Assessment
- Navigation Risk Assessment
- Fisheries Activity Study
- Marine Archaeology Technical Report
- Underwater Noise Assessment

The tables below provide a summary of the baseline, the potential pressures and effects evaluated in the assessment and the assessment conclusions.

<sup>2</sup> Pressures are the mechanism through which an activity influences any part of the ecosystem. The nature of the pressure is determined by the activity type, intensity, and distribution.

<sup>3</sup> The spatial extent over which Project activities are predicted to influence sensitive receptors.

## 4.1 SCOT-NI 3 Assessment Summary

Environmental Receptor	Summary of the Baseline – SCOT-NI 3	Potential Pressure	Potential Effect	Significance of Effect - SCOT-NI 3	
				Scotland	NI
Physical Processes	<p>The application corridor crosses the North Channel and is characterised by strong tides, average wave heights and prevailing winds from the west and south-west.</p> <p>Water depth ranges from 0m at the Scottish coastline and Northern Irish coastlines to a maximum of 267m due to the presence of Beauforts’s Dyke a submarine channel in the middle of the North Channel.</p> <p>The beach in Port Mora (Scottish landfall) is characterised by pebbles, cobbles, and rocks and fine to coarse sand. Just off the beach, the seabed is primarily gravels and sand with areas of boulders and clay. The seabed sediments along the proposed Scot-NI 3 route are primarily sands and gravels. The beach in Donaghadee (Northern Irish landfall) is rocky and pebbly with a bank of cobbles towards the back of the beach.</p>	Abrasion/disturbance at the surface of the substratum.	Disturbance to the seabed	Negligible	Negligible
		Penetration/disturbance below the surface of the seabed, including abrasion		Negligible	Negligible
		Physical change (to another seabed type)	Reduction in extent of seabed sediments	Not Significant	Not Significant
Benthic and Intertidal Ecology	<p>Intertidal habitats at Port Mora include rock and sedimentary habitats. Subtidal habitats present within the application corridor are primarily subtidal sediments including sand and mixed sediment ranging from fine to coarse. Three subtidal habitats listed on Annex I of the Habitats Directive were identified, including bedrock reef within Scottish waters and bedrock reef, stony reef, and sandbanks within Northern Irish waters. Intertidal habitats present at Donaghadee includes seaweed communities, sedimentary habitats, and rocky habitats.</p>	Abrasion/disturbance at the surface of the substratum.	Mortality, injury or disturbance to benthic habitats and species	Negligible	Negligible
		Penetration/disturbance below the surface of the seabed, including abrasion		Negligible	Negligible
		Physical change (to another substratum type)	Reduction in extent of sedimentary habitats – Contingency external cable protection measures: rock berm, rock bags or mattresses	Minor	Minor
Fish and Shellfish	<p>The application corridor is a spawning and nursery area for anglerfish, Atlantic cod, Atlantic mackerel, common ling, common skate, European hake, European plaice, European sprat, haddock, Norway lobster, spurdog and whiting. Shellfish present within the Scot-NI 3 application corridor are likely to include brown crab, velvet crab, lobster, king scallop (also known as great scallop) and Norway lobster (also known as Nephrops). Several elasmobranchs (sharks, skates, and rays) are also likely to be present</p>	Physical change (to another substratum type)	Reduction in sedimentary habitats	Negligible	Negligible
		Penetration/disturbance below the surface of the seabed, including abrasion	Disturbance of species with demersal life stages	Negligible	Negligible

Environmental Receptor	Summary of the Baseline – SCOT-NI 3	Potential Pressure	Potential Effect	Significance of Effect - SCOT-NI 3	
				Scotland	NI
	within or adjacent to the application corridor including angel shark, basking shark, common skate, common smoothhound, cuckoo ray, lesser spotted dogfish, nursehound, porbeagle shark, short fin mako, spotted ray, spurdog, thornback ray, tope shark and white skate. Several species of conservation importance to Europe, the UK, Scotland, and Northern Ireland are located within or in proximity to the Scot-NI 3 application corridor.				
Marine Mammals and Reptiles	<p>Marine mammals that may be present within and adjacent to the Scot-NI 3 and Scot-NI 4 application corridors include cetaceans (whales, dolphins, and porpoises), pinnipeds (seals) and chelonians (marine turtles). Marine mammals known to occur in the Project Area include harbour porpoise, bottlenose dolphin, short-beaked common dolphin, minke whale, Risso's dolphin, white-beaked dolphin, killer whale and humpback whales, harbour seal and grey seal. Five species of marine turtles have been recorded in UK waters, with leatherback turtle occasionally sighted in the Irish Sea.</p> <p>Numbers of seal species are highest in the coastal areas of Scotland and Northern Ireland as these are sites used for resting, breeding, and having pups.</p> <p>All species of whales, dolphins and porpoises and the leatherback turtle are designated as European Protected Species (EPS). Harbour porpoise, harbour seal and grey seal are designated features of the North Channel Special Area of Conservation (SAC), Outer Ards Area of Special Scientific Interest (ASSI) and the Maidens SAC, respectively.</p>	Visual and above water noise disturbance	Disturbance to seals at haul out sites	Not Significant	Not Significant
Birds	<p>20 protected sites within 15km of the application corridor that are designated to protect a total of 27 bird species have been identified. Bird species include auks, cormorants and shags, divers, grebes, gulls, oystercatchers, petrels and shearwaters, plover, sandpipers, snipes and phalaropes, swans, ducks and geese and tern species. Species such as guillemot, red-throated diver, manx shearwater, golden plover and all four UK tern species are listed as Annex I species under the Birds Directive. Several of the species identified are Birds of Conservation Concern (BOCC) for the UK and Ireland, a UK Biodiversity Action Plan Species and listed on the Scottish Biodiversity List and as Northern Ireland Priority Species.</p>	Visual and above water noise disturbance	Disturbance to breeding and wintering bird species	No potential for Likely Significant Effects (LSE)/Appropriate Assessment (AA) not required	No potential for LSE/AA not required
		Changes in supporting habitat and prey availability	Reduction in supporting habitat and prey for breeding and wintering bird species	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site

Environmental Receptor	Summary of the Baseline – SCOT-NI 3	Potential Pressure	Potential Effect	Significance of Effect - SCOT-NI 3	
				Scotland	NI
Protected Sites and Species	A total of 17 protected sites were identified within the search areas for the Scot-NI 3 application corridor. The application corridor passes directly through the Outer Ards Special Protected Area (SPA), Ramsar and Area of Special Scientific Interest (ASSI), the North Channel Special Area of Conservation (SAC) and the East Coast Marine potential Special Protection Area (pSPA).	Penetration/disturbance below the surface of the seabed, including abrasion	Reduction in protected habitat and mortality, injury, or displacement of associated species	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site
		Siltation rate changes (including smothering).		No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site
		Physical change (to another seabed type).		No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site
Marine Archaeology	Several archaeological assets were recorded at the Portpatrick landfall, with a potential new site being identified on the beach at Port Kale. There was no pattern to metal detections at the landfall with a perpendicular line of metal detections associated with a buried cable. Along the Scot-NI 3 application corridor, 11 geophysical anomalies with the potential to be of archaeological interest (i.e., wreck) were identified. Of the anomalies identified, two were categorised as high potential and nine medium potential for archaeological assets. No known archaeological assets were identified within the desk-based assessment and no features of archaeological potential were identified at the Donaghadee landfall.	Abrasion/disturbance at the surface of the substratum	Damage to archaeological assets	Not Significant	Not Significant
		Penetration/disturbance below the surface of the seabed, including abrasion	Damage to archaeological assets	Not Significant	Not Significant
Shipping and Navigation	Vessel density is expressed as the number of hours per month that ships spend in each square kilometre. Vessel densities are determined using a ships Automatic Identification System (AIS) which contains the locations of the ship. A total vessel density of 31,670 hours per month was recorded across the Scot-NI 3 application corridor in 2019. Vessel density was primarily composed of cargo vessels (31%) and fishing vessels (11%). The	Displacement of vessels due to avoidance of Project vessels	Temporary displacement or restricted access	As Low As Reasonably Practicable (ALARP)	ALARP
		Vessel Collision	Damage to vessels and injury to personnel	ALARP	ALARP

Environmental Receptor	Summary of the Baseline – SCOT-NI 3	Potential Pressure	Potential Effect	Significance of Effect - SCOT-NI 3	
				Scotland	NI
	busiest shipping months are between May and September. Vessel density increases within Northern Irish waters associated with Belfast Harbour and associated shipping lanes.	Project vessels blocking navigational features	Temporary displacement or restricted access	ALARP	ALARP
		Fishing interaction with surface laid cable	Snagging or dragging of surface laid cable	ALARP	ALARP
		Accidental anchoring on surface laid cable	Damage to surface laid cable	ALARP	ALARP
		Extreme weather conditions	Cable installation risk	ALARP	ALARP
Commercial Fishing	Fishing effort within and in proximity to the Scot-NI 3 application corridor is dominated by potting, trapping, and dredging and the most targeted species include scallops, herring, and hake. Dredging for scallops is undertaken within Scottish waters with demersal trawling for hake and haddock occurring within the deep middle section of the North Channel. Within Northern Irish coastal waters, potting and trapping of crab and lobster is the main fishing method. Fishing effort is seasonal with fishing activity lower between December and June with a peak between August and November.	Temporary displacement/ restricted access	Reduction in fishing activity and increase in fishing effort	Not Significant	Not Significant
		Increased snagging risk	Damage to fishing gear	Not Significant	Not Significant
Other Sea Users	The application corridor is located within two navy department exercise areas within Scottish and Northern Irish waters. There is one closed disposal site within the application corridor (Beaufort's Dyke) which was historically used for the disposal of munitions and military waste between 1920 and 1976. There are no offshore windfarms planned or in operation within proximity to the application corridor. No pipelines were identified within 10km of the application corridor. Recreational activity varies being of medium intensity within coastal areas but of lower intensity further offshore.	Temporary displacement / restricted access	Disruption to activities	Negligible	Negligible
		Damage to third-party assets	Physical damage to third-party assets	Negligible	Negligible
Cumulative Effects	A review of other projects and plans <sup>4</sup> within the application corridor identified only the two existing cables (Western Link HVDC power cable	Abrasion/disturbance at the surface of the substratum.	Disturbance to the seabed, support habitats and species	Not Significant	Not Significant

<sup>4</sup> Several data sources including the Marine Scotland Marine Licence Application Public Register, Marine Scotland National Marine Plan, Department of Agriculture, Environment and Rural Affairs Marine Licensing Public Register, DAERA Northern Ireland Marine Plan and SEAFISH Kingfisher Information Service were reviewed for other projects and plans that had the potential to interact with Scot-NI 3 and Scot-NI 4

Environmental Receptor	Summary of the Baseline – SCOT-NI 3	Potential Pressure	Potential Effect	Significance of Effect - SCOT-NI 3	
				Scotland	NI
	and Hibernia Atlantic telecom cable) that will be crossed by the Scot-NI 3 cable as having the potential to interact with the installation.	Penetration/disturbance below the surface of the seabed, including abrasion		Not Significant	Not Significant
		Physical change (to another seabed type)		Not Significant	Not Significant

## 4.2 SCOT-NI 4 Assessment Summary

Environmental Receptor	Summary of the Baseline – SCOT-NI 4	Potential Pressure	Potential Effect	Significance of Effect SCOT-NI 4	
				Scotland	NI
Physical Processes	Scot-NI 4 also crosses the North Channel with the maximum water depth reaching 169m. The landfall in Girvan (Scotland) consists of shingle which becomes sandier towards the high-water mark. The seabed sediments offshore are primarily composed of sands and gravels with areas of silt and clay. The landfall in Larne (Northern Ireland) is steep and composed of boulders and cobbles.	Abrasion/disturbance at the surface of the substratum.	Disturbance to the seabed	Negligible	Negligible
		Penetration/disturbance below the surface of the seabed, including abrasion		Negligible	Negligible
		Physical change (to another seabed type)	Reduction in extent of seabed sediments	Not Significant	Not Significant
Benthic and Intertidal Ecology	Intertidal habitats present at Girvan primarily include sedimentary habitats. Subtidal habitats present within the application corridor are primarily subtidal sediments including sand and mud ranging from fine to coarse in Scottish waters. In Northern Irish waters, subtidal habitats were predominantly a mix of rocky habitats and subtidal sediment. Three subtidal Annex I habitats were identified, including bedrock reef within Scottish waters and bedrock reef, stony reef and Maerl beds within Northern Irish waters. Intertidal habitats present at Larne comprise of rocky and sedimentary habitats.	Abrasion/disturbance at the surface of the substratum.	Reduction in extent of sedimentary habitats – Contingency external cable protection measures: Rock berm, rock bags, concrete mattresses	Minor	Minor
		Penetration/disturbance below the surface of the seabed, including abrasion	Mortality, injury or disturbance to benthic habitats and species	Negligible	Negligible
		Physical change (to another substratum type)	Reduction in extent of sedimentary habitats	Not Significant	Not Significant
Fish and Shellfish	The application corridor is a spawning area for anglerfish, Atlantic cod, Atlantic herring, common ling, common skate, European hake, European sprat, Norway lobster, sandeel, saithe, spurdog and whiting. Shellfish and elasmobranchs present within the Scot-NI 4 application corridor are the same as reported for Scot-NI 3. Several species of conservation importance to Europe, the UK, Scotland, and Northern Ireland are located within or in proximity to the Scot-NI 4 application corridor.	Physical change (to another substratum type)	Reduction in sedimentary habitats	Negligible	Negligible
		Penetration/disturbance below the surface of the seabed, including abrasion	Disturbance of species with demersal life stages	Negligible	Negligible
Marine Mammals and Reptiles	Marine mammals that may be present within and adjacent to the Scot-NI 3 and Scot-NI 4 application corridors include cetaceans (whales, dolphins, and porpoises), pinnipeds (seals) and chelonians (marine turtles). Marine	Visual and above water noise disturbance	Disturbance to seals at haul out sites	Not Significant	Not Significant

Environmental Receptor	Summary of the Baseline – SCOT-NI 4	Potential Pressure	Potential Effect	Significance of Effect SCOT-NI 4	
				Scotland	NI
	<p>mammals known to occur in the Project Area include harbour porpoise, bottlenose dolphin, short-beaked common dolphin, minke whale, Risso's dolphin, white-beaked dolphin, killer whale and humpback whales, harbour seal and grey seal. Five species of marine turtles have been recorded in UK waters, with leatherback turtle occasionally sighted in the Irish Sea.</p> <p>Numbers of seal species are highest in the coastal areas of Scotland and Northern Ireland as these are sites used for resting, breeding, and having pups.</p> <p>All species of whales, dolphins and porpoises and the leatherback turtle are designated as European Protected Species (EPS). Harbour porpoise, harbour seal and grey seal are designated features of the North Channel Special Area of Conservation (SAC), Outer Ards Area of Special Scientific Interest (ASSI) and the Maidens SAC, respectively.</p>				
Birds	<p>7 protected sites within 15km of the application corridor that are designated to protect a total of 25 species of bird have been identified. Bird species include auks, cormorants and shags, divers, gannets, grebes, gulls, petrels and shearwaters, sandpipers, snipes and phalaropes, swans, ducks and geese and tern species. As above, several species are afforded international or national protected status.</p>	Visual and above water noise disturbance	Disturbance to breeding and wintering bird species	No potential for LSE/AA not required	No potential for LSE/AA not required
		Changes in supporting habitat and prey availability	Reduction in supporting habitat and prey for breeding and wintering bird species	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site
Protected Sites and Species	<p>A total of 11 protected sites were identified with the search areas for the Scot-NI 4 application corridor. The application corridor passes directly through the Maidens SAC, East Coast Marine pSPA and the Clyde Sea Sill Nature Conservation Marine Protected Areas (NCMPA).</p>	Penetration/disturbance below the surface of the seabed, including abrasion	Reduction in protected habitat and mortality, injury, or displacement of associated species	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site
		Siltation rate changes (including smothering).		No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site

Environmental Receptor	Summary of the Baseline – SCOT-NI 4	Potential Pressure	Potential Effect	Significance of Effect SCOT-NI 4	
				Scotland	NI
		Physical change (to another seabed type).		No potential for LSE/AA not required and will not negatively impact the integrity of any protected site	No potential for LSE/AA not required and will not negatively impact the integrity of any protected site
Marine Archaeology	No archaeological assets were identified on the beach at Girvan, though two assets were identified within the desk-based assessment just beyond the beach including Shalloch Castle and cropmarks at Horse Rock. A total of seven geophysical anomalies were identified along the Scot-NI 4 application corridor. Of these, four were classified of high archaeological potential and three of medium potential. No archaeological assets were identified within the study area at the Larne landfall.	Abrasion/disturbance at the surface of the substratum	Damage to archaeological assets	Not Significant	Not Significant
		Penetration/disturbance below the surface of the seabed, including abrasion	Damage to archaeological assets	Not Significant	Not Significant
Shipping and Navigation	A total vessel density of 42,239 hours per month were recorded across the Scot-NI 4 application corridor in 2019. Vessel density was primarily comprised of fishing vessels (29%), cargo vessels (22%) and passenger vessels (19%). The busiest shipping period is between May and September.	Displacement of vessels due to avoidance of Project vessels	Temporary displacement or restricted access	ALARP	ALARP
		Vessel Collision	Damage to vessels and injury to personnel	ALARP	ALARP
		Project vessels blocking navigational features	Temporary displacement or restricted access	ALARP	ALARP
		Fishing interaction with surface laid cable	Snagging or dragging of surface laid cable	ALARP	ALARP
		Accidental anchoring on surface laid cable	Damage to surface laid cable	ALARP	ALARP
		Extreme weather conditions	Cable installation risk	ALARP	ALARP
Commercial Fishing	Fishing activity within and in proximity to the Scot-NI 4 application corridor is dominated by potting, dredging, and trawling with the most targeted species being Norway lobster, scallops, and razor clam. Dredging for scallops and demersal trawling is common within the Firth of Clyde and in Scottish coastal waters with demersal trawling also occurring within Beaufort Dyke. In Northern Irish coastal waters, potting for crab and lobster is the most prevalent fishing method. Fishing effort varies along	Temporary displacement/restricted access	Reduction in fishing activity and increase in fishing effort	Not Significant	Not Significant
		Increased snagging risk	Damage to fishing gear	Not Significant	Not Significant

Environmental Receptor	Summary of the Baseline – SCOT-NI 4	Potential Pressure	Potential Effect	Significance of Effect SCOT-NI 4	
				Scotland	NI
	the application corridor but primarily peaks between June and August, with the lowest catch rates between December and April.				
Other Sea Users	The application corridor passes through five navy department exercise areas in Scottish waters and two navy department exercise areas in Northern Irish waters. The Girvan disposal site is located roughly 1.4km from the application corridor and a closed disposal site is within 1km of the Larne landfall. There are no offshore windfarms planning or in operation within proximity to the application corridor. The Scotland to Northern Ireland pipeline is located roughly 1.5km from but does not cross the application corridor within Northern Irish waters. Recreational activity varies being of medium intensity within coastal areas but of lower intensity further offshore.	Temporary displacement / restricted access	Disruption to activities	Negligible	Negligible
		Damage to third-party assets	Physical damage to third-party assets	Negligible	Negligible
Cumulative Effects	A review of other projects and plans <sup>5</sup> within the application corridor identified only the four existing cables (Western Link HVDC power cables, Sirius North, Hibernia Atlantic and Lanis-3 telecommunications cables) that will be crossed by the Scot-NI 4 cables as having the potential to interact with the installation.	Abrasion/disturbance at the surface of the substratum.	Disturbance to the seabed, support habitats and species	Not Significant	Not Significant
		Penetration/disturbance below the surface of the seabed, including abrasion		Not Significant	Not Significant
		Physical change (to another seabed type)		Not Significant	Not Significant

<sup>5</sup> Several data sources including the Marine Scotland Marine Licence Application Public Register, Marine Scotland National Marine Plan, Department of Agriculture, Environment and Rural Affairs Marine Licensing Public Register, DAERA Northern Ireland Marine Plan and SEAFISH Kingfisher Information Service were reviewed for other projects and plans that had the potential to interact with Scot-NI 3 and Scot-NI 4

## 5. PROPOSED MITIGATION

The Project has been developed through an iterative process which involved seeking to avoid or reduce potential environmental effects through routing of the marine cable. This was the first Project specific step in mitigating potential effects by seeking to avoid or reduce environmental disturbance.

Embedded mitigation measures which form part of the design are an inherent part of the project. These are constraints built into the design of the Project and described in the MEA to demonstrate that the Applicant will comply with national and international statute and best practice guidance as determined by the cable industry as the basic standard for how to proceed on a project. The assessment assumes that these embedded mitigation measures will be implemented when determining the significance of the potential effects.

Table 5-1 presents the embedded mitigation considered during the assessment.

**Table 5-1 Embedded mitigation measures – project design**

ID	Receptor	Embedded mitigation	Source
COMPLIANCE (COMP) 1	Benthic and Intertidal Ecology	Ballast water discharges from Project vessels will be managed under the International Convention for the Control and Management of Ships' Ballast Water and Sediments standard.	MEA Report
COMP 2	Benthic and Intertidal Ecology	The latest guidance from the GB non-native species secretariat (2015) will be followed and a Biosecurity Plan produced pre-installation. All vessels and equipment will be clean and free from debris and fouling.	MEA Report
COMP 3	Benthic and Intertidal Ecology	Project vessels will be equipped with waste disposal facilities (sewage treatment or waste storage) to IMO MARPOL Annex IV Prevention of Pollution from Ships standards.	MEA Report
COMP 4	Benthic and Intertidal Ecology	Control measures and shipboard oil pollution emergency plans (SOPEPs) will be in place and adhered to under MARPOL Annex I requirements for all project vessels.	MEA Report
COMP 5	Commercial Fishing; Shipping and Navigation; Other sea users	The dropped object procedure will be followed, and any unrecovered dropped objects must be reported to the relevant authority (MS LOT or DAERA) using their dropped object procedure, within 24 hours of the project becoming aware of an incident.	Appendix E: NRA
COMP 6	Fish and Shellfish (Basking Shark), Commercial Fishing; Shipping and Navigation; Other sea users	Project vessels will comply with the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) – as amended	Appendix E: NRA
COMP 7	Commercial Fishing; Shipping and Navigation; Other sea users	'As-laid' co-ordinates of the cable route will be recorded and circulated to the UK Hydrographic Office (UKHO), KIS-ORCA service and any other relevant authorities. Cables will be marked on Admiralty Charts and KIS-ORCA charts (paper and electronic format). A Notice to Mariners (NtM) will be distributed to stakeholders following the completion of installation.	Appendix C: FLMAP; Appendix E: NRA
COMP 8	Commercial Fishing; Shipping and Navigation; Other sea users	Should the project create potential hazards to shipping (such as large rock berms) along the cable routes, stakeholders will be informed immediately via a NtM to ensure safety is upheld.	Appendix C: FLMAP
BEST PRACTICE (BP) 1	Commercial Fishing; Shipping and Navigation; Other sea users	Early consultation with relevant contacts to notify of impending activity.	Appendix E: NRA

ID	Receptor	Embedded mitigation	Source
BP2	Commercial Fishing; Shipping and Navigation; Other sea users	Notice to Mariners will be published to inform sea users via Notices to Mariners, Kingfisher Bulletins and MCA and UKHO. Vessels will be requested to remain at least 1NM away from cable vessels during installation operations.	Appendix E: NRA
BP3	Commercial Fishing; Shipping and Navigation; Other sea users	Guard Vessels may be deployed as required to ensure that cable installation proceeds as safely and efficiently as possible.	Appendix E: NRA
BP4	Commercial Fishing; Shipping and Navigation; Other sea users	Appropriate cable protection to be installed as applicable along the cable route including over crossed assets if required.	Appendix E: NRA
BP5	Commercial Fishing; Shipping and Navigation; Other sea users	An onshore Fishing Liaison Officer (FLO) will be provided for the project. The FLO will follow the Fishing Liaison Mitigation Action Plan (FLMAP). The FLO will continue in this role during installation process.	Appendix E: NRA
BP6	Commercial Fishing; Shipping and Navigation; Other sea users	The UKHO will be informed of installation activities in order to issue Maritime Safety Information (MSI) broadcasts as appropriate.	Appendix E: NRA
BP7	Commercial Fishing; Shipping and Navigation; Other sea users	Guidance provided by the UKHO and International Convention for the Safety of Life at Sea (SOLAS) recommend that fishing vessels should avoid trawling over installed seabed infrastructure (UKHO 2020). Vessels are advised in the Mariners Handbook not to anchor or fish (trawl) within 0.25NM of cables.	Appendix E: NRA
BP 8	Archaeology	Archaeological exclusion zones (AEZs) have been assigned to anomalies. These have been avoided where possible and where not possible the surface area crossed by the cable has been minimised to protect potential archaeological features. Additionally, for the Portpatrick shore end for high archaeological AEZs anomalies (CA_3002 & CA_3003) divers will buoy off visible extent.	Appendix G: Marine Archaeology Technical Report
BP 9	Marine Birds; Marine mammals; Fish and shellfish; Protected sites	The survey and installation vessels will be moving at a maximum speed of 6 knots during installation activities. This will allow any rafting seabirds, marine mammals, or basking sharks time to disperse before the vessel arrives. When not conducting installation activities, vessels will avoid bird rafts where operationally possible and safe to do so.	Appendix H: EPS and Protected Species Risk Assessment
BP 10	Commercial Fishing	Disruption claims will be handled in accordance with ESCA standard operating practices.	Appendix C: FLMAP
BP 11	Commercial Fishing; Shipping and Navigation; Other sea users	If cables are buoyed off whilst the vessel departs the area, buoy positions will be notified to the NTM distribution list including Kingfisher and 0.25NM clearance will be requested.	Appendix E: NRA
BP12	Benthic and Intertidal Ecology	Micro-routing has been used where possible to avoid or minimise the surface area the application corridor routes through higher-grade annex I reef and sandbank habitat.	Project design
BP13	Benthic and Intertidal Ecology	Construction vehicle movement will avoid sensitive areas as far as practical; Beach profile will be restored following cable installation.	Project design

## 6. CONCLUSION

99% of international communications are carried by the network of cables under the sea. The reliance and critical importance of resilient telecommunications networks have been brought sharply into focus during the Covid-19 pandemic. Without reliable access to the internet, the ability for communications traffic, economic activity, emergency and essential services and remote working would be severely limited. The ability to communicate across the world without travelling has further implications on reducing carbon footprint and mitigating the effects of climate change.

The installation of the Scot-NI 3 and Scot-NI 4 replacement cables is of vital importance to maintaining essential services and connectivity between Scotland and Northern Ireland, and as part of the network of global communications. It is generally recognised that the installation of telecommunications cables has benign effects in the marine environment. This applies to the Scot-NI Project with the main findings of the assessment summarised below:

- Disruption to shipping and commercial fishing will be minimised through compliance with international regulations such as COLREGS and the use of Notice to Mariners. All risks to shipping have been reduced to As Low As Reasonably Practicable (ALARP);
- The Protected Sites Assessment concluded that there would be no Likely Significant Effects (LSE) on protected sites identified and therefore no requirement for Appropriate Assessment;
- Effects to archaeological assets have been minimised through cable routing, avoiding archaeological exclusion zones (AEZ) where possible and where not possible limiting the length of cable within the AEZ to protect potential archaeological assets; and
- No project specific mitigation has been identified as being required, with effects from the installation of Scot-NI 3 and Scot-NI 4 being Negligible and Not Significant.

**In conclusion, the effects from the Scot-NI Project cable installation have been assessed as not significant and adequately controlled by project design, best practice, and environmental compliance measures.**