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Eriskay-Barra Project Description

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1. ACRONYMS & ABBREVIATIONS

Abbreviation	Definition
ALARP	As Low As Reasonably Practical
AP	Articulated Pipe
Briggs	Briggs Marine Contractors – Principal Contractor
BT	British Telecom
CBRA	Cable Burial Risk Assessment
CEMP	Construction Environmental Management Plan
CFE	Controlled Flow Excavator
CLV	Cable Lay Vessel
CPSP	Cable Protection and Stabilisation Plan
CR	Client Representation
DDC	Drop Down Camera
DB	Dimension Beam
DL	Dimension Length
DP	Dynamic Positioning
DSV	Dive Support Vessel
DTS	Desk Top Study
DWA	Double Wired Armour
EB-1	Eriskay-Barra 1
EB-2	Eriskay-Barra 2
EB-3	Eriskay-Barra 3
FLMAP	Fishing Liaison Mitigation Action Plan
FO	Fibre Optic
GT	Gross tonnage
HA	Hazard Assessment
HVAC	High Voltage Alternating Current
IPCC	International Cable Protection Committee (ICPC)
LAT	Lowest Astronomical Tide
MAG	Magnetometry
MCA	Maritime and Coastguard Agency
MEA	Marine Environmental Appraisal
MHWS	Mean High Water Spring
MLWS	Mean Low Water Spring
MPA	Marine Protected Area
MBES	Multibeam Echo Sounder
NAVTEX	Navigational telex

NtM	Notice to Mariners
OBS	On Bottom Stability
OCT	Open Cut Trench
OoS	Out of Service
PLGR	Pre-Lay Grapnel Run
PMF	Priority Marine Features
PPY	Polypropylene Yarn
RA	Risk Assessment
RPL	Route Position List
ROV	Remotely Operated Vehicle
RMF	Risk Management Framework
SAC	Special Areas of Conservation
SBP	Sub Bottom Profiling
SEPA	Scottish Environmental Protection Agency
SHEPD	Scottish Hydro Electric Power Distribution
SIMOPS	Simultaneous Operations
SPA	Special Protection Areas
SSEN	Scottish & Southern Energy Networks - Client and Principal Designer
SSS	Side Scan Sonar
SSSI	Site of Special Scientific Interest
TDM	Touch Down Monitoring
TJP	Tranisition Joint Pit
UAV	Unmanned Aerial Vehicle
USBL	Ultra-Short Baseline
UXO	Unexploded Ordinance
WD	Water Depth

2. GLOSSARY

Defined Term	Meaning
Contractor	Briggs Marine Contractors Ltd. Hereafter referred to as BRIGGS.
Company	SSEN – Scottish & Southern Electricity Networks. Hereafter referred to as the Company.
Subcontractor	An organisation with whom Contractor places a contract as opposed to a Purchase Order.
Supplier	An organisation with whom Contractor places a Purchase Order for materials, equipment, or services.

3. INTRODUCTION

3.1. Overview

Scottish and Southern Electricity Networks (SSEN) operating under the licensee's name of Scottish Hydro Electric Power Distribution (SHEPD) are responsible for monitoring the efficiency and integrity of the submarine electricity cable network which provide power supplies to 60 Scottish Islands.

The Eriskay-Barra 2 (EB-2) 11kV subsea cable provides the sole network connection to the Isle of Barra in the Outer Hebrides of Scotland and was installed in 2013, supplying 1025 customers. Inspections carried out on E-B2 cable found and assessed it to be in poor external condition and requires replacement. The proposed route is between Coilleag a' Phrionnsa beach on the Isle of Eriskay and Cidhe Eolaigearraidh on the Isle of Barra. The approximate cable length between Eriskay and Barra is 9.7km.

There are two subsea power cables between the landfalls already. Eriskay-Barra 1 (EB-1) was installed in 1979 and has since faulted. Eriskay-Barra 2 cable will remain operational, and the replacement cable Eriskay-Barra 3 (EB-3) will be installed to augment the existing cable. E-B3 will be a 33kV cable which will be initially operated at 11kV. There is also a BT owned fibreoptic cable installed which uses the same landfall on Eriskay, however uses a more southerly landing on Barra.

This project description sets out the methodology proposed for undertaking the cable replacement, as well as details on the protection and stabilisation methods. The works are scheduled to take place in summer and early autumn 2026. The estimated installation duration for the various cable installation activities can be found in Section 8.

3.2. Replacement Cable Corridor

The Application Corridor for the replacement cable (EB-3) is shown in red in Figure 1 (Drawing Reference: CB0294-2028). The Application Corridor within which the cable will be installed is 170m wide at its narrowest point and 590m at its widest point. All deposits as listed in Section 9 will be installed within this application corridor. It is estimated the proposed new cable will be 9.7km in length and the deepest sections of the route is 13m water depth. The application corridor coordinates can be found in 0 Appendix 1.

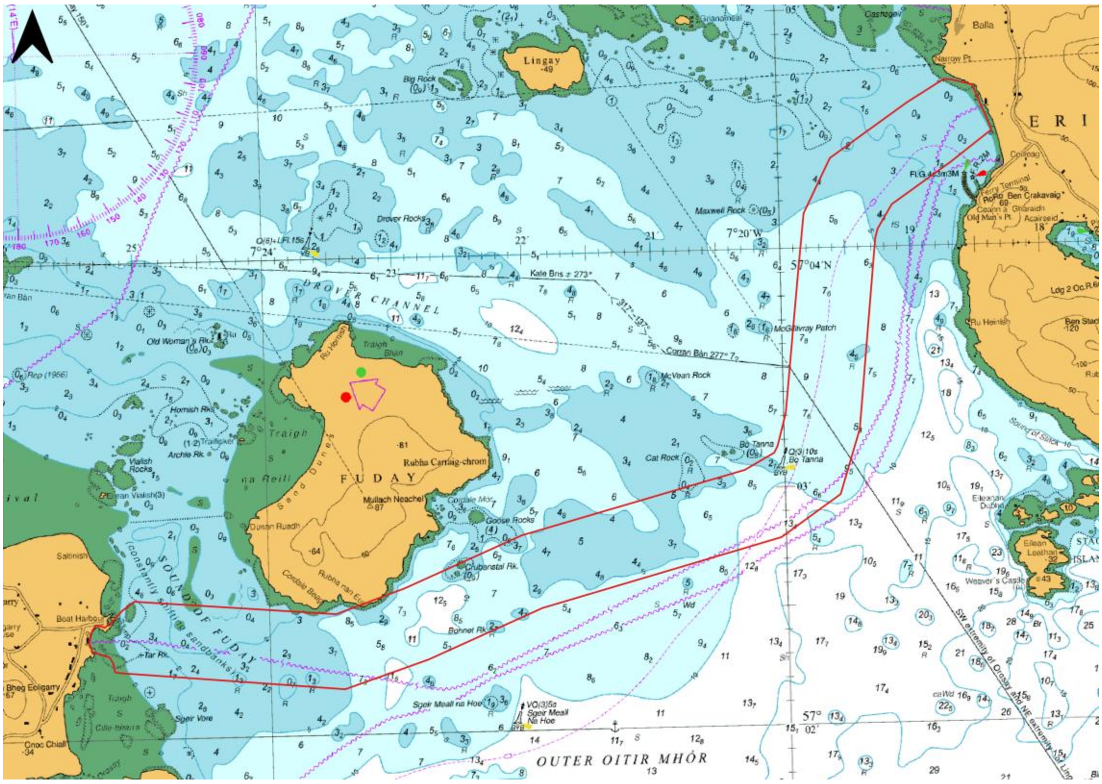


Figure 1 - Eriskay-Barra 3 Application Corridor

SHEPD commissioned a Cable Route Desktop Study (DTS) (Report Reference: H24024-REP-002 Eriskay to Barra DTS Rev01). This study considered the potential risks to the replacement cable along the entire route and alternative routes. The Project Description is based on the worst-case scenario within this corridor and the proposed route is being designed through a route engineering process.

3.3. Consideration of Alternatives

Following routine inspection of the existing 11kV EB-2 submarine cable, the following options were considered and assessed based on engineering feasibility, investment and benefits such as network resilience.

Option 1 – Do Minimum – Replace on Failure

This option would maintain the existing EB-2 cable with minimal intervention until the asset has faulted. At the time of failure, the subsea cable would be replaced by a new cable. During this period customers could be supplied through Barra Power Station, however this would result in 3rd party generation being constrained during this time. This option was not chosen as although initial costs can be avoided – this would incur reputational damage from constrained supply to customers as well as additional costs from replacement under emergency, and costs for impact and generation.

Option 2 – Planned replacement with similar sized cable

This option would replace the existing 11kV EB-2 cable prior to the end of its lifecycle – using a similar cable and design, disconnecting the old cable and using existing tie-in points on the onshore network. This would reduce the circuit's probability of failure. This option was not chosen as it does not meet the need for the long-term plan of providing a 33kV capable supply to Barra or realise the same benefits that an additional cable would provide.

Option 3 – Planned replacement with a larger 300mm^2 cable

This option would replace the existing 11kV EB-2 subsea cable prior to the end of its lifecycle – using a larger cable size which would cater to additional or unforeseen growth. This option was not chosen as it does not provide the enhanced security of supply that an additional cable would provide.

Option 4 – Augmentation with a similar sized cable

This option would install a new 11kV subsea cable while retaining the existing 11kV EB-2 subsea cable in service. This would incur additional costs in installation and connecting into the 11kV network on Eriskay and Barra as well as additional costs for inspections and maintenance. However, these costs could be reduced when considering inspections and maintenance in parallel and utilising existing onshore infrastructure to tie in the new cable. This option was not selected, as while it provides two circuits and improves network security, it does not meet the requirement for future demand growth and network reinforcement.

Option 5 – Augmentation with a larger 300mm^2 cable

This option would install a new larger subsea cable (rated at 33kV) while retaining the existing 11kV subsea cable EB-2 in service. The new cable would initially operate at 11kV, with the capability to support a future upgrade to 33kV when required. This aligns with anticipated demand growth identified by SHEPD's system planning team. Similar to Option 4, this would incur additional costs that can be reduced when considering inspections and maintenance in parallel and by utilising existing infrastructure to tie in this cable. This was chosen as the preferred option as two subsea cable circuits provide additional security to electricity supply and allow maximum use of the existing assets until end of life. This option also enables future network reinforcement through potential 33kV operation.

Option 6 – Installation of two new cables on the existing route

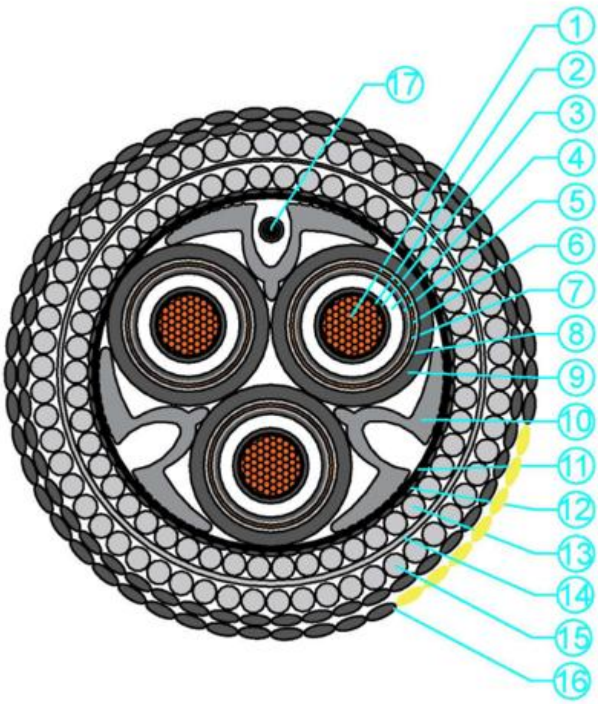
This option would replace the existing 11kV subsea cable EB-2 and replace this with two new subsea cables. This would reduce the probability of failure of the existing circuit and provide additional security for the electricity supply. This was not chosen as although installation of two cables within the same contract could create potential savings for the second cable, the additional benefits do not justify the additional cost of investment over the preferred solution.

Preferred Option

Augmentation with a new, larger sized 33kV rated subsea cable following a similar route (option 5) was chosen as the preferred option as it provides the most benefit to customers by increasing the security of electricity supply with an additional circuit in the event a fault, as well as maximising the benefits of the existing subsea cable retained in service. The new cable will operate at 11kV initially but will be capable of supporting future voltage uprating to 33kV, ensuring long-term network resilience and capacity for demand growth.

4. PROPOSED CABLE PARAMETERS

Electricity will be transferred by the replacement cable using 300mm^2 Ningbo manufactured High Voltage Alternating Current (HVAC) submarine cable shown in Figure 2.



No.	Structure	Material	Thickness (mm)	Indicative O.D.(mm)	Tolerance (mm)
1	Conductor	Copper conductor	/	20.4	±0.5
		Waterblocking compound			
2	Waterblocking tape	Semi-conductive waterblocking binder tape	0.3	21.3	±0.8
3	Conductor Screen	Semi-conductive compound	0.8	22.9	±1.5
4	Insulation	TR-XLPE	8.0	39.3	
5	Insulation Screen	Semi-conductive compound	0.8	40.9	
6	Waterblocking Tape	Semi-conductive water blocking tape	0.5	42.4	±2.5
7	Metallic Screen	Copper tapes	2*0.3	43.1	
8	Waterblocking Tape	Semi-conductive waterblocking tape	0.5	44.6	
9	Inner Sheath	Semi-conductive PE	2.5	49.1	±3.0
10	Filler	Extruded Filler	/	107.0	±3.5
11	Binder	Woven belt with glue tape	2*0.1	107.4	±4.0
12	Serving	PP yarn	1.5	110.4	
13	Armour	Galvanized steel wire with bitumen	54±5/6.0(0.2)	120.6	±5.0
14	Nylon Tape	Nylon tape	2*0.2	121.4	
15	Armour	Galvanized steel wire with bitumen	59±5/6.0(0.2)	133.6	
16	Outer sheath	PP yarn (Black)	4.0	141.6	±6.0
		PP yarn (Yellow)			
17	Optic cable unit	1*48-core ITU-T.G.652D	12.6	/	/

Figure 2 - Cross section of the 300mm Ningbo HVAC submarine cable

The subsea cable proposed for installation is a three-core 300mm^2 33kV HVAC power cable. An integral part of the proposed submarine cable are Fibre Optic (FO) cables for the purpose of condition monitoring, control, and power system protection.

The subsea cable conductor cores specification and power rating has been selected through the assessment of historic demand on the existing network and with consideration given to future demand growth on the network.

Table 1 shows a summary of the key mechanical properties of the replacement cable.

Cable Type (mm^2)	300
Maximum Crush Pressure Installation (kN/m):	35
Minimum Bending Radius Storage (m):	3.5 non-coilable
Minimum Bending Radius Lay (m):	3.5 non-coilable
Maximum Tension (kN):	122
Cable OD (mm)	141.6
Cable Weight (Air) (kg/m)	44.3
Cable Weight (Water) (kg/m)	30.8

Table 1 - Key Cable Parameters

5. PREVIOUS SURVEY WORKS

5.1. Route Survey

Route surveys were undertaken during 2025 which included nearshore and offshore geophysical surveys, offshore environmental surveys, offshore geotechnical surveys, landfall topographic survey and intertidal ecological surveys.

The key outputs of the survey included:

- Seabed bathymetry and land topography
- Geology including surface sediments and bedrock
- Drop down camera inspection & benthic habitat identification
- Identification of archaeological features along the proposed cable route
- Identification of hazards (debris, existing cables, fishing gear etc.)
- The composition of the top 2m of the seabed

The results of the survey works have informed the selection of the Application Corridor and are informing ongoing route engineering to identify and appropriate cable route within this corridor.

6. PROJECT DESCRIPTION

6.1. Route Overview

6.1.1. Route Decision Making Process

Engineering and Planning	Stage	Description
Desktop Study Preliminary Recommended Route	Stage 1	Preliminary recommended RPL based on existing cable information, landfall site surveys, preliminary survey data and desktop study review.
Route Survey	Stage 2	Recommended route survey based on Desktop study
Final Route Engineering	Stage 3	RPL for cable installation generated from geophysical and geotechnical survey data and cable burial risk assessment

Table 2 - Route Decision Process

6.1.2. Application Corridor Description

The proposed Application Corridor lies between Barra and Eriskay as shown in Figure 3, with the existing operational cable also shown in Figure 4.

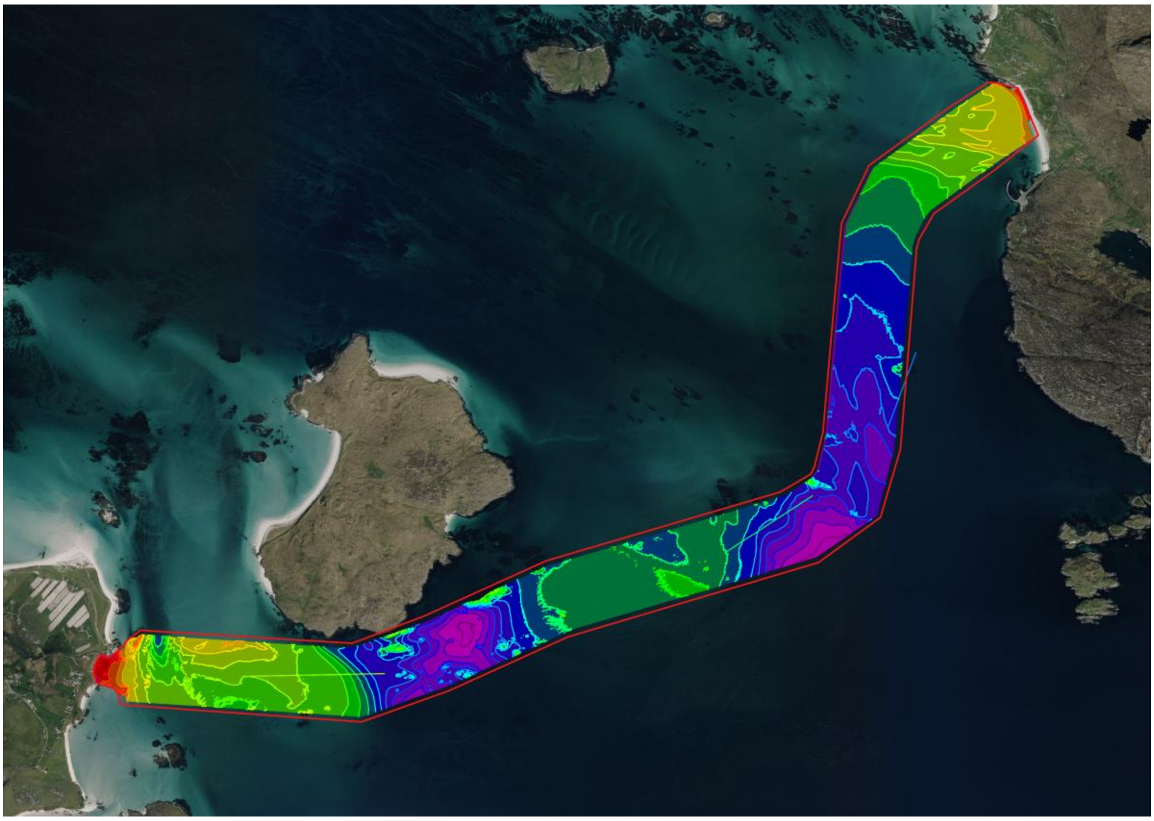


Figure 3 - Application Corridor

The survey corridor for the replacement cable covers an area approximately 5.1km², consisting of a corridor 9.3km long. The survey corridor was identified based on consideration of physical and environmental constraints identified in the Desktop Study. A bathymetric overview of survey corridor is presented in Figure 4.

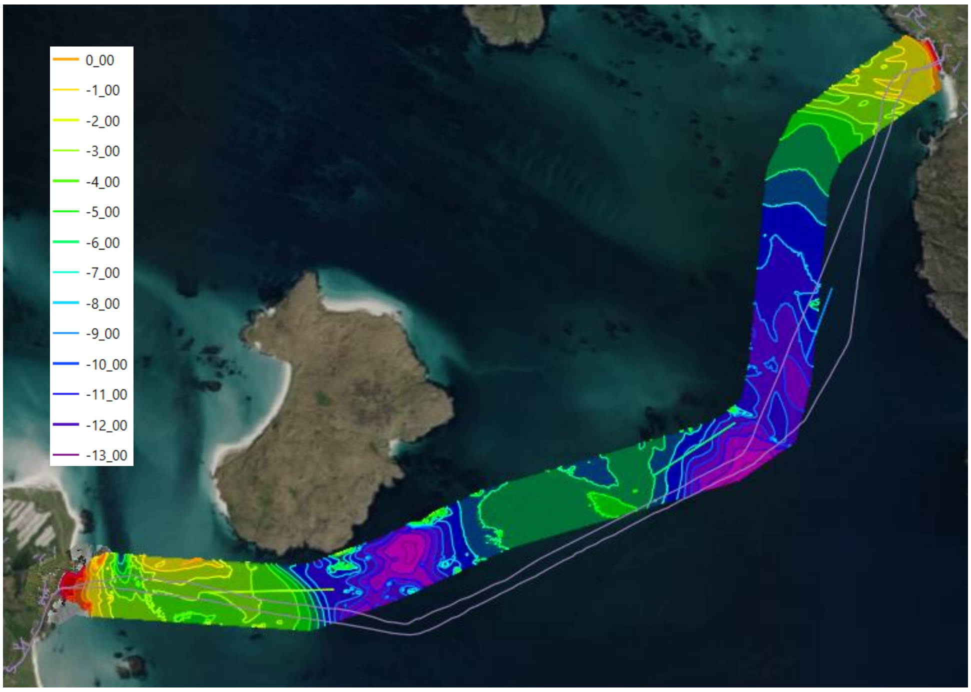


Figure 4 - Survey Corridor +/- 250m

The replacement cable route will be located within the boundaries of the designated Application Corridor and within the survey corridor in Figure 3.

6.1.3. Route Corridor Profile

A bathymetric overview of the Application Corridor is presented in Figure 5. Marine surveys extended approximately 9.3km x 550m between MLWS at Eriskay and Barra, with land and marine coverage overlapping as much as possible.

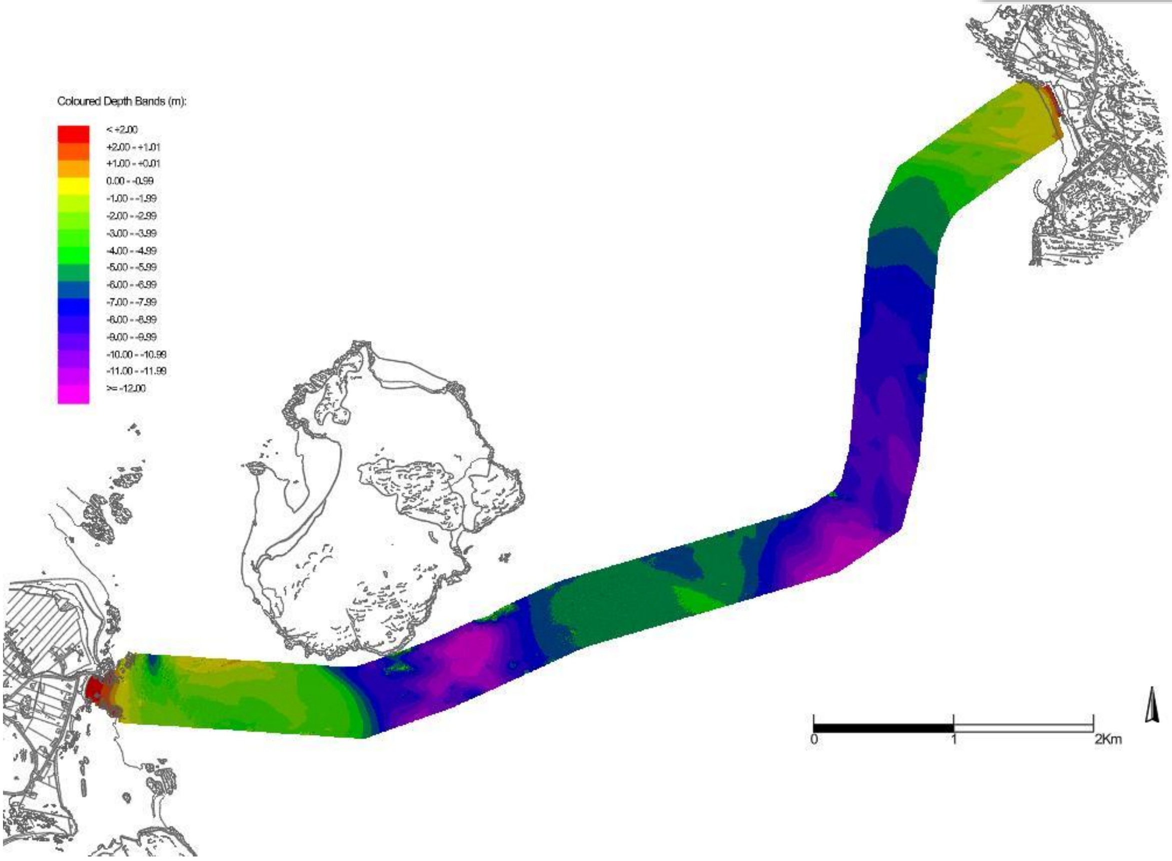


Figure 5 - Multibeam Bathymetric survey area

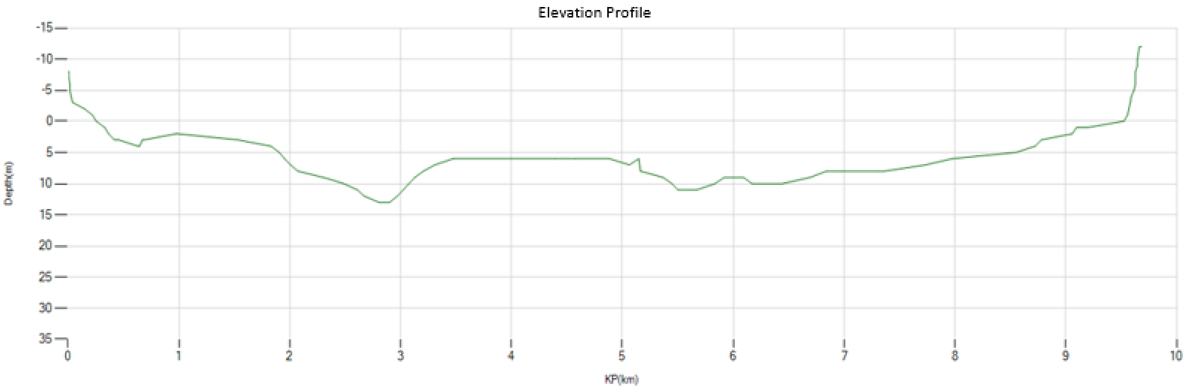


Figure 6 - Elevation Profile

The survey corridor for the replacement cable encompasses approximately 5.1km², extending 9.3km in length with a width of 550m. This corridor has been strategically selected to minimise interactions with key seabed features while maximising the quality and coverage of survey data, ensuring optimal route engineering decisions and cable placement. There were 3 marine survey campaigns carried which included geophysical survey, geotechnical survey and environmental survey.

- Geophysical survey utilised bathymetry Multibeam Echo Sounder (MBES), Side-Scan Sonar (SSS), Sub-Bottom Profiling (SBP), Geotechnical and Magnetometry (MAG) to assess seabed conditions and identify potential hazards.
- Geotechnical surveys utilised utilising vibrocore and Cone Penetration Surveys (CPT).

- Environmental surveys included land walk over, Unmanned Aerial Vehicle (UAV) drone survey, Drop Down Camera (DDC) and grab sampling.

There are two subsea power cables between the landfalls. Eriskay – Barra 1 was installed in 1979 and has since faulted. Eriskay-Barra 2 cable will remain operational till the replacement cable Eriskay-Barra 3 is installed. There is also a BT owned fibreoptic cable installed which uses the same landfall on Eriskay, however uses a more southerly landing on Barra.

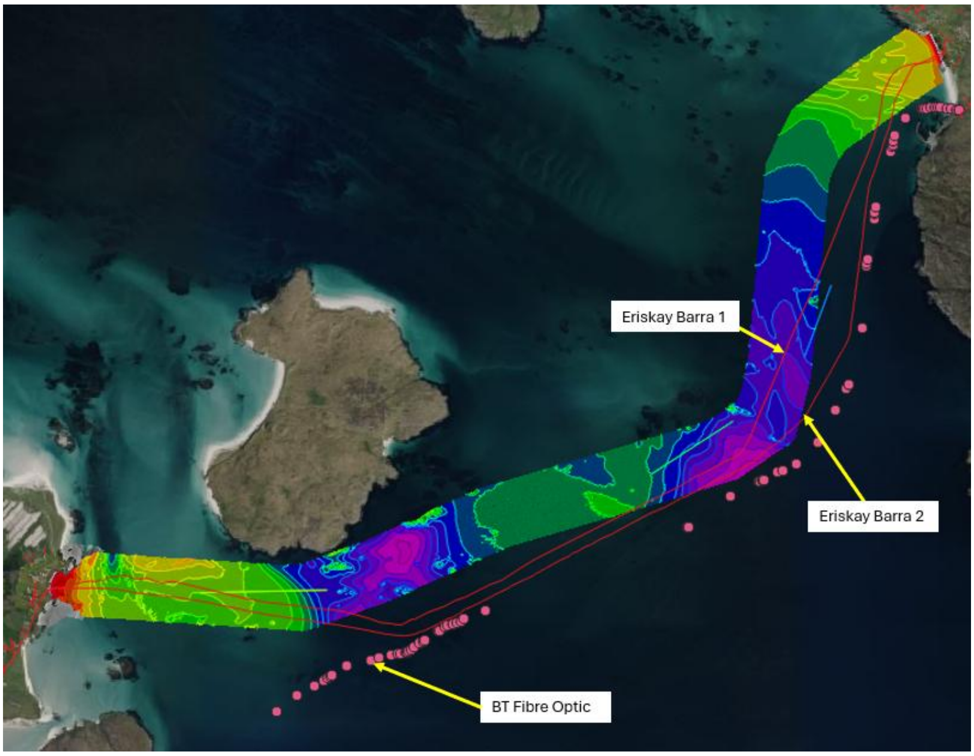


Figure 7 - Eriskay Barra 1, Eriskay Barra 2 & BT Fibre Optic

6.1.4. Proposed Eriskay Landing Site

The existing landing site on the beach of Eriskay at Coilleag a' Phrionnsa will be utilised for the replacement power distribution cable. Located at the upper shore of the Eriskay landfall, it is bordered by sand dunes (approximately 4m high) composing of coarse sand and sediment. Within the intertidal area there were larger patches of exposed bedrock. The Desktop Study for the landing point review of Coilleag a' Phrionnsa on Eriskay was conducted in September 2024, this was then followed by a site visit from Briggs Marine and Scottish Hydro Electric Power Distribution (SHEPD) in September 2025.

There is existing infrastructure at the Eriskay landing. Leveraging the current infrastructure means that the project can connect to the grid with greater ease, reducing both the logistical and regulatory challenges typically associated with establishing a new landfall site. This minimises the need for additional cabling, new access routes and keeps environmental footprint impact to a minimum. It also ensures that the project aligns with existing utility frameworks, thereby simplifying integration with the island's electrical grid. The existing Eriskay-Barra 1 and Eriskay-Barra 2 cables also land at this location.

Figure 8 - Eriskay Landfall

Figure 9 - Eriskay Access Track

Figure 10 - Eriskay Landfall Beach Access Track

Figure 11 – Eriskay View of the Sand Bank at the Beach Head

Figure 12 - Eriskay Existing Infrastructure

Figure 13 - Eriskay Nearby Site Laydown Area

6.1.5. Proposed Barra Landing Site

The Barra landfall site is an open sandy beach with occasional exposed rock outcrops and is approximately 70m wide. The majority of the Barra nearshore is comprised of fine sand with smaller patches of rock habitats. Located within the intertidal and subtidal zone is dominated by sandy sediment. The Barra landfall site has been previously used for the existing Eriskay-Barra 1 and Eriskay-Barra 2 landings situated between Sanderling and Cidhe Eòlaigerraidh. The desktop study of the Barra landing point review conducted in September 2024, was followed by a site visit in September 2025 by Briggs Marine and Scottish Hydro Electric Power Distribution (SHEPD). There is existing overhead line infrastructure immediately adjacent to the beach area with land and marine cable terminating on a single H post/termination. There are no upgrades required to the existing infrastructure for the new replacement cable, however there is the requirement for new underground cable to connect the subsea cable back to the existing infrastructure.

Figure 14 - Barra View from Common Grazing over Bay. Rock Out Crops Visible.

Figure 15 - Barra Break in Sand Bank allowing Access to Beach

Figure 16 - Barra Existing Infrastructure

Figure 17 - Barra Nearby Possible Site Lay Down Area

6.2. Proposed Installation Method

The indicative methodology is intended to give an overview of the options available to the cable installation contractor and has been used to inform the environmental assessment provided in MEA, so that the worst-case impact scenarios of the installation have been considered. The final methodology will be subject to detailed route engineering and any requirements of the installation analysis.

Vessels and equipment proposed to be utilised during the installation are summarised in the subsequent sections. All equipment used will be within the requirements set out within the European Protected Species (EPS) and Basking Shark (BS) Licences provided for the works.

6.2.1. Vessels

Table 3 provides an overview of the types of vessels that will be deployed during the installation of the cable, these vary from Cable Lay Vessels (CLV), Dive Support Vessels (DSV) and other support vessels. These specific vessels or vessels with similar specifications will be used in the installation of the replacement cable.

The CLV will be a DP2 vessel. Due to the shallow nature of the route, a DP2 vessel operating draft will need to be assessed during the planning phases. An example DP2 construction vessel can be found in Figure 30.

Both the DSV and the shore end pull in support, if used, be positioned using up to two spud legs up to 13m LAT, with the potential for a two or four-point mooring spread to be used as an alternative if required. There is the potential for the mooring spread to be left in place between working days, marked with surface buoys and lights. This has benefits such as reducing the number of deployment & removals and therefore overall reducing environmental impact. A diagram of the 4-point mooring spread is included in Figure 18, and the 2-point spread is shown in Figure 19.

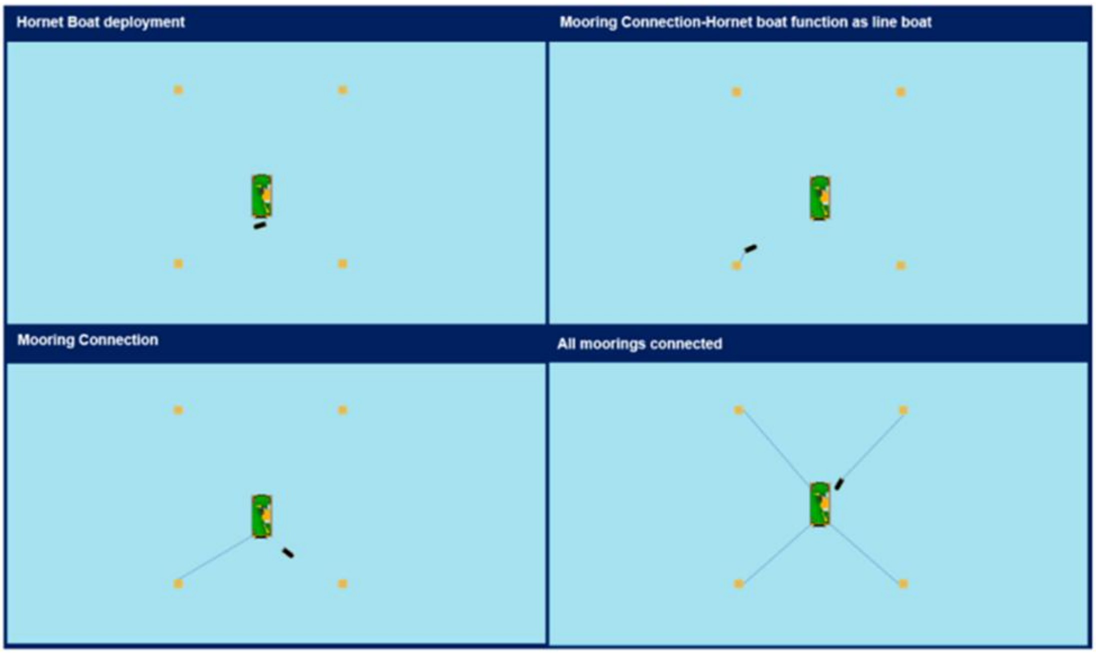


Figure 18 - Lay of Temporary Moorings for 4-point Spread

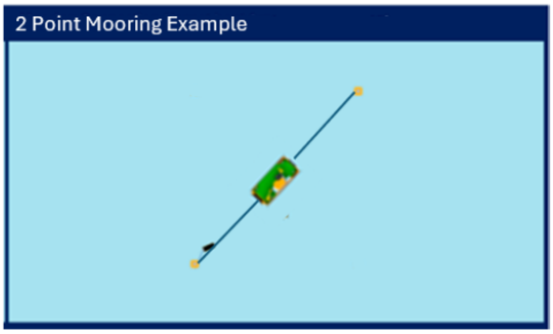


Figure 19 - Lay of Temporary Moorings for a 2-point Spread

Due to the shallow nature of the seabed along the cable route and the resulting longshore end pull in; a small floating pontoon may be used to support pull in operations. It will be secured in place by spud legs or 2 or 4-point anchor spread – see Figure 18 and Figure 19. The pontoon would be towed into position by a multicat (such as the Forth Warrior) where it will be pinned into place.

Name of Vessel	Type of Vessel	Vessel Specification	Positioning System/ Spud diameter	Minimum Working Draft
MV Fjord Connector	Cable Lay Vessel (CLV)	GT – **1250** DL – **57.90m** DB – **13.10m**	DP 2	7m (Note a DP 2 CLV will need to be assessed suitable for the final route water depths)
Forth Constructor	Construction Vessel	GT – **636** DL – **39.99m** DB – **12.40m**	DP 2	5m (Note a DP 2 CLV will need to be assessed suitable for the final route water depths)
Forth Warrior	Dive Support Vessel (DSV)	GT – **296** DL – **27m** DB – **12m**	610 mm with spiked tip 4-point mooring spread 2-point mooring spread	5m
Spanish John	Other Support Vessel (DSV)	GT – **498** DL – **19.9m** DB – **6.5m**	N/A	1m
Celtic Guardian	Other Support Vessel	GT – **9.5** DL – **13.9m** DB – **4.3m**	N/A	3m
Shore End Pull Support (Pontoon)	Other Support Vessel	GT – **78.8** DL- **18.30m** DB – **18.3m**	Small Diameter Spud Legs 4-point mooring spread 2-point mooring spread	2m

GT- Gross tonnage – DL – Dimension Length – DB – Dimension Beam – DP – Dynamic Positioning

Table 3 - Installation Vessels

For the type of cable installation detailed in this Project Description, the expected number of vessels during each stage of the operations is detailed in Table 4.

Phase	Vessels
Pre-installation	1 Multicat 1 Support RHIBs
Cable lay	1 Cable lay vessel 2 Pontoons 7 Support RHIBs 2 Dive support vessels
Post-installation	1 Construction vessel 1 Survey vessel 1 Dive support vessel 2 Support RHIBs

Table 4 – Installation Vessels for Operations

6.2.2. Cable Lay Monitoring Equipment

Touch down monitoring (TDM) of the cable will be conducted to confirm the position of the cable, this will be done as the cable is laid, using a Remotely Operated Vehicle (ROV) or a cable fish. The ROV will be deployed from the cable lay vessel (CLV) or a separate support vessel that will be present during the installation. An example of the ROV and survey equipment that will be used during the installation is presented in Figure 20. All equipment used will be within the requirements set out within the European Protected Species (EPS) and Basking Shark (BS) Licences provided for the survey works.

6.2.3. Seabed Preparation

6.2.3.1. Pre-Lay Survey and Boulder-Picking

Prior to lay operations commencing, a pre-lay survey may be conducted, this will be undertaken using a ROV (Figure 20). The objective of the survey is to:

- Identify and investigate possible debris; and
- Identify any obstructions on the proposed route including the presence of boulders which may impede the safe installation of the cable.

A summary of the survey equipment that may be used during the pre-lay survey is outlined in Table 5-3.

System / Survey Equipment	Description
Geophysical	
Ultra-Short Baseline (USBL)	USBL systems are used to determine the position of subsea survey items, including ROVs, towed devices, grab samplers, etc. This involves the emission of sound from a vessel- mounted transducer to a subsea transponder, thereby introducing sound into the marine environment. A USBL system consists of a transducer, which is mounted on the vessel and a transponder attached to the ROV. The transducer transmits acoustics through the water and the transponder sends a response which is detected by the transducer. The USBL calculates the bearing and time taken for the transmissions to be completed and thus the position of the subsea equipment is determined. These systems can either be used continuously or intermittently through the operation they are supporting.
Multi-beam echosounder (MBES)	Multi-beam echo-sounders are used to obtain detailed 3-dimensional (3D) maps of the seafloor which show water depths. They measure water depth by recording the two-way travel time of a high frequency pulse emitted by a transducer. The beams produce a fanned arc composed of individual beams (also known as a swathe). Multi-beam echo- sounders can, typically, carry out 200 or more simultaneous measurements.
Seabed Imagery	
Hi-Resolution Camera	An ROV mounted camera will be utilised to acquire imagery of the cable and adjacent seabed.

Table 5 - Examples of proposed survey equipment

Figure 20 - Example of the type of ROV

6.2.3.2. Boulder Clearance

Although the cable route will be engineered to avoid as many boulders as practical, a hydraulic operated grab may be required to remove any boulders that may impede the safe installation of the cable. This system will be operated from the surface and deployed using a boulder removal vessel such as the Forth Constructor (Figure 22) DP2 construction vessel work crane. An ROV (Figure 20) will assist in the positioning of this tool.

Coordinates will be recorded of each boulder pre and post move. The boulders will be lifted to outside the cable lay corridor or trenching corridor (approximately +/-25m from the route). They will be relocated within the licence application corridor.

If debris or an obstruction cannot be removed from the planned route, the offshore surveyors will micro-route around the debris/obstruction in consultation with the onboard Client Representative (CR). Any micro-routing will always remain within the licenced installation corridor.

Figure 21 - Example of boulder grab

Figure 22 - Forth Constructor Pre-lay, Boulder Removal, Crossing and Stabilisation Operations

6.2.3.3. Pre-Lay Grapnel Run (PLGR)

Any obstructions or debris which cannot be avoided will be removed, if possible. Pre-Lay Grapnel Run (PLGR) may be required to remove debris such as cables, chains, wires, ropes, and fishing gear. It is expected that this activity will be completed prior to the cable installation activities to ensure that the installation corridor remains free of debris during installation. A typical grapnel train is shown below in Figure 23 and Figure 24 shows an example of a grapnel and chain over the stern of a vessel.

PLGR will be carried out along the route, however, will be avoided in areas of high sensitivity habitats such as seagrass. Throughout the route, there will be a high accuracy of the grapnel along the planned cable route due to the water depths.

In the event that OOS (Out of Service) cables require to be cleared, the cut ends will be secured with clump weights to prevent cable movement in line with International Cable Protection Committee (ICPC) recommendations utilising divers.

Debris identified and removed along the route will be disposed of as outlined in the offshore Construction Environmental Management Plan (CEMP).

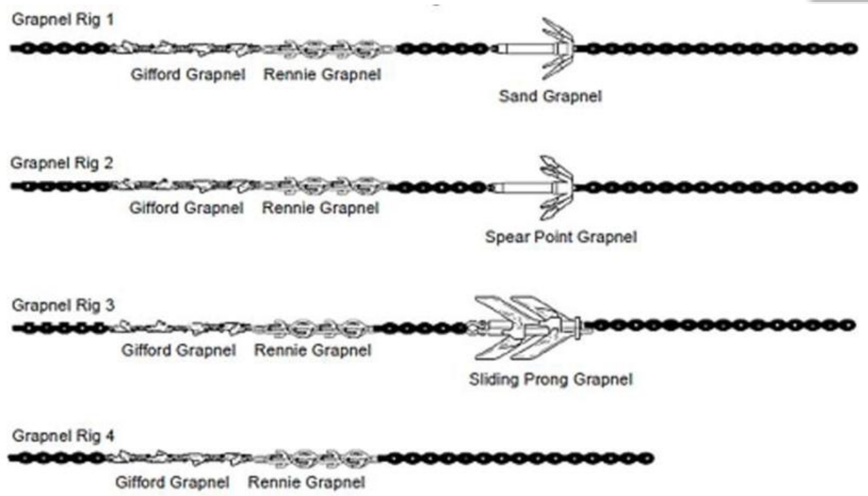


Figure 23 - Grapnel Train (Typical Example)

Figure 24 - Example of Grapnel and Chain at Stern Roller of Vessel

6.2.4. Transition Joint Pit

The Transition Joint Pit (TJP) (Figure 25) is positioned on the land fall and will be the location where the subsea cable is split out into its individual cores and terminated to a land cable. The TJP at each landfall is located above MHWS and will utilise a sea earth. As the Marine Licence Application Corridor only covers up to MHWS, details on the TJP are only included in this report to provide further information on the Project.

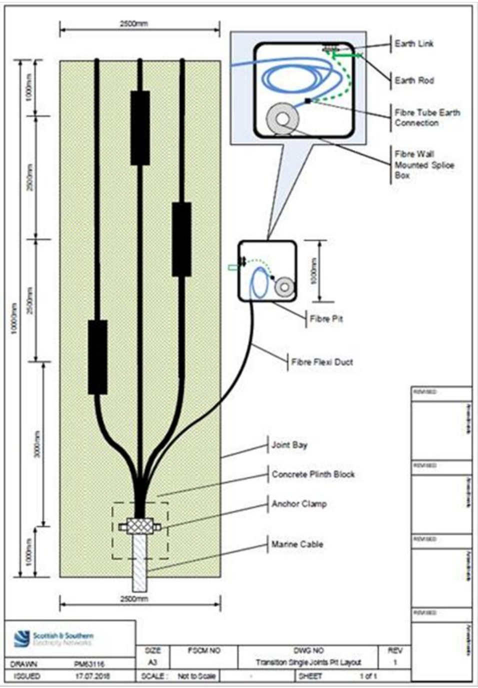


Figure 25 - SSEN provided TJP plan (Typical)

6.2.5. Intertidal Cable Installation

6.2.5.1. Open Cut Trench

Each landfall will have a single trench excavated using an Open Cut Trench (OCT) (Figure 26) method (subject to ground conditions). The OCT will be for the replacement subsea cable and sea earth's within intertidal area from Mean Low Water Springs (MLWS) to Mean High Water Springs (MHWS) and beyond to the TJP. It may be possible to trench lower than MLWS depending on site conditions.

The trench will be 1m in width, and the target depth of the trench will be to the top of the cable 0.8m-1.2m below ground level. However, this is subject to ground conditions such as the soil stability and the nature of subsurface sediments. This will be better understood on completion of the intertidal surveys. 1 x 20tn and 1 x 8tn excavators complete with rock pecker attachment, will be utilised to reach the depths required to bury the cable in the intertidal zones of each landfall.

Each landfall's OCT will require a 20m corridor width to conduct the works, 20m will be sufficient space to operate the excavator and temporarily store the excavated material. Once split pipe is installed through the intertidal zone, it will be trenched in sections, so no trench is left open through a tide cycle, therefore minimising sedimentation.

The total length of the trench excavation will be:

- MLWS to TJP at Eriskay will be a maximum of 138m
- MLWS to TJP at Barra will be a maximum of 231m

The length of intertidal trenching will be:

- MLWS to MHWS at Eriskay will be a maximum of 41m
- MLWS to MHWS at Barra will be a maximum of 200m

Once the trenching activities are completed, the excavated material will be backfilled into the trench, returning the intertidal area to pre-works conditions.

Figure 26 - Example of OCT

6.2.6. Intertidal Cable Pull In

Cables will be pulled onto land using two winches, this will be on a rising tide along with a combination of rollers (Figure 27) and quadrants (Figure 28). This equipment will allow the cable to be safely pulled ashore without any damage. It is possible that rock anchors may be used for securing equipment to rocks if necessary. Rollers will be used to support the cable as it's pulled across the ground and the quadrants are used to pull the cable around should there need to be a change in direction to keep the cable on the route. Anchor plates will hold the rollers and quadrants in place while the process of the pull in takes place, these anchor plates will be buried and then removed once the cable has been pulled ashore.

Figure 27 - Example images of rollers

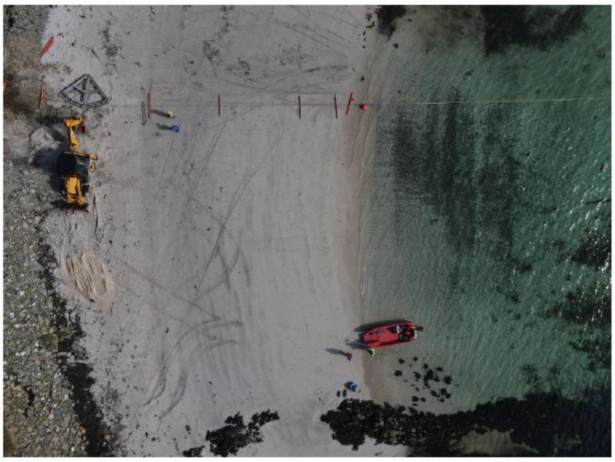


Figure 28 - Example of Rollers and Quadrants

6.2.7. Subtidal Cable Installation

The following installation method is based on that utilised during cable burial and cable lay installations that SHEPD have undertaken on other cable routes and advice from the cable installation contractor. This has been used as the basis for the present MEA.

6.2.7.1. Shore End Pull Support

Due to the long shore end pull required due to the shallow nature of the cable route, a shallow draft modular pontoon may be required to help position the cable when floating. The pontoon would be towed into position by the Forth Warrior (or similar multicat) where it will then anchor using spud legs or 2 or 4 anchor spread (see Figure 18 and Figure 19).

Figure 29 - Example of Floating Pontoon

Pontoon Specifications

Dimensions	Length: 10 m Breadth: 10 m Depth: 0.73 m Note as the pontoons are modular size could be adjusted as required.
Spud Length	10 to 14m
Spud Diameter	0.2 to 0.4m

Table 6 - Pontoon Specifications

6.2.7.2. First End Pull In

The CLV will position at the first end pull-in site (Barra), generally stationed at the 5-7m water depth (WD) contour (this is dependent on the vessel's draft). Deck handling equipment will be used to direct the cable to the over-boarding chute. An example CLV's which will potentially be used during the installation is displayed in Figure 30.

Figure 30 - MV Fjord Connector Example CLV

The first end cable pull in will be conducted on a rising tide due to the long length of the intertidal. A messenger line will be taken from the CLV via small support craft to the shore. This will be connected to the shore winch line at MLWS. The messenger line will then pull the shore winch wire to the CLV where it will be connected to the cable end. The shore winch will commence pulling in the cable with buoyancy units attached onto the cable as it leaves the vessel to 'float' the cable ashore – these units are removed as the cable reaches MLWS. The floating cable may be held in position by a floating pontoon, multicat or small support RHIBs to ensure it is installed within the confines of the agreed application corridor. The cable will be secured at the TJP and surface swimmers will gradually remove any remaining buoyancy units, completing the first end pull-in operations. A DSV will be anchored within the agreed application corridor to support any diving or surface swimming operations.

6.2.7.3. Cable Lay Operations

Following successful completion of the first end pull in the CLV will commence laying the cable on the seabed from the First end (Barra) to the Second end (Eriskay).

During cable lay operations, the vessel crew will monitor the lay to ensure the cable is within the consented installation corridor and that the mechanical parameters of the cable are adhered to. A cable fish or ROV may be used for Touch Down Monitoring (TDM) during installation, which contains a camera and USBL system to ensure accurate images of the installation are sent to the crew on the CLV for assessment.

During these operations, the vessel structure may be outside the licenced corridor however all temporary deposits will be deployed and all permanent deposits installed within the application corridor. Vessel movements will be notified by notice to mariners issued to inform other sea users for safety as outlined in the Fishing Liaison Mitigation Action Plan (FLMAP).

6.2.7.4. Second End Pull In

Once the cable is laid to the Eriskay landfall, the vessel will either manoeuvre off the RPL and float the cable off the vessel or remain in position on the RPL and pay out cable into a floated omega bight. This is to allow the cable to be cut at the required length prior to pulling the cable into the second end landing point at Eriskay.

The bight may be outside of the cable installation corridor whilst in the water column at certain points during deployment, however final installed position will be within the boundary of the licenced area. The supporting FLMAP and MEA references the notifications issued to sea users to inform which activities are taking place. Navigational broadcasts will be issued via Navigational telex (NAVTEX) and Notices to Mariners (NTMs) distributed by the Kingfisher fortnightly bulletin and on social media.

As per the First end, buoyancy units will be attached to the cable as it is being paid out to float the cable ashore.

Once the cable is floated out into a bight, the cut cable end will be taken ashore by a small support craft. Once the cable end is at landfall it will be connected to a winch and pulled into its final position. Surface swimmers will then gradually remove the buoyancy units allowing the cable to come to rest on the sea floor. The shore winch will pull in any slack to complete installation operations.

6.3. Cable Protection Methods

This section outlines the envelope of all potential marine cable stabilisation and protection methods for which consent is being sought.

Ongoing design and engineering, such as On Bottom Stability (OBS) and Cable Burial Risk Assessment (CBRA), will further refine the types and quantities of cable protection, burial and stabilisation to be employed along the route.

Split pipe and sea earths will be utilised to provide deposit type protection for the replacement cable and concrete mattresses may be used as a contingency. Worst case scenario quantities, dimensions and weight for each protection method is provided in Table 10 in Section 9 and is the basis of the assessment made in the MEA.

6.3.1. Split Pipe (Articulated Pipe)

The cable protection strategy includes the installation of cast-iron split pipe (articulated pipe). Generally, this is installed following the cable pull-in operations by divers or from the CLV during lay, or by a combination of both methods. This protects and helps stabilise the cable in the nearshore and intertidal section of the cable route. It can also be used at out of service and live cable crossing locations to protect against abrasion between the cables.

See the cable protection and stabilisation plan detailed in Table 10 for the length of anticipated articulated pipe installation.

6.3.2. Out of Service Cable Removal

Out of service cable removal may be carried out as part of the PLGR scope of work, refer to Section 6.2.3.3 or it can be carried out using a dive team. A DSV will set up at the crossing location on either spuds or anchors. Divers will be deployed to the crossing location, can cut and remove a section of out of service cable and then securely seal the remaining cable using a suitable cap. Clump weights would be installed to secure any cable end movement in line with ICPC recommendations. This can be completed either prior to or post installation of the new cable and is instead of installing split pipe or mattresses at the crossing location.

6.3.3. Concrete Mattresses

The cable protection strategy is to install split pipe on Out of Service (OoS) cable crossings. As a further contingency mattresses may be installed to provide separation between the OoS cable and the new cable if split pipe or OoS removal is not possible. Where their placement may reduce navigable water depth by more than 5% then consultation will be undertaken with the MCA. Typically, mattresses are used for stabilisation or protection instead of rock bags in shallow water areas due to being thinner (0.3m thickness or less) than rock bags.

The mattresses will be stored on the vessel and lifted into position using the vessel’s crane. The vessel’s ROV monitors the installation and detaches the crane wire from the mattresses once in position.

The mattresses may be installed as soon as the cable is laid by a separate vessel (Forth Constructor, multicat or similar) to the cable lay vessel. Simultaneous Operations (SIMOPS) between the two vessels will be managed in the planning phase as well as the offshore phase via implementation of a SIMOPS plan. Each vessel will be named in the NTM as required in the supporting FLMAP.

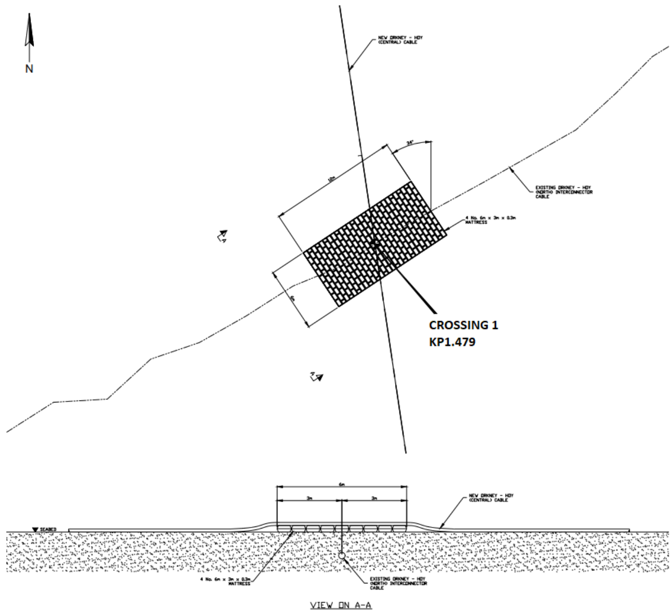


Figure 31 - Example Cable Crossing

6.3.4. Cable Burial

Subtidal burial via trenching is not proposed, however, the cable will be buried through the intertidal area at each landing. See section 6.2.5.1 for further information on intertidal burial.

If there is potential for shallow burial of the cable in areas where Articulated Pipe (AP) or mattresses are not suitable, a diver-operated dredge pump (or similar) may be used, as illustrated in Figure 32. This technique provides a precise, minimally invasive approach to sediment removal by allowing the diver to direct the pump to remove sediment specifically beneath the installed cable. As sediment is carefully extracted, the cable gradually settles into the narrow trench created, ensuring it is securely buried without excessive disruption to the surrounding marine environment.

If necessary, the diver operated dredge pump may be used to assist burial at or just below MLWS to extend the intertidal burial as close to LAT as possible or assist removal of sections of OoS cable at crossing points.

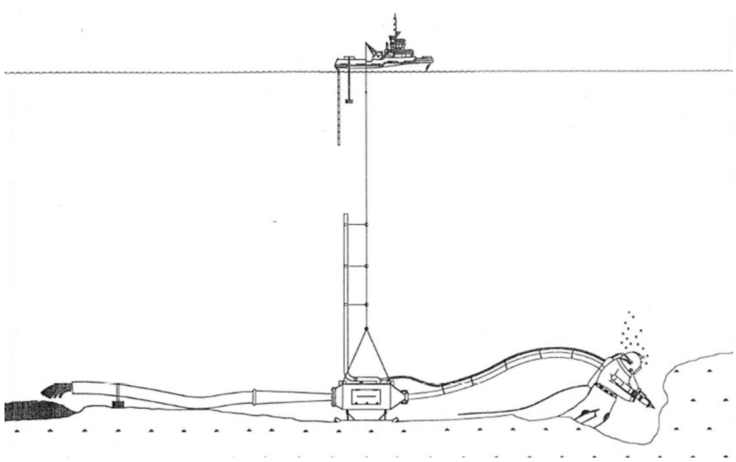


Figure 32 - Example of Diver dredge

6.3.5. Sea Earths

Sea earths will also be installed to provide protection from surges and lightning strikes to the electrical circuit. Two earthing cables will be required at each shore end. One cable will earth the armour of the HVAC cable system, while the other provides an earth for the fibre optic armour (integral to the HVAC cable system). The earthing cables will be stranded copper wire.

The sea earths will be connected to the armour wire and fibre optic cable at the TJP. Between TJP and MLWS, the earth wire will be installed within the same trench as the subsea cable. From MLWS the earth wires will run between 30-50m into the sea as advised by the earthing design report. Concrete clump weights may be used to anchor the sea earths at intervals/at their termination subsea. The working corridor will be 20m (10m either side of the cable) within the Marine Licence corridor.

6.4. As-Built Survey and Site Reinstatement

Following completion of operations, an as-built survey will be undertaken of the replacement cable and protection. This will record the as installed position of the cable, and the actual deposits utilised to stabilise and/or protect the cable. Subsea this may be carried out as part of the stabilisation or trenching operations or a separate unmanned survey vessel may be used due to the shallow nature of the route. The landfall sites will also be re-instated as agreed with landowners and as required in any proposed environmental mitigation. Rock anchors, if required during the installation phase, will be cut flush to the rock after operations. The replacement cable will subsequently be electrically jointed to the land High Voltage (HV) infrastructure. The routing and installation of the land HV infrastructure is not covered as part of this Project Description which supports the marine licence application.

Details of the as-built locations of the cable and associated protection measures will be provided to the UK Hydrographic Office and the Kingfisher Information Service for inclusion on Admiralty Charts, and Offshore Renewable and Cable Awareness Charts respectively.

7. UXO STRATEGY

Unexploded Ordnance (UXO) are explosive weapons (bombs, shells, grenades, land mines, naval mines, cluster munition, and other munitions) that did not explode when they were deployed and still pose a risk of detonation. UXO is a global concern due to the inherent dangers of potential denotation. As part of the route engineering process, a detailed UXO risk assessment and risk mitigation strategy within the installation corridor has been carried out. The risk from UXO can never be considered “zero” in the offshore environment, due to survey equipment limitations and the potential for UXO migrations through natural forces and external influences.

The Eriskay-Barra project has adopted a phased approach to managing UXO risk as in Figure 33.

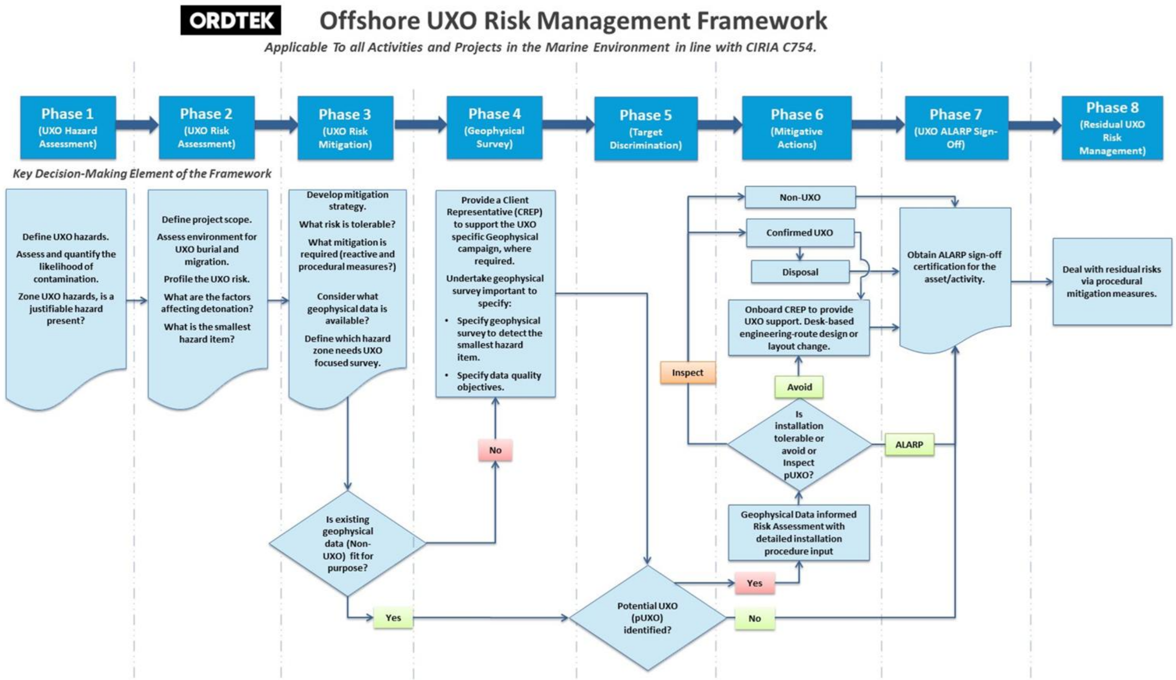


Figure 33 - UXO Risk Management Flowchart

During Phases 1-3, the risk assessment result for the Eriskay-Barra route is considered to be **Tolerable** meaning there is no requirement for a further UXO specified survey, target discrimination or mitigative actions (Phases 4-6). After the As Low As Reasonably Practicable (ALARP) sign off, there could be residual risk management such as an Emergency Response Plan should a UXO be encountered, Safety & Awareness Briefings or an on-call UXO Specialist. All mitigations will be captured as part of the installation campaign.

8. ANCHOR AND SPUD PLAN

8.1. Vessels

The following vessels and equipment (or similar) may be used during operations with anchoring and spud legs. They will be used for supporting vessel pull in operations and carrying out dive operations. Typically, the diving operations will be carried out at the shore ends for removing installation equipment from the cable and installing cable protection split pipe. There may be a requirement for diving along the cable route for installation of split pipe where route engineering shows it as necessary.

Figure 34 - Example of DSV - Forth Warrior

Figure 36 - Example of DSV – CRC Sentinel

Figure 35 - Example of Floating Pontoon

Figure 37 - Example of spud legs typically used during operations

8.2. Barra Landing DSV and Pontoon Position(s)

The DSV and / or pontoon will be set up using spud cans or anchors in the area shown in Figure 38. This area is within a predicted area of PMF habitat kelp and seaweed communities on sublittoral sand. Anchor and spudding in the area is unavoidable due to the large expanse of the habitat. Impact will be kept to a minimum by a reduced number of vessel set up locations and avoided where possible. Details on anchor area coordinates can be found in Section 12.

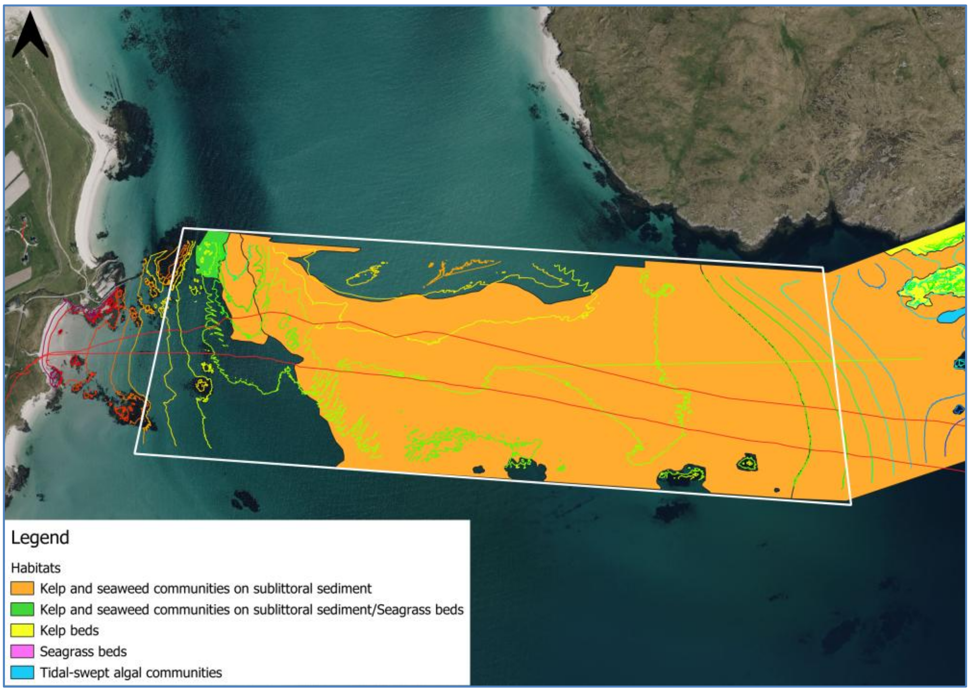


Figure 38 - DSV / Pontoon Barra Position

It is anticipated that there will be four set up locations within the anchor area shown in Figure 38. Differing set-up locations are required for different operations as detailed in Table 7. It is expected that the vessel will set up at each location once per day. The total number of days required for each operation within this area are detailed in Table 7.

Spudding / Anchoring Operation (Days)	Operation
6	Split Pipe Installation
10	Support Pull In Ops / Split Pipe Installation
16	Crossing Installation / Oos Cable Removal

Table 7 - Indicative Barra Anchoring & Spudding Operations

8.3. Mid Route DSV and Pontoon Position(s)

The DSV and / or pontoon will be set up using spud cans or anchors in the area shown in Figure 39. This area is located out with predicted areas of PMF habitats. Details on anchor area coordinates can be found in Section 12.

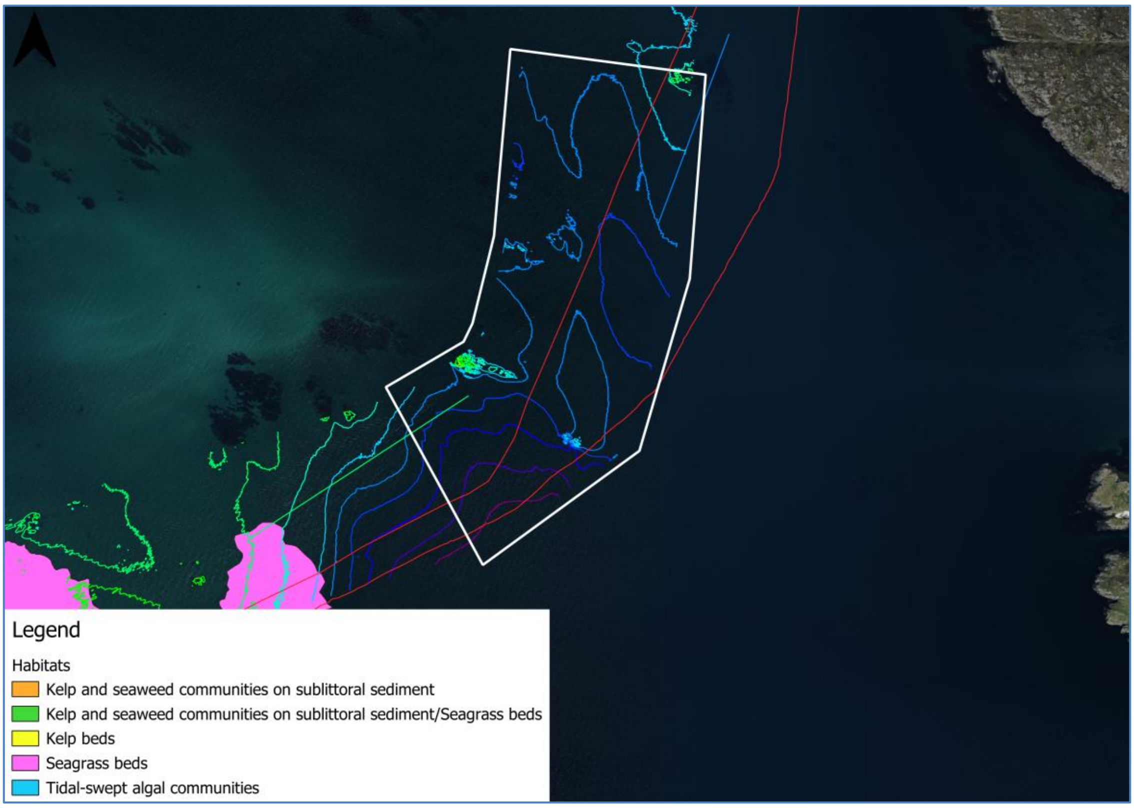


Figure 39 - DSV / Pontoon Mid Route Area

It is anticipated that there will be four set up locations within the anchor area shown in Figure 39. Differing set-up locations are required for different operations as detailed in Table 8. It is expected that the vessel will set up at each location once per day. The total number of days required for operations within this area are detailed in Table 8.

Spudding / Anchoring Operation (Days)	Operation
12	Crossing Installation / Oos Cable Removal

Table 8 - Indicative Mid Route Anchoring & Spudding Operations

8.4. Eriskay Landing DSV and Pontoon Position(s)

The DSV and / or pontoon will be set up using spud cans or anchors within the area shown in Figure 40. This area is outwith any areas of predicted PMF habitat. There is a habitat of Seagrass near the Eriskay landing however, DSV spudding and anchoring operations will not impact this. Details on anchor area coordinates can be found in Section 12.

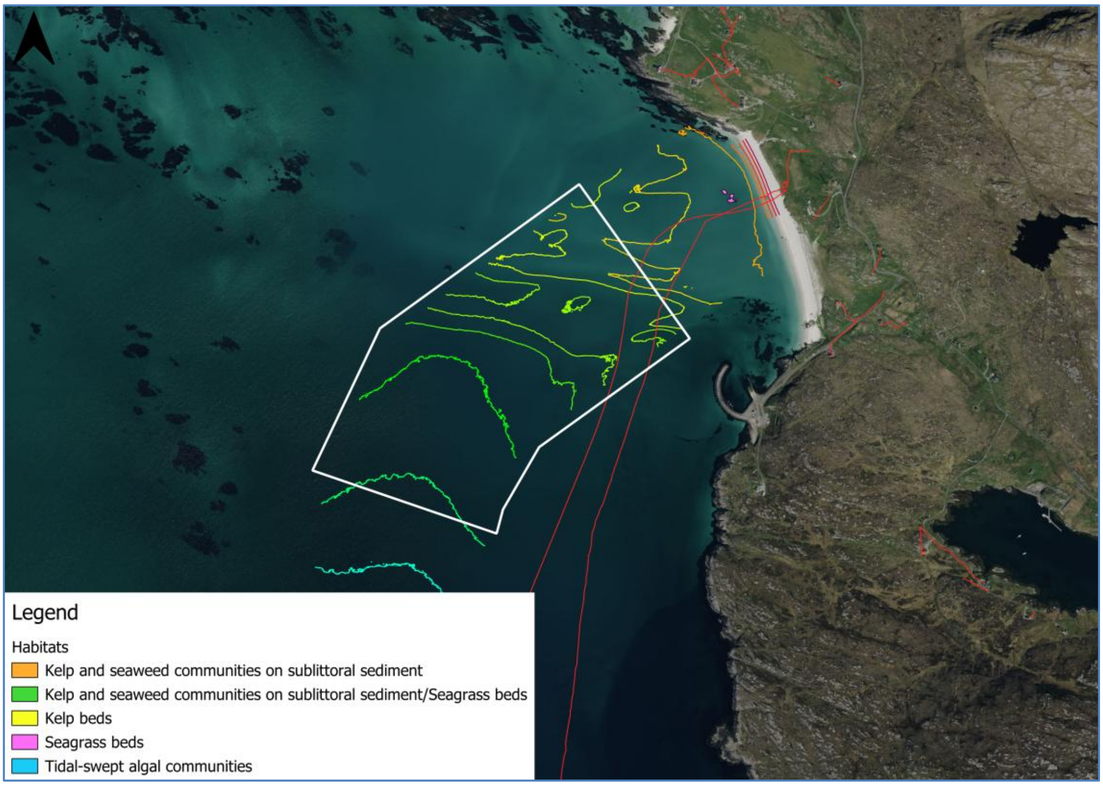


Figure 40 - DSV / Pontoon Eriskay Area

It is anticipated that there will be eight set up locations within the anchor area shown in Figure 40. Differing set-up locations are required for different operations as detailed in Table 9. It is expected that the vessel will set up at each location once per day. The total number of days required for each operation within this area are detailed in Table 9.

Spudding / Anchoring Operation (Days)	Operation
3	Support Pull In Ops
14	Split Pipe Installation

Table 9 - Indicative Eriskay Anchoring & Spudding Operations

9. DEPOSIT PLAN

9.1. Overview

SHEPD have compiled a deposits plan based on survey data acquired, this is detailed in Table 10. This outlines the type and number of seabed deposits required for stabilisation and protection and is the basis of the assessment made in the MEA. The cable will be surface laid with deposits placed where it is considered most appropriate along the cable route as protection measures. All previous cables in this area have also been surface laid.

Engineering studies are ongoing which may alter the final quantity of the deposits required. The information provided in Section 9.2 Deposit Plan Schedule is therefore based on worst-case estimates.

9.2. Deposit Plan Schedule

Table 10 outlines the type and number of seabed deposits needed for cable protection and stabilisation.

Type of deposit/ removal	Deposits		Removal	
	Description	Quantity & Dimensions (metric)	Description	Quantity & Dimensions (metric)
300mm^2 Cable	Three core 300mm^2 33kV HVAC power cable	Quantity No. 1	N/A	N/A
		Dimensions: Diameter: 141.6mm Total length: 10674m Contingency included: 10%		
		Weight: ~30kg/m		
Earthing wire	Copper wire for earthing	Quantity No. 4	N/A	N/A
		Dimensions: Diameter: 95mm^2 Total length: 1021m Contingency included: 10%		
		Weight: ~0.6kg/m		
Cast Iron split pipe	Articulated cast iron shell design that interlocks around the cable and is fixed with bolted end clamps. This will be placed on either shore	Quantity No. 700m	N/A	N/A
		Dimensions: Diameter: 260mm Total Length: 700m		

Type of deposit/ removal	Deposits		Removal	
	Description	Quantity & Dimensions (metric)	Description	Quantity & Dimensions (metric)
	end of the cable where burial is not possible.	Contingency included: 23% Weight: 52.8kg/m		
300mm Concrete mattresses for Crossing Locations	Concrete mattresses may be required to manage cable crossings.	Quantity: No. 5 Contingency included: 20% Dimensions: Width: ~3m Length: ~6m Height: ~0.3m Weight 8.75 Te	N/A	N/A
Earthing clump weight	Concrete or chain clump weight or for earthing wires	Quantity: No. 4 Contingency included: 50% Dimensions: Diameter: 1 m Height: 0.5m Weight: Up to 60Kg each	N/A	N/A
Clump weight	Concrete, steel, or iron clump weights for securing free cable ends - may be required where existing cable(s) are cut to secure the cable ends.	Quantity: No. 12 Contingency included: 33% Dimensions: Diameter: 1m Height: 0.5m Weight: ~300kg each	N/A	N/A
Rock anchors	Stainless steel threaded rod, plus bolt fixing and marine grade resin	Quantity: No. 20 Contingency included: 0% Dimensions: Diameter: ~0.02 m Length: 0.3m Weight: 2 kg each	N/A	N/A
EB-1 OoS cable removal	N/A	N/A	Three core 70mm2 11kV power cable	Dimensions: Diameter: 60-110mm Length: 236m Contingency included: 10%

Type of deposit/ removal	Deposits		Removal	
	Description	Quantity & Dimensions (metric)	Description	Quantity & Dimensions (metric)
				Weight: ~19.8kg/m
Temporary Equipment Deposits below Mean High Water Springs (MHWS)				
Anchors	Delta Flipper anchors may be used for diving support vessel or pontoon support craft mooring spread.	Quantity: 4 Dimensions: Diameter: 2.4m Length: 2.6m Weight: 2 T	N/A	N/A
Mooring Chains	Attached to anchors for diving support vessel or pontoon support craft mooring spread.	Quantity: 4 Dimensions: Diameter: 0.3m Length: 54m Weight: N/A	N/A	N/A

Table 10 - Deposit Plan Schedule

10. ESTIMATED INSTALLATION DURATIONS

Table 11 summarises the indicative schedule of works relating to the proposed cable installation activities. The table shows the expected duration of each activity; however it should be noted that some may take longer or less days depending on different variables such as weather and/or operational delays. Therefore, the below should be taken as the best estimate. The licence duration being sought by SHEPD is 18 months for contingency in case the installation programme is delayed and cannot be completed before winter.

Activity	Duration (days)
PLGR and (if required) survey works	2
Boulder clearance	1
Cable pull-in operations	4
Offshore cable lay	2
Intertidal works, including trenching, split pipe installation and backfill	28

Activity	Duration (days)
Installation of offshore protection and stabilisation measures	20
TOTAL	57

Table 11 - Duration of Key Installation Activities

11. APPENDIX 1 – MARINE LICENCE APPLICATION COORDINATES

Number	Easting (m)	Northing (m)	Latitude DDM	Longitude DDM
1	595731.0	6323099.2	57° 2.483'N	7° 25.338'W
2	595709.2	6323073.3	57° 2.470'N	7° 25.360'W
3	595698.5	6323056.3	57° 2.461'N	7° 25.371'W
4	595683.3	6323019.6	57° 2.441'N	7° 25.387'W
5	595675.5	6322976.0	57° 2.418'N	7° 25.395'W
6	595674.3	6322950.4	57° 2.404'N	7° 25.397'W
7	595692.8	6322916.7	57° 2.385'N	7° 25.379'W
8	595692.2	6322897.6	57° 2.375'N	7° 25.381'W
9	595700.9	6322889.9	57° 2.371'N	7° 25.372'W
10	595832.5	6322847.7	57° 2.347'N	7° 25.243'W
11	595861.1	6322801.8	57° 2.321'N	7° 25.216'W
12	595875.4	6322732.1	57° 2.284'N	7° 25.203'W
13	595904.3	6322726.3	57° 2.280'N	7° 25.175'W
14	597670.6	6322600.0	57° 2.190'N	7° 23.432'W
15	598320.0	6322831.6	57° 2.306'N	7° 22.785'W
16	599208.9	6323233.7	57° 2.512'N	7° 21.897'W
17	601071.9	6323786.3	57° 2.785'N	7° 20.042'W
18	601533.5	6324122.6	57° 2.960'N	7° 19.578'W
19	601681.9	6324630.2	57° 3.232'N	7° 19.419'W
20	601802.2	6326120.6	57° 4.033'N	7° 19.264'W
21	601821.4	6326193.2	57° 4.072'N	7° 19.243'W
22	601931.1	6326382.4	57° 4.173'N	7° 19.130'W
23	602387.9	6326711.4	57° 4.344'N	7° 18.670'W
24	602707.9	6326964.5	57° 4.476'N	7° 18.347'W
25	602557.3	6327316.6	57° 4.668'N	7° 18.487'W
26	602394.2	6327355.1	57° 4.690'N	7° 18.648'W
27	602338.2	6327360.1	57° 4.694'N	7° 18.703'W
28	602052.7	6327179.1	57° 4.600'N	7° 18.990'W
29	601448.5	6326742.3	57° 4.373'N	7° 19.598'W
30	601243.8	6326311.8	57° 4.144'N	7° 19.811'W
31	601200.1	6325844.4	57° 3.892'N	7° 19.866'W
32	601104.8	6324756.1	57° 3.307'N	7° 19.986'W
33	601041.4	6324498.7	57° 3.169'N	7° 20.055'W
34	601015.1	6324444.5	57° 3.141'N	7° 20.082'W
35	600785.9	6324310.6	57° 3.071'N	7° 20.312'W
36	599046.8	6323799.8	57° 2.819'N	7° 22.044'W
37	598135.0	6323387.2	57° 2.608'N	7° 22.955'W
38	597600.6	6323185.1	57° 2.506'N	7° 23.488'W
39	596024.6	6323282.2	57° 2.578'N	7° 25.043'W
40	595930.2	6323210.1	57° 2.541'N	7° 25.138'W

41	595862.2	6323135.6	57° 2.501'N	7° 25.207'W
42	595796.0	6323079.5	57° 2.472'N	7° 25.274'W

Table 12 - Marine Licence Application Coordinates

12. APPENDIX 2 – INDICATIVE PONTOON/DSV AREA COORDINATES

Easting (m)	Northing (m)	Latitude DDM	Longitude DDM
Barra Landing			
597600.6	6323185.1	57° 2.490'N	7° 23.485'W
596024.6	6323282.2	57° 2.561'N	7° 25.043'W
595904.3	6322726.3	57° 2.295'N	7° 25.168'W
597670.6	6322600.0	57° 2.211'N	7° 23.433'W
Mid Route			
600785.9	6324310.6	57° 3.071'N	7° 20.312'W
601071.9	6323786.3	57° 2.785'N	7° 20.042'W
601533.5	6324122.6	57° 2.960'N	7° 19.578'W
601681.9	6324630.2	57° 3.232'N	7° 19.419'W
601728.9	6325231.7	57° 3.555'N	7° 19.358'W
601153.1	6325307.4	57° 3.604'N	7° 19.925'W
601104.8	6324756.1	57° 3.307'N	7° 19.986'W
601041.4	6324498.7	57° 3.169'N	7° 20.055'W
601015.1	6324444.5	57° 3.141'N	7° 20.082'W
Eriskay Landing			
602387.9	6326711.4	57° 4.344'N	7° 18.670'W
601931.1	6326382.4	57° 4.173'N	7° 19.130'W
601821.4	6326193.2	57° 4.072'N	7° 19.243'W
601802.2	6326120.6	57° 4.033'N	7° 19.264'W
601243.8	6326311.8	57° 4.144'N	7° 19.811'W
601448.5	6326742.3	57° 4.373'N	7° 19.598'W
602052.7	6327179.1	57° 4.600'N	7° 18.990'W