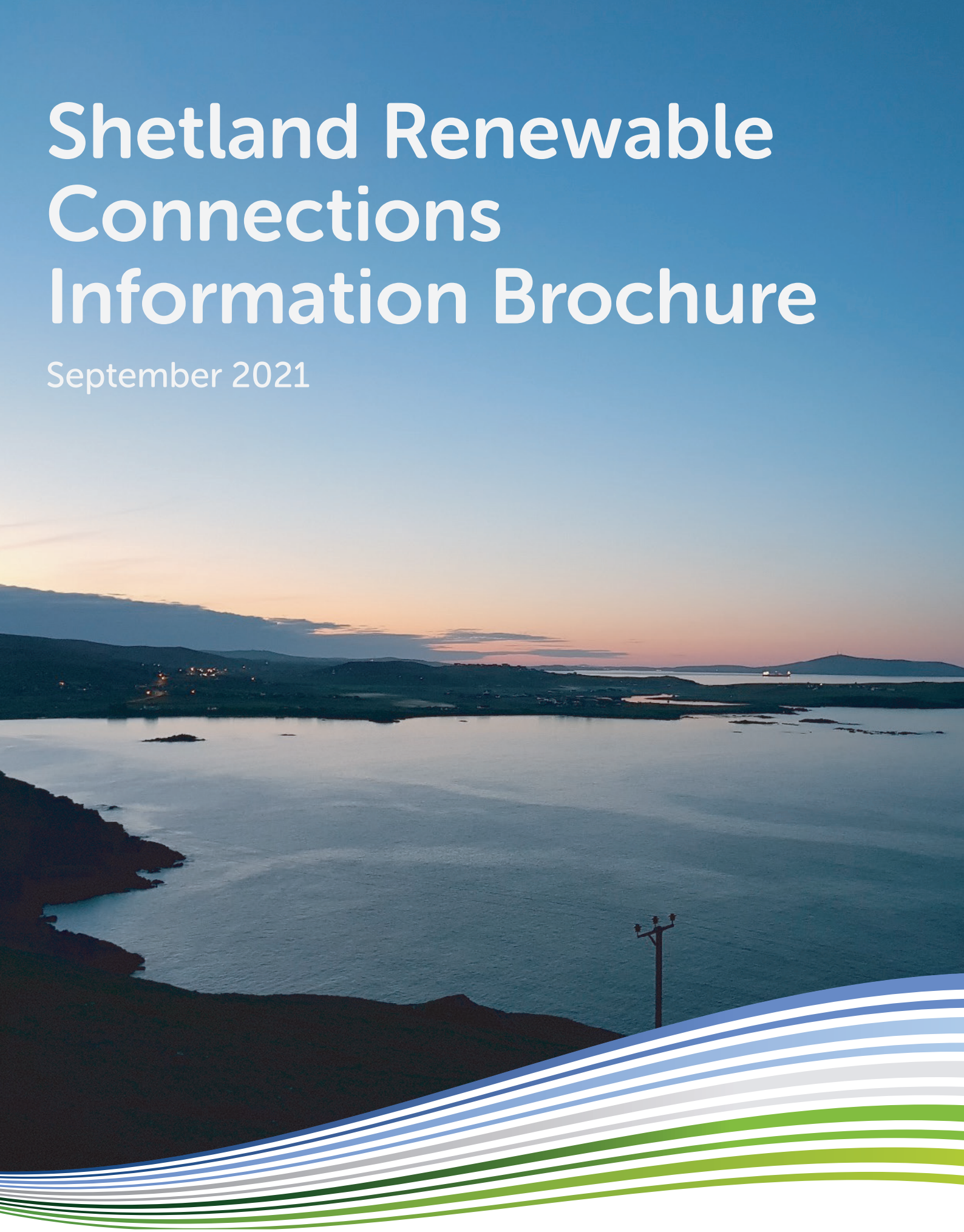
Shetland Renewable Connections Information Brochure

September 2021

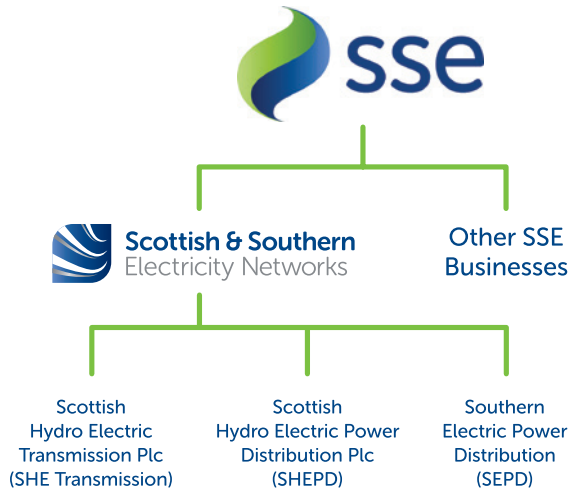


Scottish & Southern Electricity Networks

TRANSMISSION

Who we are

We are Scottish and Southern Electricity Networks Transmission (SSEN Transmission), operating under licence as Scottish Hydro Electric Transmission Plc (SHE Transmission) for the transmission of electricity in the north of Scotland.



In total we maintain about 5,000km of overhead lines and underground cables – easily enough to stretch across the Atlantic from John O'Groats all the way to Boston in the USA.

Our network crosses some of the UK's most challenging terrain – including circuits that are buried under the seabed, are located over 750m above sea level and up to 250km long.

The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link between the new sources of power and electricity users. Scottish and Southern Electricity Networks is delivering a major programme of investment to ensure that the network is ready to meet the needs of our customers in the future.

Our responsibilities

We have a licence for the transmission of electricity in the north of Scotland and we are closely regulated by the energy regulator Ofgem.

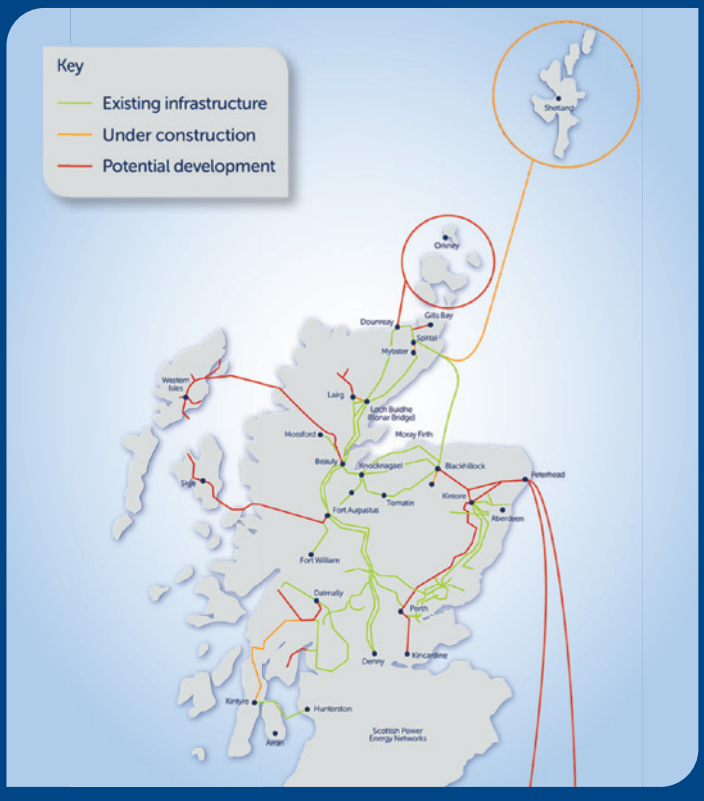
Our licence stipulates that we must develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

What is the difference between Transmission and Distribution?

Electricity Transmission is the transportation of electricity from generating plants to where it is required at centres of demand. The Electricity Transmission network, or grid, transports electricity at very high voltages through overhead lines, underground cables and subsea cables. Our transmission network connects large scale generation, primarily renewables, to central and southern Scotland and the rest of Great Britain. It also helps secure supply by providing reliable connection to the wider network of generation plans.

The Electricity Distribution network is connected into the Transmission network but the voltage is lowered by transformers at electricity substations, and the power is then distributed to homes and businesses through overhead lines or underground cables.

Overview of Transmission Projects



www.ssen-transmission.co.uk/projects/shetland-renewable-connections/

Project Need and Overview

Project Background Existing Network in Shetland

As Transmission Operator for the North of Scotland, we have a license obligation to provide connections for generators looking to connect to the GB transmission network.

There is currently significant renewable generation contracted on Shetland. To provide these generators with a connection we will need to create a new 132kV transmission network to connect from each wind farm to a new 132kV substation and Converter Station at Kergord. This is a separate project which will form part of a new High Voltage Direct Current (HVDC) Link which will enable power generation from Shetland to be transferred to the Scottish mainland via a 260km subsea cable connecting to a new Direct Current (DC) Switching Station at Noss Head in Caithness.

We are also contracted to provide a new 132kV Grid Supply Point (GSP) Substation as part of this project for Scottish and Southern Electricity Networks Distribution (SSEN Distribution) which will supply Shetland Island demand. The preferred location of the GSP is on Lerwick Port Authority land at Lower Black Hill Industrial Estate, close to the existing SSEN Distribution 33kV substation at Lerwick Power Station. Connections from Kergord 132kV substation to the GSP and from the GSP to the 33kV substation will enable island demand to be supplied from transmission network connected renewable wind generation.

To enable these connections, the following 132kV transmission infrastructure is planned:

1. A new 132kV Switching Station located on Yell to connect Energy Isles and Beaw Field Wind Farms;
2. New 132kV connections from the proposed Yell Switching Station to Energy Isles and Beaw Field Wind Farms using a combination of Overhead Line (OHL) and Underground Cable (UGC);
3. A new 132kV transmission connection from Yell Switching Station to Kergord 132kV Substation and HVDC Converter Station. This will consist of a combination of 132kV UGC, OHL and a subsea cable between Yell and mainland Shetland;
3. A combination of new 132kV UGC and OHL to connect Gremista GSP to Kergord; and
4. A new 132kV UGC to connect Mossy Hill Wind Farm to one of the Gremista connections to form a tee-connection.

Project Status Update

Our last public consultation events were held in early June where we invited feedback on the preferred location of Yell Switching Station and the preferred connection routes between Kergord, Mossy Hill Wind Farm and Gremista GSP south of Kergord. We also invited feedback on the preferred connection routes between Kergord, Yell Switching Station and Beaw Field and Energy Isles Wind Farms north of Kergord. Since then we have developed the connections to the alignment stage taking on board feedback and now invite further feedback prior to the preparation of s37 planning applications for the OHLs and a planning application for Yell Switching Station. Note the Energy Isles Wind Farm Connection Date has been moved back to April 2027 by the Customer, therefore it will not form part of this consultation event but will be part of a future event provisionally planned for 2023.

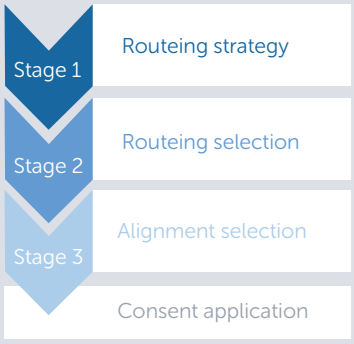
Overhead Line Routeing Process

SSEN Transmission's approach to identifying where a new onshore transmission connection is to be located follows a detailed process where technical, environmental and cost criteria are assessed and considered in balance.

Based on previous public consultation events, all feedback has been considered and implemented into Stage 3 (Alignment Stage), which is currently underway and will include feedback received after this consultation event in preparation for the Consent Application.

Overhead Line/Cable Routeing Process

SSEN Transmission's approach to identifying where a new overhead power line is to be located follows the four stages illustrated below. This project is currently at Stage 3 - alignment selection



At each stage in the process, studies are increased in detail and resolution to enable us to determine the best balance of cost, technical and environmental considerations.

This staged process leads to the eventual identification of a proposed alignment to be taken to consent application stage. Consultation with relevant stakeholders is carried out at every stage of the process.

The objective of stage 3 is to identify a "preferred alignment" for further appraisal and consultation. Preferred alignments are typically 100m wide, although may be narrower or wider in specific locations in response to certain constraints.

Baseline alignments are identified considering the following technical engineering criteria:

- Environmental design - Contaminated land and flooding;
- Topography - Terrain and waterbodies;
- Ground conditions - Peat and terrain inclination;
- Access - Existing road network and access tracks;
- Existing infrastructure - Roads, pipelines, existing utilities;
- Existing electricity network - Proximity to existing overhead lines, connectivity and crossings; and
- Operational - Maintenance, flexibility and fault finding and repair.

The Land and Environmental teams then systematically evaluate these baseline alignments and identify preferred options that reduce impacts on the environment, residents and landowners. The preferred alignments are appraised by the Engineering, Environment, Land and Project Management team.

The preferred alignments are what we are presenting for consultation and represent our best option to achieve an economically viable, technically feasible and environmentally sound solution. Following consultation with the public, statutory bodies and landowners, the preferred alignment will be taken into the next project stage which is the planning application stage (Consent Application).

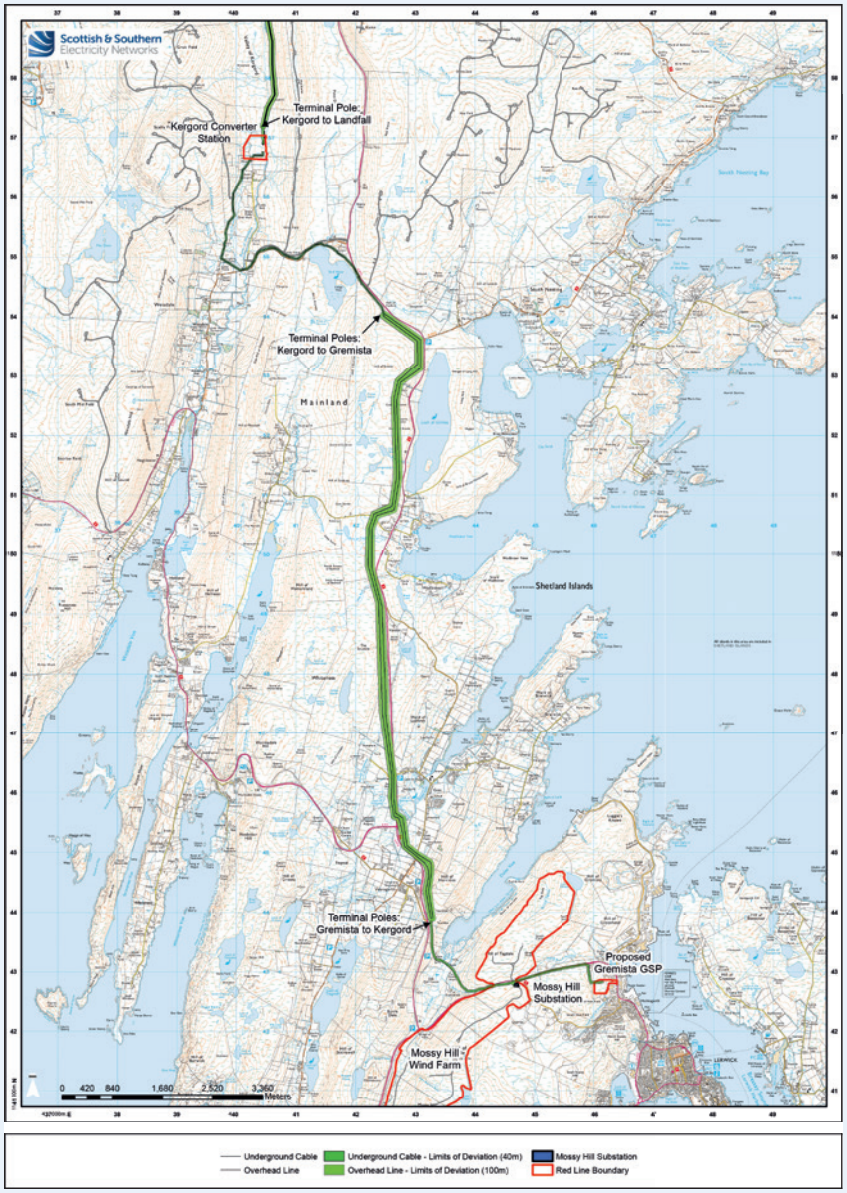
Preferred Alignments

Technically feasible alignments are assessed to identify the optimum solution for the project. Once a preferred alignment has been selected, this is taken to the stakeholders, the public and landowners to gain feedback. Information on the preferred onshore alignment is given below, and we are inviting feedback on this alignment.

Kergord Converter Station

The overhead line runs from Kergord Converter Station to Gremista GSP and Mossy Hill Wind Farm. Two trident low profile H pole overhead lines will be needed to accommodate this connection and two sections of underground cable are proposed at the approach to Kergord and to the connection points at Mossy Hill and Gremista. The preferred alignment generally follows the existing A970 road (see map below). The alignment has been chosen to mitigate potential impacts on properties and the environment.

Underground cable sections will be located at either end of the overhead line described above. These will comprise two circuits running in parallel, largely following existing roads.



Kergord to Mainland Shetland Landfall

During the Routeing stage of the project, the preferred route to connect these two areas was identified as KL1 with landfall at Firth Ness. This route had an existing oil pipeline and a number of technical constraints that have been identified which impacted the feasibility of this route going forward. Therefore, the preferred landfall has now been changed to Cul Ness and the KL3 option has become the preferred route. It is also a shorter route.

During Stage 3 of the project, onshore KL3 alignment from Kergord converter station to Cul Ness landfall has been identified and examined in detail in terms of technical, environmental and cost criteria. The preferred alignment option is a single trident low profile H pole overhead line between Kergord converter station and Cul Ness, although sections of this connection at either end will be via underground cable.

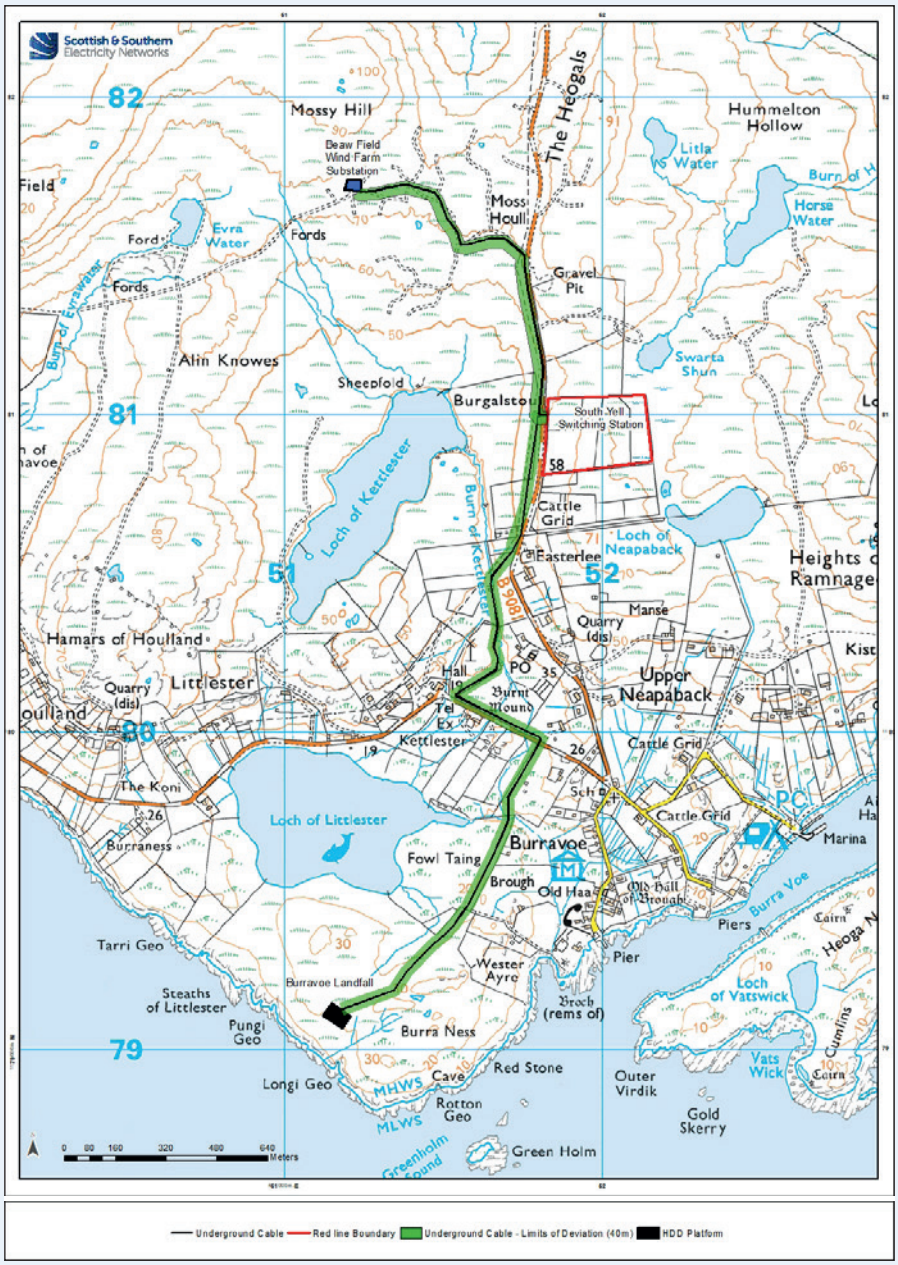
An overview map is shown below and detailed maps are available at the end of the booklet.

Yell to Beaw Field and Yell to Landfall

The connection between Beaw Field and Yell Switching Station (YB) is planned to be onshore underground cable.

The connection between Yell Switching Station and the preferred landfall location at Burravoe is also planned to be onshore underground cable. This circuit will then continue via subsea cable to the preferred mainland landfall at Cul Ness and then connect via an overhead line and a short length of underground cable into Kergord AC Substation.

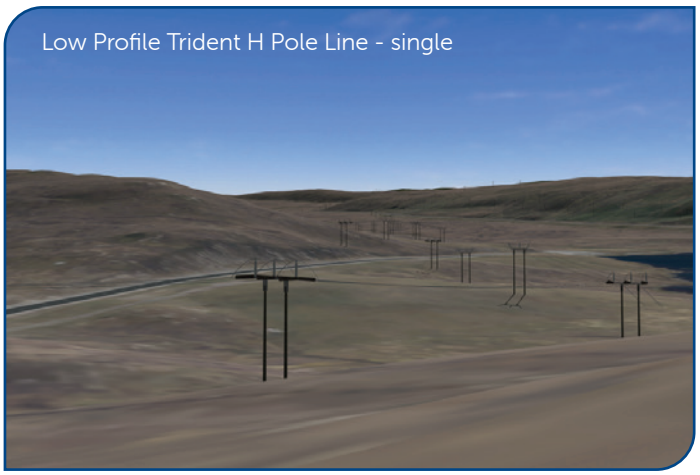
An overview map is shown below and detailed maps are available at the end of the booklet.

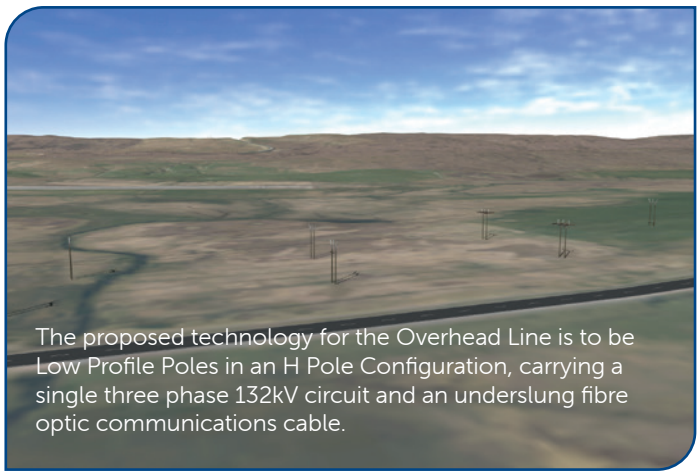


Yell to Energy Isles

The assessment of this connection is currently being deferred as the Connection Date is now April 2027. A separate consultation event will be arranged for this connection and is provisionally planned for 2023 in advance of submission of section 37..

Preferred Technology Options


Low Profile Trident H Pole Line - single


The proposed technology for the Overhead Line is to be Low Profile Poles in an H Pole Configuration, carrying a single three phase 132kV circuit and an underslung fibre optic communications cable.

The H poles will require the construction of foundations consisting of granular material, securing the pole via an anchor surround. The erection of the poles themselves will include the stringing of the lines with the electrical conductors and the fibre optic communications cable. Methods of accessing the pole locations will vary depending on the terrain and the ground conditions, with permanent or temporary stone access tracks. Temporary access tracks can be established using ground mats or alternatively all-terrain vehicles or helicopters can be used. However, existing tracks would be used where possible and upgraded as required. Subject to gradients and ground conditions, preference will be given to lower impact access solutions including the use of low pressure tracked vehicles and temporary track solutions in boggy/soft ground to reduce damage and compaction. The journey frequency would be kept to a minimum to minimise disruption to habitats and environmental impact.

Access tracks will facilitate the delivery of materials such as aggregates for the foundations, the poles themselves, insulators, the electrical conductors and cables and construction plant to the required locations. Foundations will be dug out by excavator and backfilled with suitable granular material.

The poles themselves will be erected through the use of telehandlers, cranes or helicopters to place them onto their foundations.

The conductors are strung using winches located between pole spans which assist in pulling the conductors from one pole to the next. Temporary working areas will need to be created at selected pole locations to allow the set up of the winch equipment.

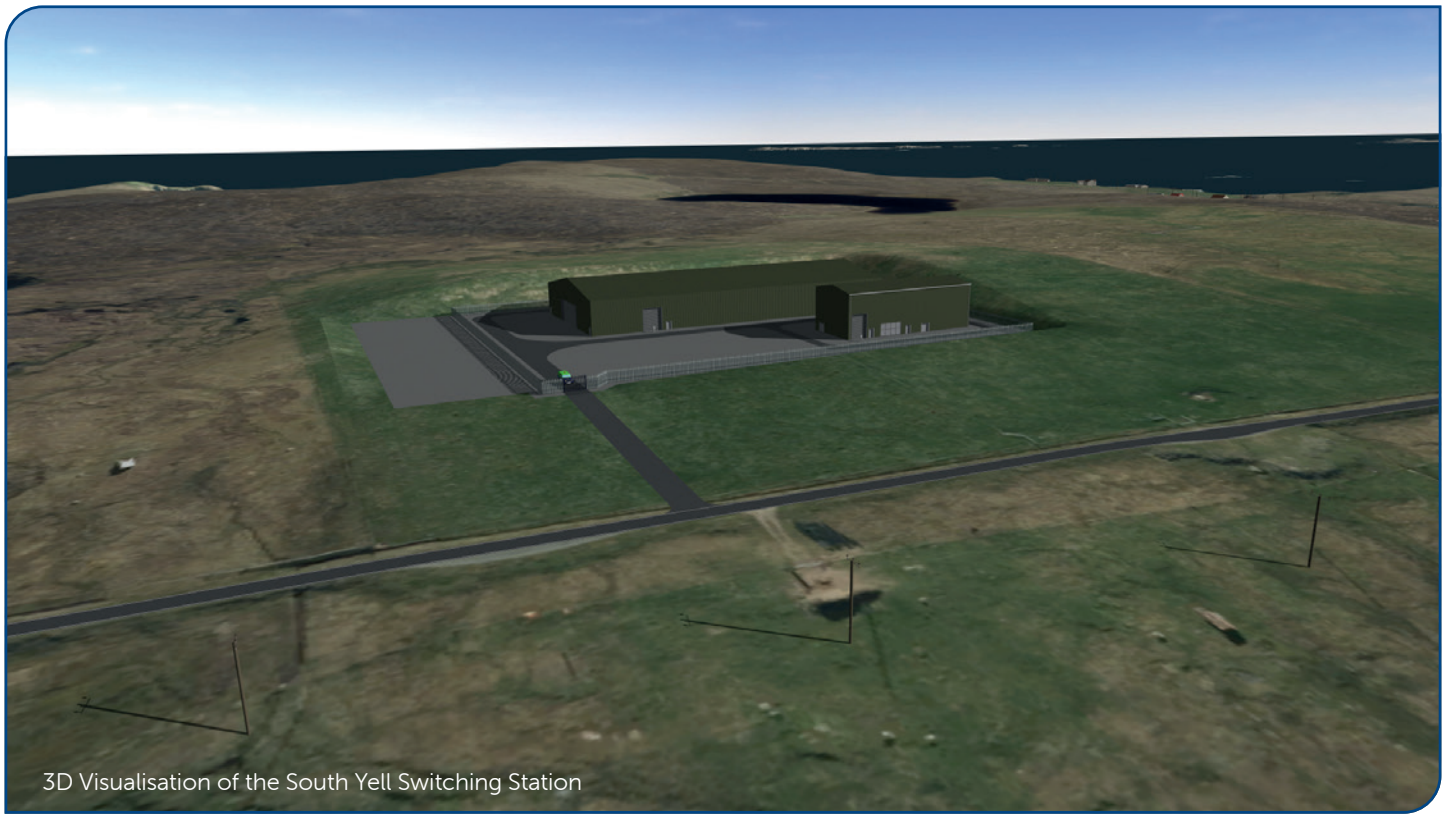
Once construction is complete temporary access infrastructure is removed and the ground reinstated to allow the natural vegetation to grow back again.


Cable chairs are used to transition from overhead lines to Underground Cables.


Erection of intermediate H poles which will constitute about 80% of the proposed routes.

South Yell 132kV Switching Station

South Yell Switching Station will house the Gas Insulated Switchgear (GIS) and accommodate the 132kV connection from Kergord Converter Station and the connections to Beaw Field and Energy Isles wind farm substations



3D Visualisation of the South Yell Switching Station

The Switching Station will act as a collector and will enable the Beaw Field and Energy Isles wind farms to connect onto the new 132kV network, supply Shetland demand and export to the Scottish mainland GB electricity network. This is more efficient than taking the Energy Isles and Beaw Field connections back separately to Kergord. It will also be available to connect future developments on Yell.

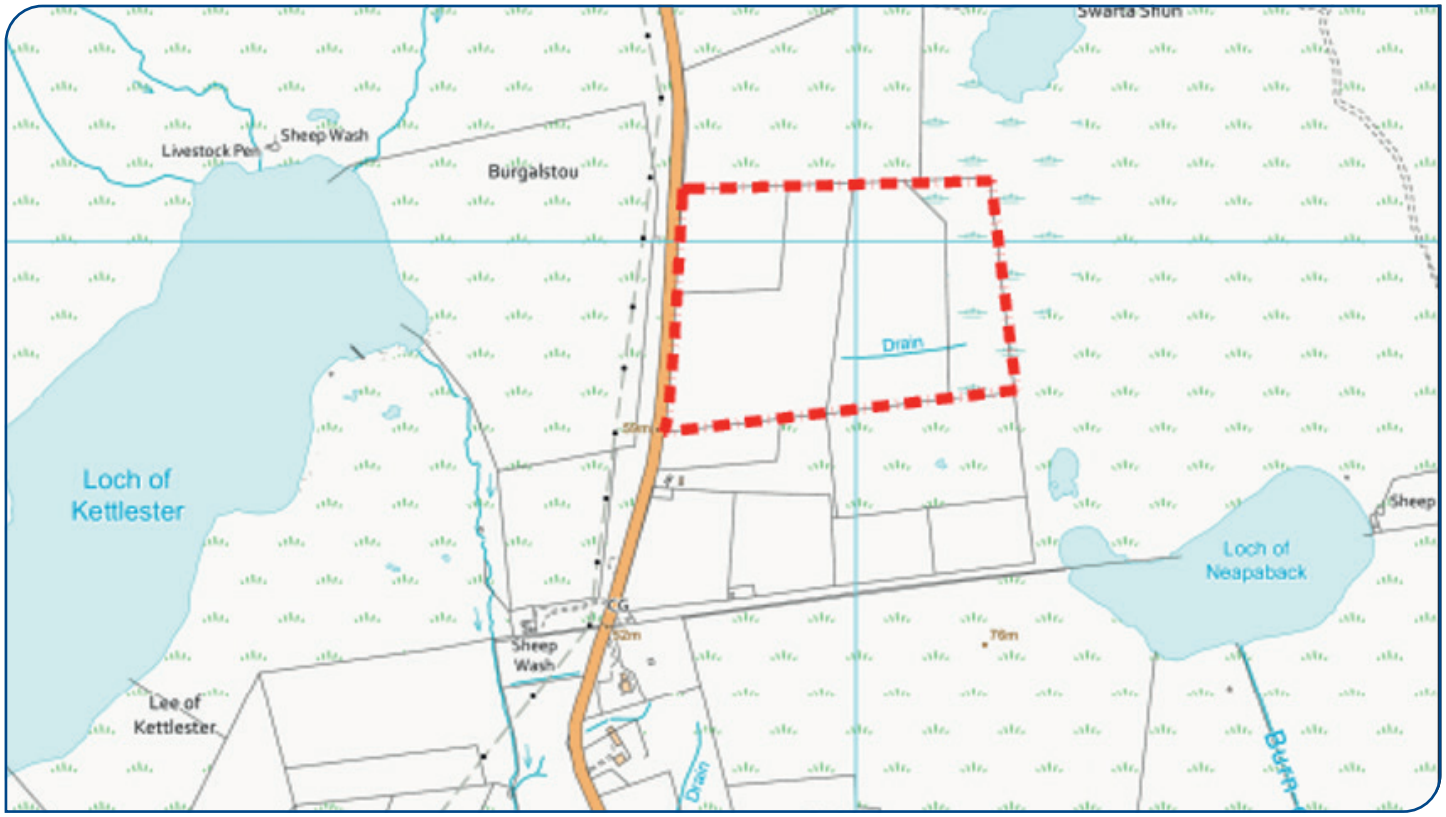
To reduce the size of the station footprint, Gas Insulated Switchgear (GIS) has been selected which requires a footprint approximately 2/3 smaller than that of traditional Air Insulated Switchgear. A permanent access road into the site will come off the B9081 road.

Preliminary GIS building dimensions are approximately 36m (long) x 16m (wide) x 13m (high). This building will be two-storey with ancillary equipment on the ground floor including control and protection panels, communication equipment, low voltage switchgear, batteries and welfare facilities.

Normally SF6 gas would be used inside the switchgear chambers, however it is listed as a greenhouse gas according to the Kyoto protocol, with 23,500 times the comparative Global Warming Potential of CO2. In accordance with SSEN policy of not using SF6 in new switchgear where feasible, the gas to be used in the Yell Switching Station switchgear will be SF6 free.

The second larger building shown in the 3D model will house equipment to support system stability and maintain security of supply on the network. The preliminary building dimensions to house this equipment are approximately 85m (long) x 40m (wide) and 13m (high).

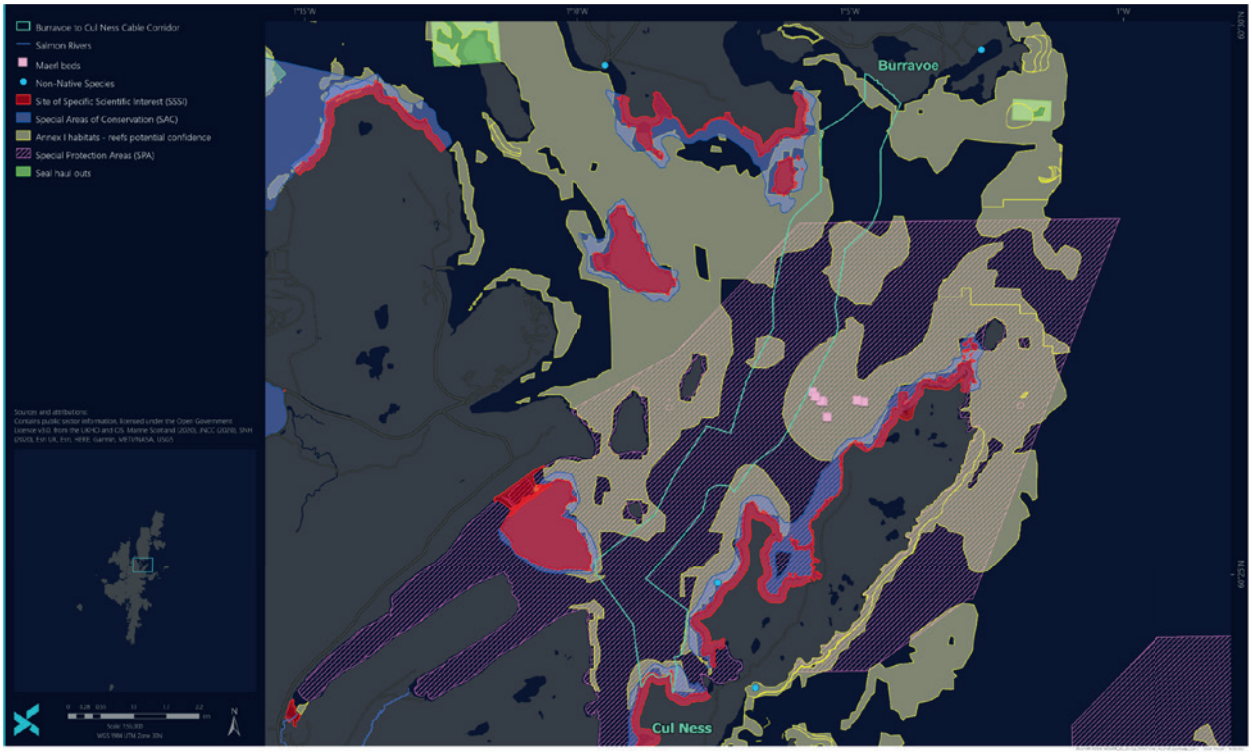
The overall platform dimensions proposed in the design are approximately 135m x 105m. Space will be reserved within the site to accommodate future development including a Grid Transformer , should this be required in the future. It is proposed this area, and an area directly adjacent to the north side of the platform be utilised as a temporary compound during construction of the Switching Station. The proposed location for the development is shown in the red line boundary map below



Proposed development boundary for the 132kV Switching Station

Subsea Cable

Subsea Cable Route Refinement



Following the public consultation event held in June 2021, further engagement with stakeholders has been undertaken, as well as internal desk top studies. Following this process, the preferred subsea cable corridor has now been amended to Cul Ness (Shetland) to Burravoe (Yell).

Now a preferred route corridor has been selected further route refinement will be undertaken to identify a route within the preferred corridor which represents the optimal balance between environmental, technical, and economic constraints. Stakeholder and public feedback are an important part of this subsea route refinement process as the project develops. A marine survey, expected to be undertaken in Q4 2021, will help inform this alignment process further, alongside the feedback received from this consultation event.

Map showing the proposed subsea cable route corridor between Mainland Shetland and Yell, and some of the 'Other Sea User' considerations within and adjacent to the corridor.

Cable corridor and landfalls

- **Preferred cable corridor:** Cul Ness (Shetland Mainland) to Burravoe (Yell)
- **Cable lengths:** 11km, depending on the selection of the subsea route and landfall location

Project Background Existing Network in Shetland

Initial bathymetric data has already been made available after a recent survey of the area was conducted in 2020, however, the planned marine survey(s) will gather further information on bathymetry, seabed sediments, tidal currents, biological features, and marine archaeology within the preferred route corridor.

The information obtained by these survey(s) will be used alongside information gained from desk-based studies and stakeholder consultation on other users of the sea (e.g., fishing, shipping, and aquaculture site operators) to refine the route alignment, assess the suitability of the seabed sediments for cable burial and help inform both the Marine Environmental Appraisal (MEA), the Cable Burial Risk Assessment (CBRA) and other consent application documents.

Consents & Licences

The following consents and licences will be sought for the Shetland - Yell HVAC link:

- Marine licence from Marine Scotland Licensing Operations Team (MS-LOT);
- Marine Works Licence from Shetland Islands Council (SIC);
- European Protected Species (EPS) licences from MS-LOT for geophysical survey operations (pre-construction and installations)

The Marine Licence and Marine Works Licence will be supported by a MEA and Digital MEA.
The scope of the MEA will be guided through specific consultation with MS-LOT, SIC and relevant statutory consultees. The MEA will assess the potential environmental impacts of the Shetland-Yell HVAC Link, with a focus on key environmental sensitivities identified through desk-based analysis, stakeholder feedback and the results of the proposed surveys.

Subsea Cable Installation

The installation of the cable(s) will be split into the following campaigns:

1. Pre-lay survey – a detailed survey may be undertaken along the consented corridor.

2. Pre-lay grapnel run - a grapnel will be used to clear any abandoned cables or discarded or abandoned fishing gear from the route.

3. Boulder/debris clearance – any boulders/debris that present a threat to subsea operations that cannot be avoided by route refinement will be removed.

4. There are two main options to enable cable burial:
   a. Pre-lay trenching – a plough is used to create a trench into which the cable is laid prior to the trench being backfilled.
   b. Post-lay trenching – the cable is laid on the seabed and a trenching tool follows the cable lowering it into the seabed.

5. Cable protection - in some areas where the seabed is very hard e.g., bedrock or where the sediment is very thin, the cable may be protected using rock placement, concrete mattress or ducting.

6. Post installation surveys – detailed surveys will be undertaken to confirm the location of the installed cable and any areas of external cable protection.

7. Shore approaches – the cable will be brought ashore either through a pre-installed Horizontal Directional Drilling (HDD) duct, or in an open trench which will be backfilled. Where an HDD is used the cable will emerge onto the seabed up to 1000m offshore.

Subsea Cable Landfalls

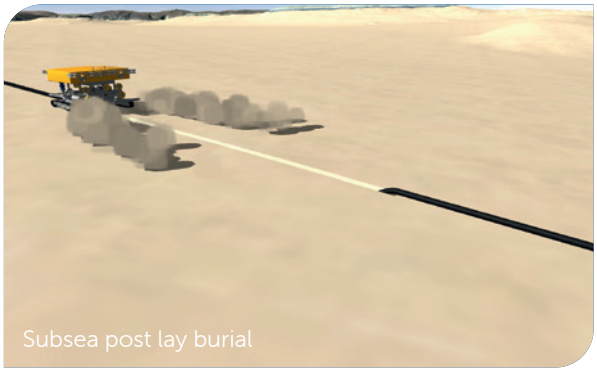
An engineering study of the coastline and nearshore areas of Mainland Shetland and Yell was undertaken.

Through a comprehensive risk appraisal process, two preferred sites have been selected.

- Cul Ness, on Shetland mainland; and
- Burravoe, on Yell

Both sites are most suited to Horizontal Directional Drilling (HDD) installation, however this is subject to confirmation of expected ground conditions by future, more involved, site investigation. Open cut trenching at Cul Ness cannot be ruled out at this stage.


HDD platform with inclined drilling rig


Subsea post lay burial

The HDD method involves drilling a borehole from a platform on land out to the sea bed using inclined drilling techniques.

Main activities would typically include:

- Creation of access routes
- Creation of a drilling platform with associated environmental controls.
- Establishment of the drilling rig and supporting equipment; and
- Drilling works including Installation and temporary sealing of cable ducts (until time comes to pull in the cables)

Planning & Consents

South Yell Switching Station and OHL connections will form an important part of the new national infrastructure on Shetland and will be subject to separate planning applications and consents.

We are currently undertaking environmental assessments which will accompany the planning applications. They will include all supporting information to justify the selection of technology, location and alignments.

Project timelines

Project	Comments	Timescales
Kergord to Gremista GSP and Mossy Hill Wind Farm	A mix of 132kV UGC and OHL. A s37 submission to Energy Consent Unit (ECU) will determine the OHL and the UGC will be installed using our Permitted Development (PD) Rights.	One s37 consent to be submitted to cover both OHLs in January 2022.
Kergord Converter Station to Yell	A mix of 132kV UGC and OHL. A s37 submission to ECU will determine the OHL and the UGC will be installed using our PD Rights. A new Switching Station on Yell will require planning consent from Shetland Islands Council (SIC).	Both s37 and planning applications are due for submission early Spring 2022.
South Yell Switching Station to Beaw Field Wind Farm	Connection will be 132kV UGC to be installed using our PD rights.	No application expected.
South Yell Switching Station to Energy Isles Wind Farm	A mix of 132kV UGC and OHL. A s37 submission to ECU will determine the OHL and the UGC will be installed using our PD Rights.	The submission of s37 has been pushed back to 2023.

Environmental

The project is currently at Stage 3 – Alignment Selection. It seeks to further refine the routeing process with the objective of defining an indicative proposed alignment which can be taken forward into the consenting processes. The overall aim is to reach a final preferred alignment for both overhead lines and underground cables, which is typically between 30m – 100m in width.

During Stage 3 the engineering, land and environmental teams systematically evaluate a variety of alignment options. The preferred alignment is the option considered to present the best opportunity to achieve an economically viable, technically feasible and environmentally acceptable alignment for consent application. Stakeholder, public and landowner feedback is an important part of this process.

Considering the Environment

The below table provides an overview of the environmental parameters that are considered during the Alignment Selection process:

Environmental Parameters	
Main Parameter	Sub-parameter
Natural Heritage	Designations
	Protected species
	Habitats
	Ornithology
	Hydrology, Geology and Hydrogeology
Cultural Heritage	Designations
	Cultural heritage assets
People	Proximity to dwellings*
Landscape & Visual	Designations
	Character
	Visual*
Land Use	Agriculture
	Recreation
Planning	Proposals

* Only considered for overhead line options

A number of tasks have been undertaken when identifying and analysing alignment options. These include:

- Desk-based review of initial alignment options;
- Site visits by the project landscape architect and SHE Transmission to review the alignment options on site and review environmental and technical considerations;
- Habitat surveys;
- Protected species surveys;
- Review of information from ornithological surveys undertaken to date;
- Workshops to review initial alignment options and suggested alternatives; and
- Review of comments received from stakeholders from public consultation events.

Project Timeline

Current forecasted programme subject to change

September 2021

- Pre-application public and statutory body consultation on selection of technology, connection alignments and South Yell Switching Station location.

- Pre-application public and statutory body consultation on selection of South Yell subsea cable route and landfall locations.

Q3/Q4 2023

- Commence construction of connections for Gremista GSP, Mossy Hill Wind Farm, South Yell Switching Station, Beaw Field Wind Farm.

April 2025

- Energisation of South Yell Switching Station and connection.

- Energisation of Mossy Hill Wind Farm and connection.

- Energisation of Beaw Field Wind Farm and connection

April 2027

- Energisation of Energy Isles Wind Farm and connection.

Q1/Q2 2022

- South Yell Switching Station planning application submission.

- Subsea cable Marine licence application submission.

Q2 2023

- S.37 planning applications for connections

November 2024

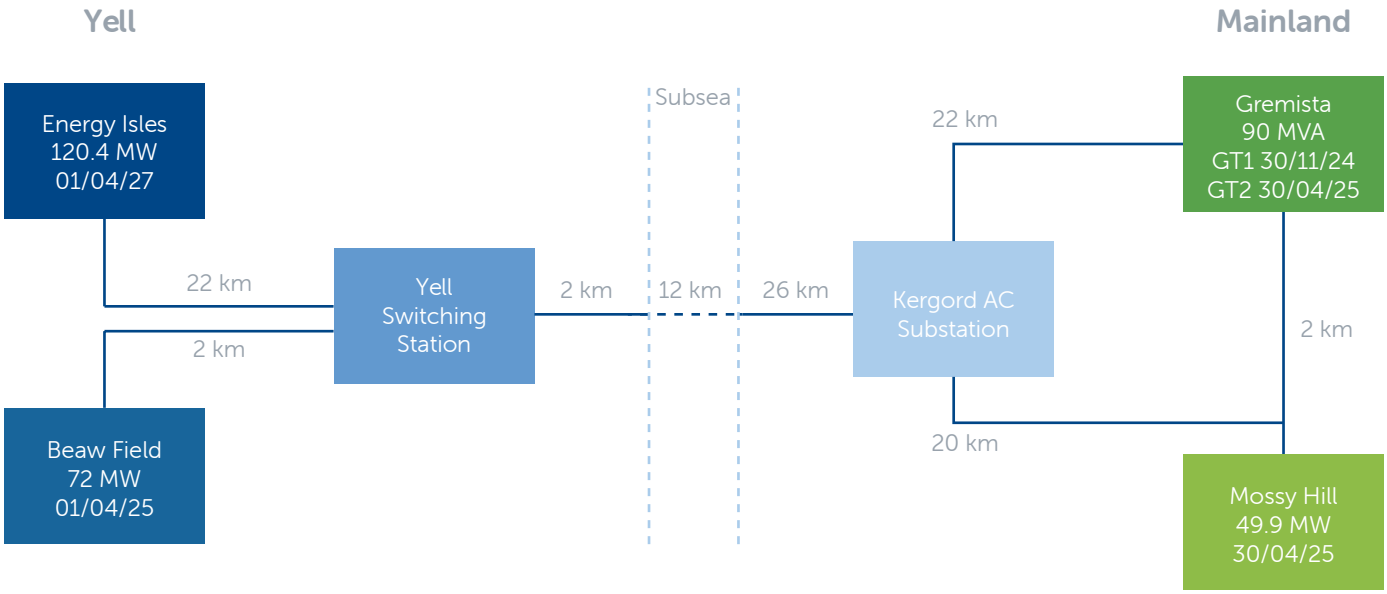
- Energisation of Gremista connection and GSP

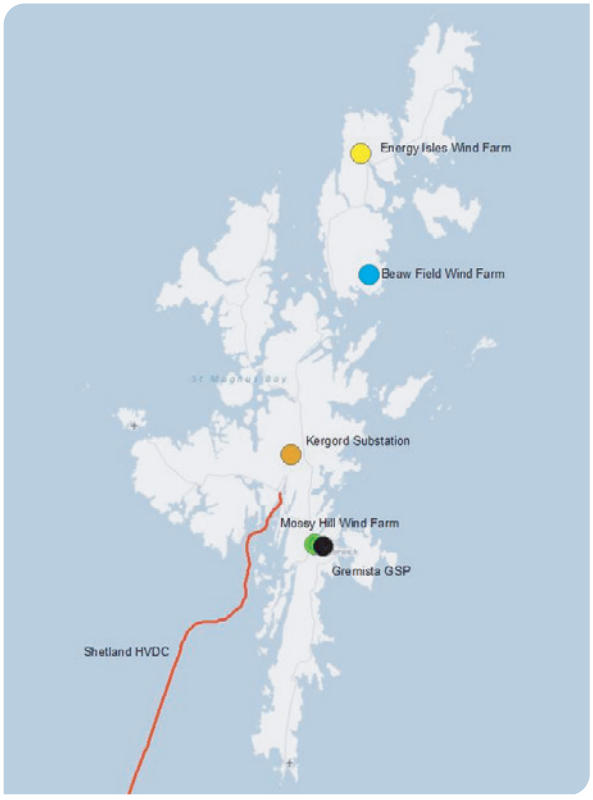
Q3 2025

- Commence construction of connection for Energy Isles Wind Farm.

Project Diagram

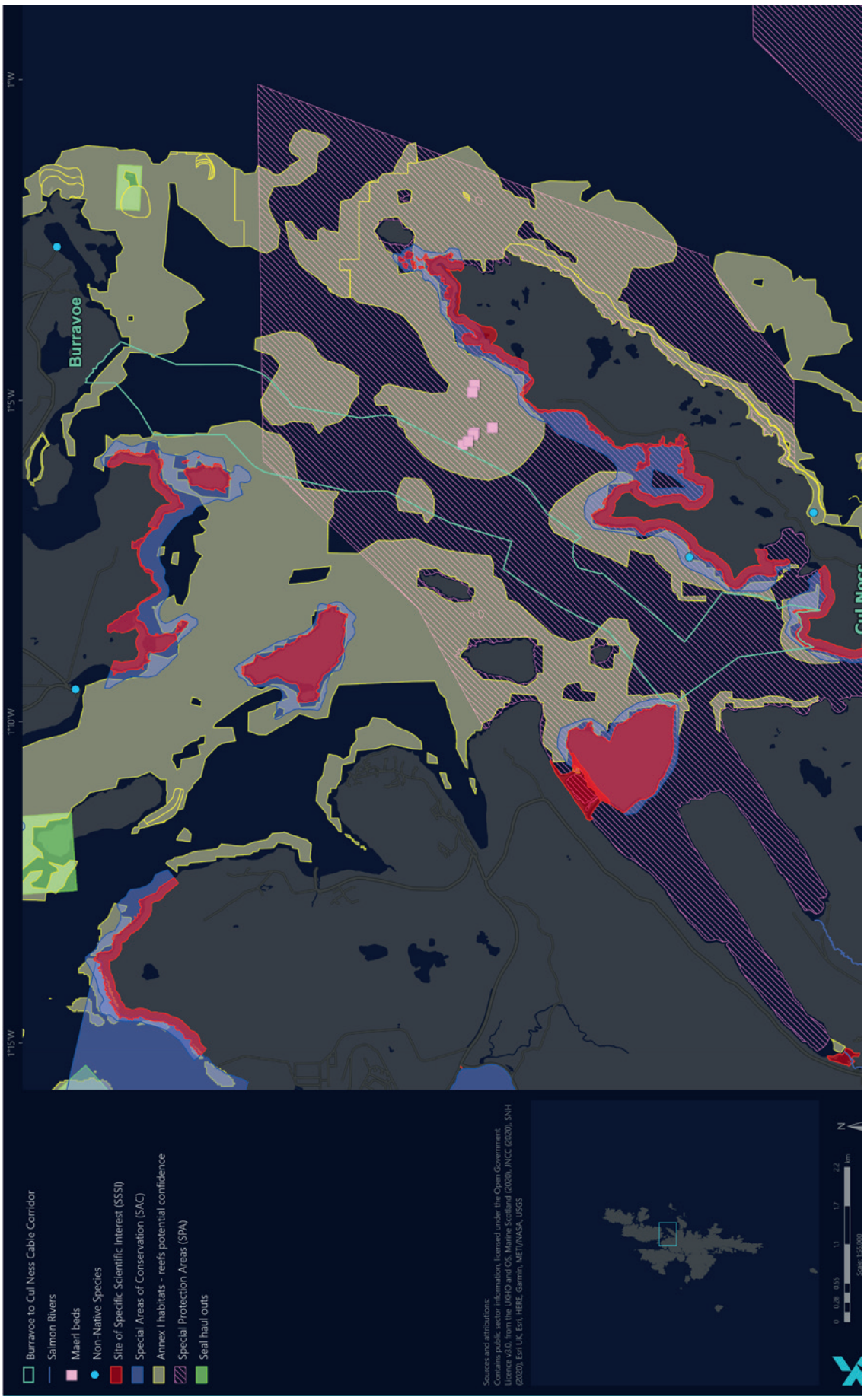
Planned 132 kV Transmission Infrastructure



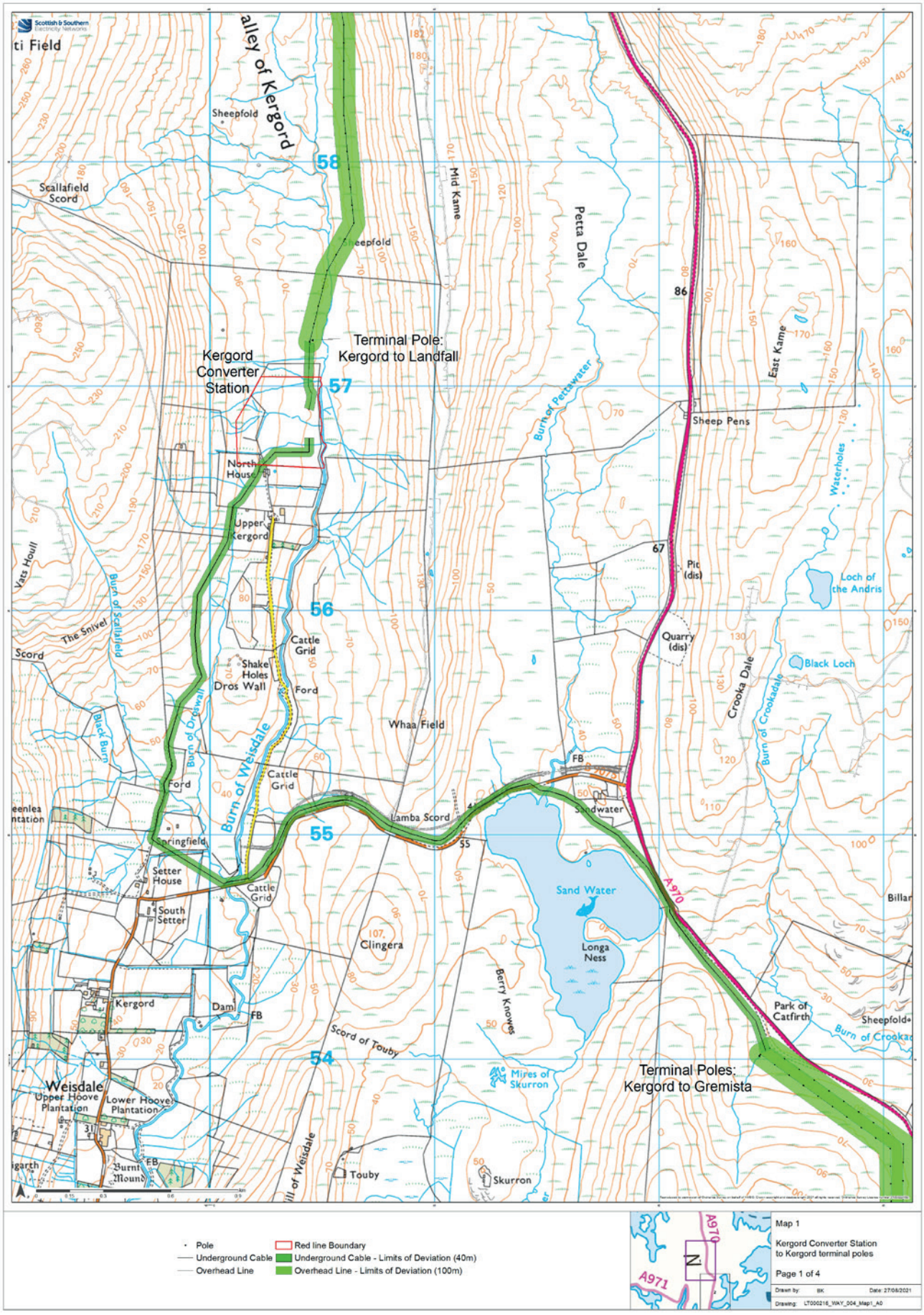


User	Type	Site
Gremista Grid Supply Point (GSP)	Demand Distribution (SHEPD)	90 MVA GT
Mossy Hill Windfarm	Onshore Wind (Peel)	49.9 MW
Beaw Field Windfarm	Onshore Wind (Peel)	72 MW
Energy Isles Windfarm	Onshore Wind (Stratkraft)	120.4 MW

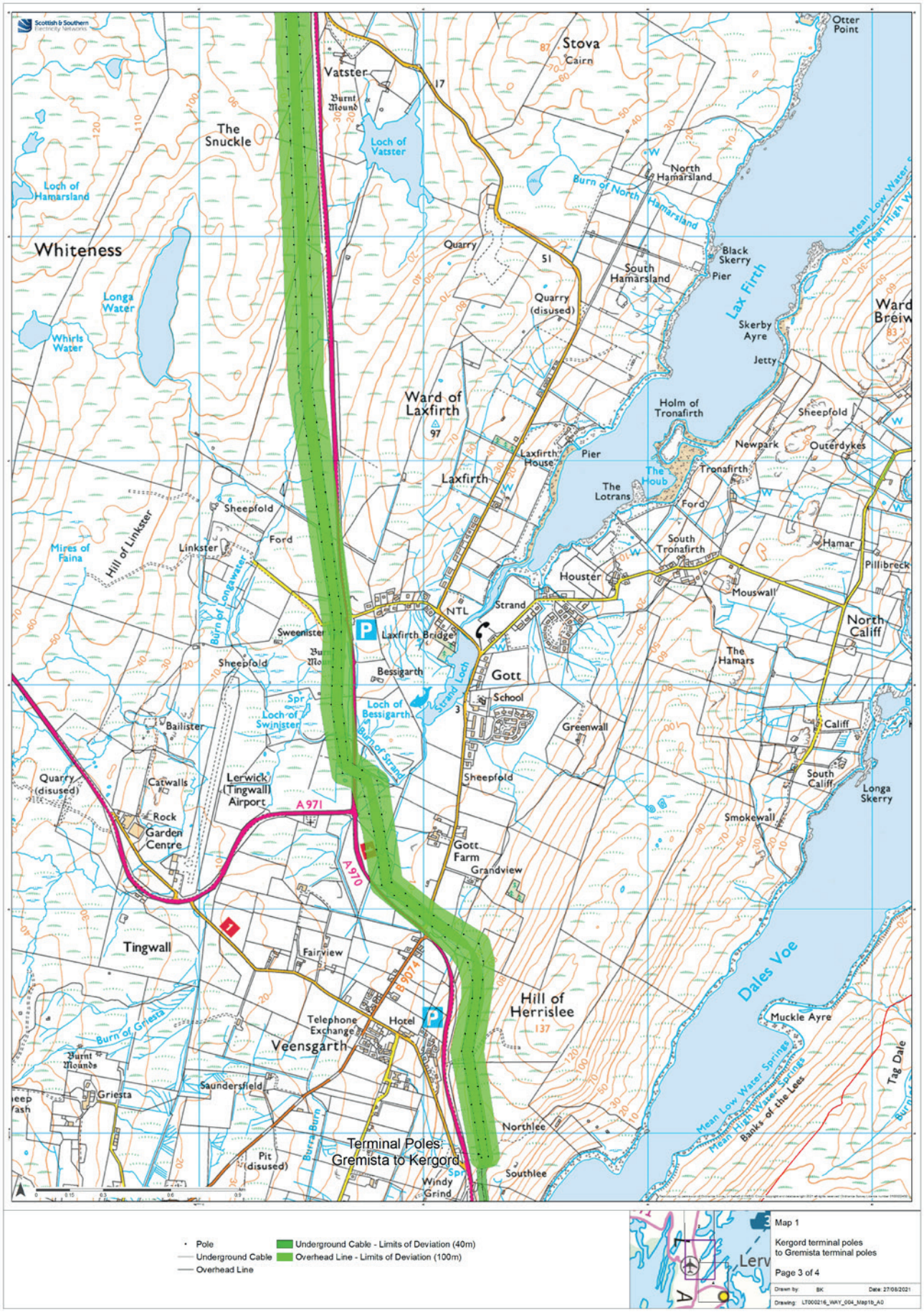
Maps


Burravoe
Cul Ness
1°W
1°5'W
1°10'W
1°15'W
Burravoe to Cul Ness Cable Corridor
Salmon Rivers
Maerl beds
Non-Native Species
Site of Specific Scientific Interest (SSSI)
Special Areas of Conservation (SAC)
Annex I habitats - reefs potential confidence
Special Protection Areas (SPA)
Seal haul outs
Sources and attributions
Contains public sector information licensed under the Open Government Licence v3.0. from the UKHO and OS, Marine Scotland (2020), JNCC (2020), SNH (2020), Esri UK, Esri, HERE, Garmin, METI/NASA, USGS
N
0 0.28 0.55 1.1 1.7 2.2 km
Scale 1:55,000


Burravoe
Cul Ness
NINIAN SHORT WATER CROSSING (PL10)
CORMORANT A TO SULLOM VOE
Anchorage Areas
Marinas
Waste water discharge sites
Aquaculture sites
Offshore lease areas for shellfish and aquaculture
Cables
Power - active
Power - disused
Hydrocarbon pipelines
Active
Precommission
Removed
Category of wreck
dangerous wreck
non-dangerous wreck
wreck showing any portion of hull or superstructure
Sources and attributions:
Contains public sector information, licensed under the Open Government Licence v3.0, from the UKHO and OS. Marine Scotland (2020), JNCC (2020), SNH (2020), Esri UK, Esri, HERE, Garmin, METI/NASA, USGS


Terminal Pole: Kergord to Landfall
Kergord Converter Station
Terminal Poles: Kergord to Gremista
Valley of Kergord
Sheepfold
Scallafield Scord
Mid Kame
Petta Dale
East Kame
Burn of Pettawater
Sheep Pens
Waterholes
Loch of the Andris
Pit (dis)
Quarry (dis)
Black Loch
Crooka Dale
Burn of Crookadale
North House
Upper Kergord
Vats Houll
Burn of Scallafield
The Snivel
Scord
Cattle Grid
Shake Holes
Dros Wall
Ford
Whaa Field
Burn of Orquil
Black Burn
Burn of Weisdale
Springfield
Setter House
South Setter
Kergord
Dam
FB
Weisdale
Upper Hoove Plantation
Lower Hoove Plantation
Burnt Mound
Lamba Scord
Sandwater
Sand Water
Longa Ness
Clingera
Berry Knowes
Scord of Touby
Mires of Skurron
Touby
Skurron
Park of Catfirth
Sheepfold
Burn of Crooka
A970
A971
58
57
56
55
54
86
67
Pole
Underground Cable
Overhead Line
Red line Boundary
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Map 1
Kergord Converter Station to Kergord terminal poles
Page 1 of 4


Terminal Poles:
Kergord to Gremista
Mainland
Loch of Girlsta
Wadbister Voe
Catfirth
Sheepfold
Burn of Crookadale
Quoys of Catfirth
The Haa
Quarry (dis)
Chambered Cairn (rems of)
Cattle Gr
B 9075
Vallin Ness
Mires of Skurron
Skurron
Burn of Sandwater
Hill of Skurron
Hill of Bretto
Sneugie of Long Hill
Loura Voe
Little Holm
MHWS
MLWS
Long Hill
Sheep Dip
Cuppa Water
Burn of Cuppawater
Hollie Burn
Skeo Taing
The Hurd
Pit
Slaggan
Brunt Hamarsland
South Pund
Sheep Wash
Kurkigarth
Girsie Loch
Scord of Cuckron
Longnecked
Quach Wall
Hill of Cuckron
Gravel Pit
Hill of Brunt Hamarsland
Cattle Grid
Tirsa Water
Gew Stanes
Burn of Tirsawater
Reservoir
Ritta Taing
Girlsta
Pier
Trolla Water
Burn of Chalder
Deep Scord
Haa of Girlsta
Sheep Dip
NTL
Chalder Ness
Mitten
Wadbister Ness
Voe-head
North Knowe of Bodwell
South Knowe of Bodwell
Jetty
Scord of Wadbister
Cattle Grid
Zoar
Wadbister
Garth
Scord
Ayre of Breiwick
Black Loch
Gilsa Burn
Sand Geos
Otter
42
43
44
45
Pole
Underground Cable
Overhead Line
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Map 1
Kergord terminal poles
to Gremista terminal poles
Page 2 of 4
Drawn by: BK
Date: 27/08/2021
Drawing: LT000216_WAY_004_Map1b_A0


Scottish & Southern Electricity Networks
Vatster
Burnt Mound
The Snuckle
Loch of Vatster
Stova
Cairn
Otter Point
Loch of Hamarsland
Whiteness
Longa Water
Whirls Water
Quarry
Quarry (disused)
North Hamarsland
Burn of North Hamarsland
Black Skerry
Pier
South Hamarsland
Lax Firth
Mean Low Water
Mean High W
Ward Breiw
Skerby Ayre
Jetty
Ward of Laxfirth
Holm of Tronafirth
Sheepfold
Newpark
Outerdykes
Laxfirth House
Pier
Laxfirth
The Houb
Tronafirth
The Lotrans
Ford
Hill of Linkster
Mires of Faina
Linkster
Sheepfold
Ford
South Tronafirth
Hamar
Pillibreck
Houster
Mouswall
NTL
Strand
Laxfirth Bridge
Sweenister
Burn of Longwater
Sheepfold
Bessigarth
Loch of Bessigarth
Strand Loch
Gott
School
Greenwall
North Califf
The Hamars
Califf
South Califf
Longa Skerry
Smokewall
Ballister
Loch of Swinjster
Burn of Strand
Quarry (disused)
Catwalls
Lerwick (Tingwall) Airport
A 971
Rock
Garden Centre
A 970
Gott Farm
Grandview
Sheepfold
Tingwall
Fairview
B 9074
Hill of Herrislee
Dales Voe
Muckle Ayre
Telephone Exchange
Hotel
Veensgarth
Burn of Griesta
Burnt Mounds
Griesta
Saundersfield
Burra Burn
Pit (disused)
Terminal Poles: Gremista to Kergord
Windy Grind
Northlee
Southlee
Mean Low Water Springs
Mean High Water Springs
Banks of the Lees
Tag Dale
Pole
Underground Cable
Overhead Line
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Map 1
Kergord terminal poles to Gremista terminal poles
Page 3 of 4
Drawn by: BK
Date: 27/08/2021
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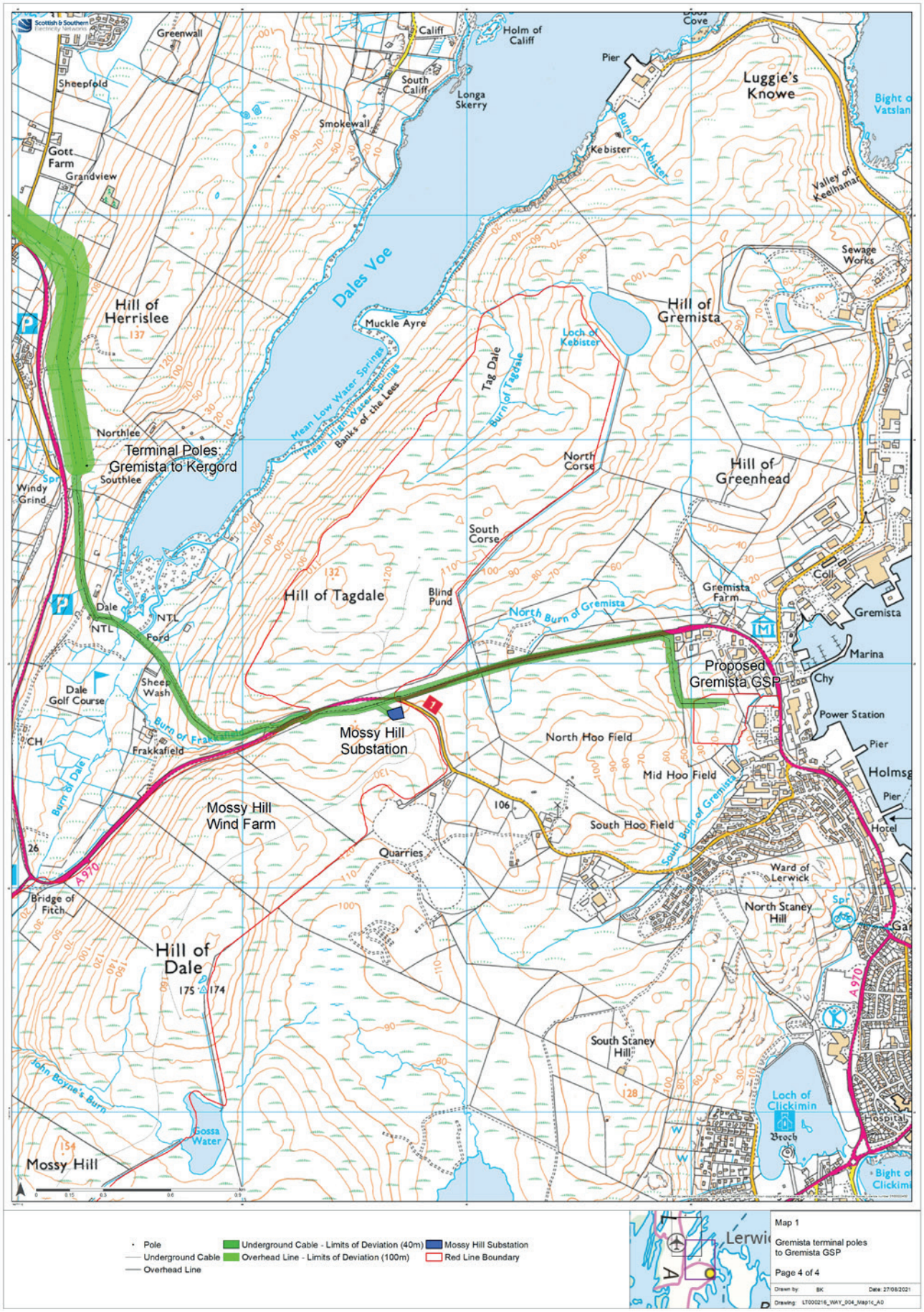
Greenwall
Sheepfold
Gott Farm
Grandview
Califf
Holm of Califf
South Califf
Longa Skerry
Smokewall
Pier
Luggie's Knowe
Burn of Kebister
Kebister
Valley of Keelhamar
Sewage Works
Dales Voe
Hill of Herrislee
Muckle Ayre
Mean Low Water Springs
Mean High Water Springs
Banks of the Lees
Loch of Kebister
Tag Dale
Burn of Tagdale
Hill of Gremista
Northlee
Terminal Poles: Gremista to Kergord
Southlee
Windy Grind
North Corse
Hill of Greenhead
South Corse
Hill of Tagdale
Blind Pund
Gremista Farm
Coll
Gremista
North Burn of Gremista
Dale
NTL
Ford
Marina
Proposed Gremista GSP
Chy
Power Station
Dale Golf Course
Sheep Wash
Burn of Frakkafield
Frakkafield
Mossy Hill Substation
North Hoo Field
Pier
Holmsg
Mid Hoo Field
Burn of Dale
Mossy Hill Wind Farm
South Hoo Field
South Burn of Gremista
Hotel
Quarries
Ward of Lerwick
Bridge of Fitch
A970
North Staney Hill
Hill of Dale
South Staney Hill
John Boyne's Burn
Gossa Water
Loch of Clickimin
Broch
Mossy Hill
Bight of Clickimi
Pole
Underground Cable
Overhead Line
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Mossy Hill Substation
Red Line Boundary
Lerwi
Map 1
Gremista terminal poles to Gremista GSP
Page 4 of 4
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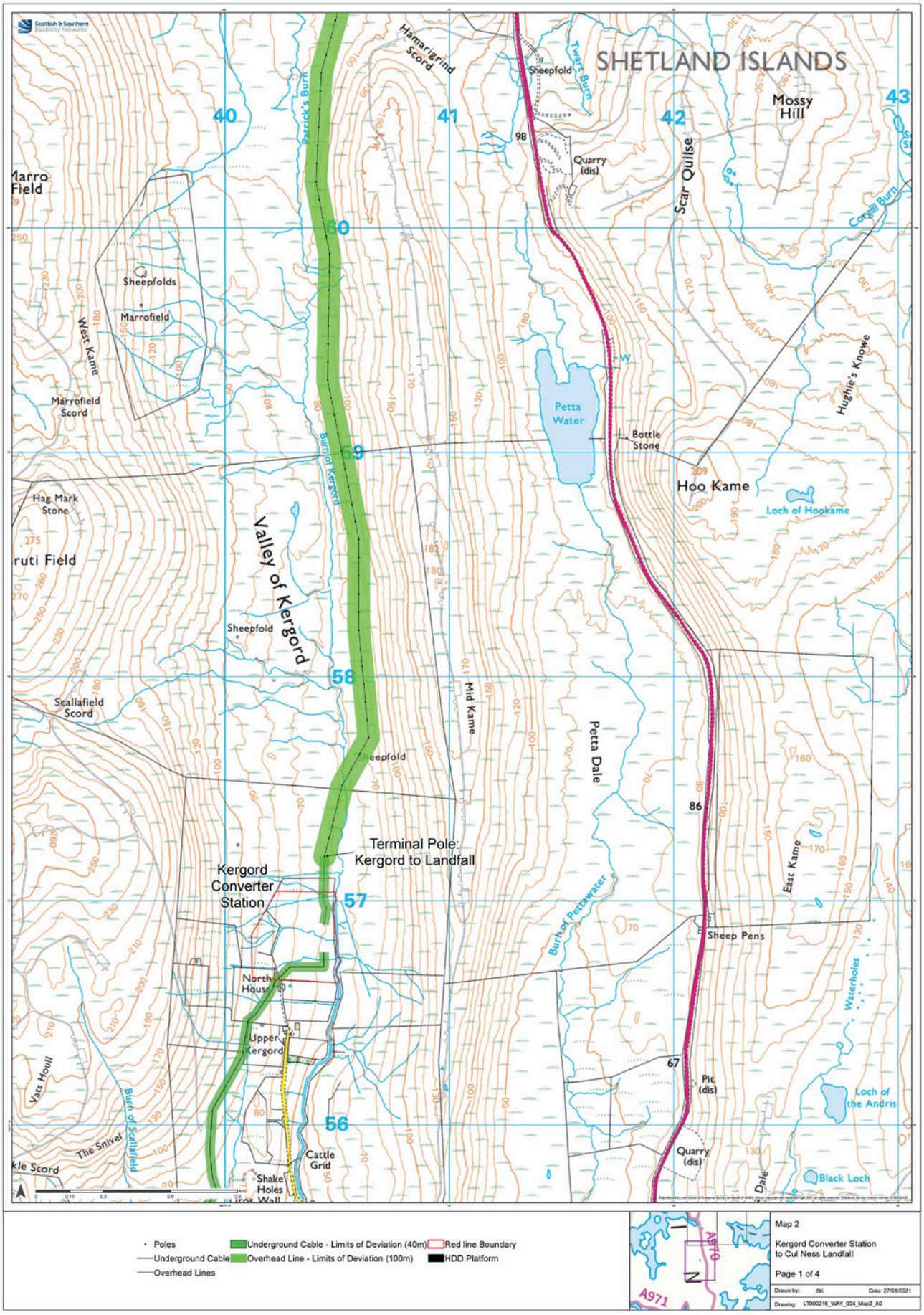
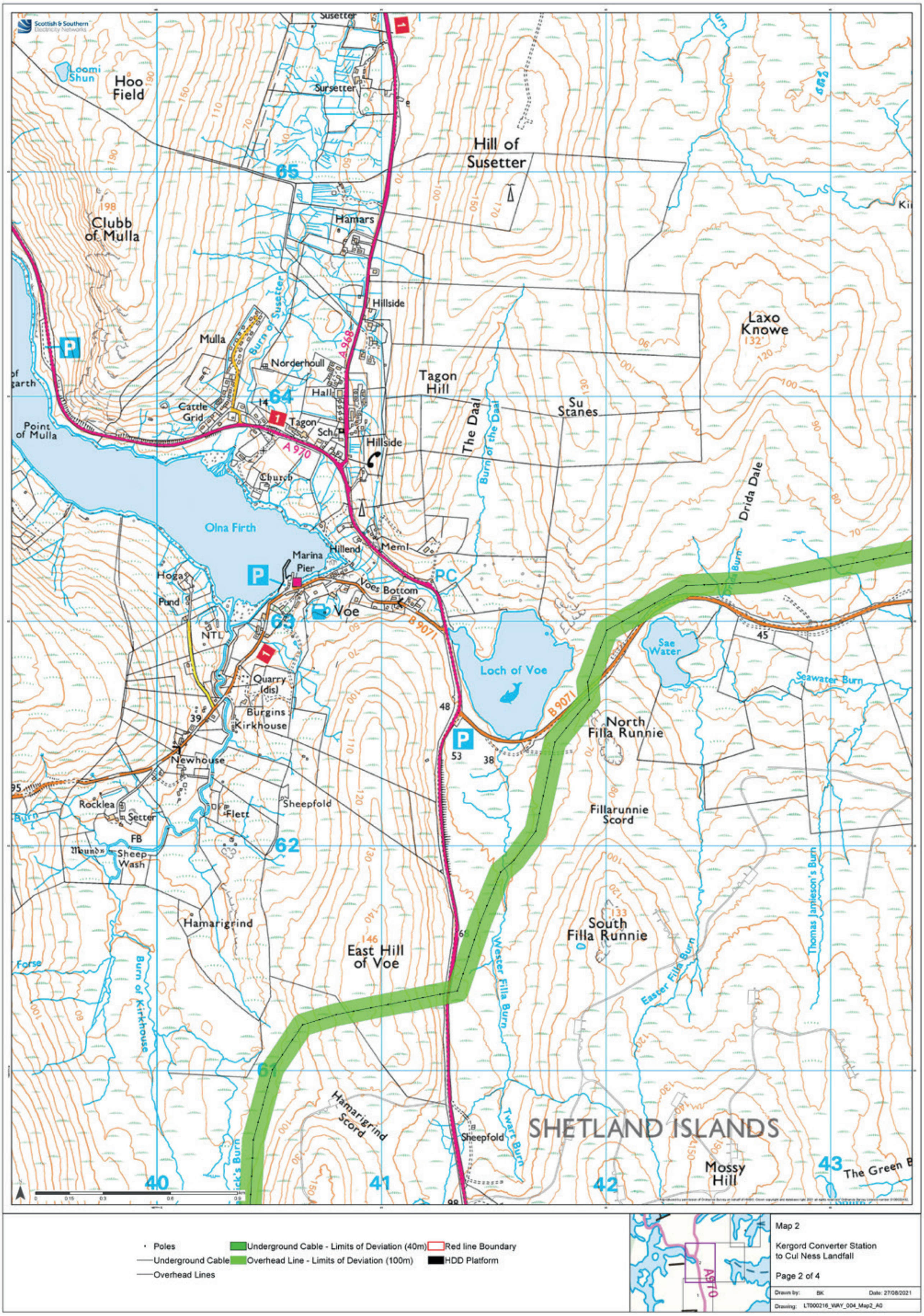

SHETLAND ISLANDS
Mossy Hill
Scar Quilse
Corgill Burn
Hughie's Knowe
Twart Burn
Sheepfold
Quarry (dis)
Hamarigrind Scord
Patrick's Burn
Marro Field
Sheepfolds
Marrofield
West Kame
Marrofield Scord
Petta Water
Bottle Stone
Hoo Kame
Loch of Hookame
Burn of Kergord
Valley of Kergord
Hag Mark Stone
ruti Field
Sheepfold
Scallafield Scord
Mid Kame
Petta Dale
Terminal Pole: Kergord to Landfall
Kergord Converter Station
North House
Upper Kergord
Burn of Pettawater
East Kame
Sheep Pens
Waterholes
Loch of the Andris
Vats Houll
Burn of Scallafield
The Snivel
Cattle Grid
Shake Holes
Quarry (dis)
Black Loch
40
41
42
43
60
59
58
57
56
98
86
67
Poles
Underground Cable
Overhead Lines
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Red line Boundary
HDD Platform
A970
A971
N
Map 2
Kergord Converter Station to Cul Ness Landfall
Page 1 of 4
Drawn by: BK
Date: 27/08/2021
Drawing: LT000216_WAY_004_Map2_A0


Hoo Field
Loomi Shun
Clubb of Mulla
Hill of Susetter
Susetter
Sursetter
Hamars
Hillside
Mulla
Norderhoull
Hall
Tagon
Tagon Hill
Cattle Grid
Point of Mulla
Church
Olna Firth
Marina Pier
Hillend
Voes Bottom
Voe
Hogan
Pund
NTL
Quarry (dis)
Burgins
Kirkhouse
Newhouse
Rocklea
Setter
Flett
Sheepfold
Sheep Wash
Hamarigrind
Burn of Kirkhouse
East Hill of Voe
Loch of Voe
Sae Water
Seawater Burn
North Filla Runnie
Fillarunnie Scord
South Filla Runnie
Wester Filla Burn
Easter Filla Burn
Thomas Jamieson's Burn
Laxo Knowe
Su Stanes
The Daal
Burn of the Daal
Drida Dale
Hamarigrind Scord
Twart Burn
Mossy Hill
SHETLAND ISLANDS
The Green
A 970
A 968
B 9071
Poles
Underground Cable
Overhead Lines
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Red line Boundary
HDD Platform
Map 2
Kergord Converter Station to Cul Ness Landfall
Page 2 of 4
Drawn by: BK
Date: 27/08/2021
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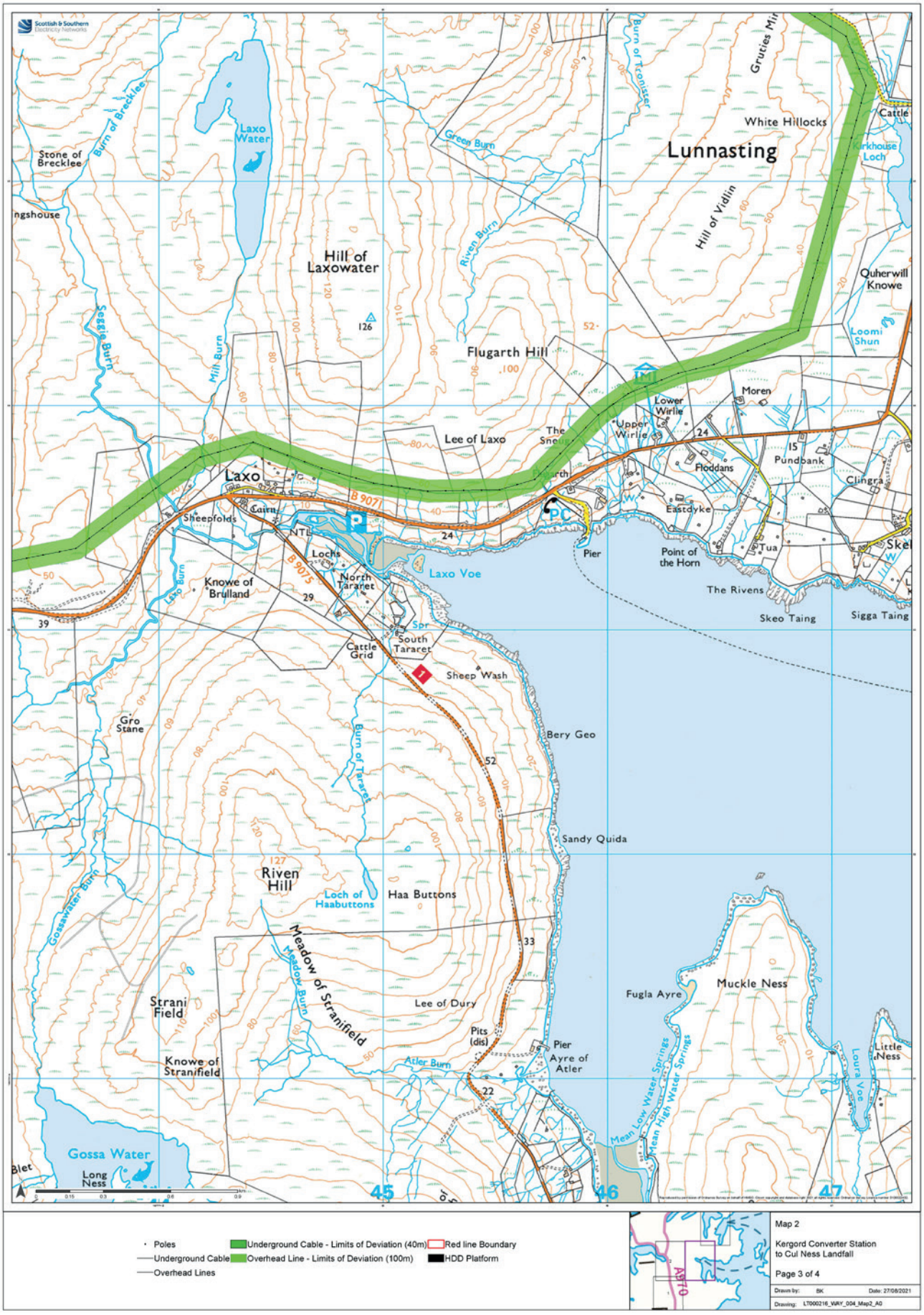
Laxo Water
Stone of Brecklee
Burn of Brecklee
Hill of Laxowater
Green Burn
Burn of Teonister
Lunnasting
White Hillocks
Gruties
Hill of Vidlin
Quherwill Knowe
Loomi Shun
Flugarth Hill
Riven Burn
Seggie Burn
Mill Burn
Lee of Laxo
Moren
Lower Wirlie
Upper Wirlie
Floddans
Pundbank
Clingra
Eastdyke
Laxo
Cairn
Sheepfolds
B 9071
B 9075
NTL
Locks
North Tararet
South Tararet
Laxo Voe
Pier
Point of the Horn
The Rivens
Skeo Taing
Sigga Taing
Knowe of Brulland
Laxo Burn
Cattle Grid
Sheep Wash
Gro Stane
Burn of Tararet
Bery Geo
Sandy Quida
Riven Hill
Loch of Haabuttons
Haa Buttons
Gossawater Burn
Meadow of Stranifield
Meadow Burn
Lee of Dury
Strani Field
Knowe of Stranifield
Pits (dis)
Pier
Ayre of Atler
Atler Burn
Fugla Ayre
Muckle Ness
Little Ness
Loura Voe
Mean Low Water Springs
Mean High Water Springs
Gossa Water
Long Ness
45
46
47
Poles
Underground Cable
Overhead Lines
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Red line Boundary
HDD Platform
A970
Map 2
Kergord Converter Station to Cul Ness Landfall
Page 3 of 4
Drawn by: BK
Date: 27/08/2021
Drawing: LT000216_WAY_004_Map2_A0


Noness Head
Clandermires
Homestead
Moastra
Trea Wick
Mill Burn
Clingra Banks
Sandwick
Madge's Head
Sand Wick
The Sculti
Punda Geo
Cul Ness Landfall
Cul Ness
Terminal Pole
Landfall to Kergord
Pund
Grames Ness
Ward of Setter
Bailie's Knowe
Loch of Setterness
Burnt Mounds
Northgrind Loch
Sheepfold
Cattle Grid
Ward of Loomishun
Skelder Taing
Burnt Mound
Skeo Ness
West Lunna Voe
Lunna
Loomi Shun
The Skerry
Jetty
Lunna House
Church (rems of)
Lunna Kirk
Croolar
Hunter's Monument
East Lunna Voe
Cave
Muddy Loch
Hellam
Cattle Grid
Sandrift Skerries
Swarta Skerry
The Taing
Swining Voe
Cul Houb
MLWS
MHWS
Gluss Burn
Quadaberg
Mean High Water Springs
Mean Low Water Springs
South Hill of Lunna
Cattle Grid
Muckle Holm
Vidlin Voe
Little Holm
Grunna Voe
Leidie
Pier
Waterfalls
Swining
Vall Ayre
Vallayre
Urra Taing
Cattle Grid
Midfield
March
Cattle Grid
Springfield
Tronister
Vidlin Ness
Pier
Kirkabister
North hill
Litlagill
Quarry (dis)
Cattle Grid
North Loch
Southlee
Gerda Water
Swining Knowe
Sheepfold
PC
Quee Ness
Pier
Sch
Gardin
Cattle Grid
BOAT TRIPS
Marina
Vidlin
Cattle Grid
Meml
Herra
Gillsbreck
Gruties Mires
Burn of Tronister
White Hillocks
Cattle Grid
PO
Cemy
Vidlin Loch
Hill of Gardi
Poles
Underground Cable
Overhead Lines
Underground Cable - Limits of Deviation (40m)
Overhead Line - Limits of Deviation (100m)
Red line Boundary
HDD Platform
A968
Map 2
Kergord Converter Station to Cul Ness Landfall
Page 4 of 4
Drawn by: BK
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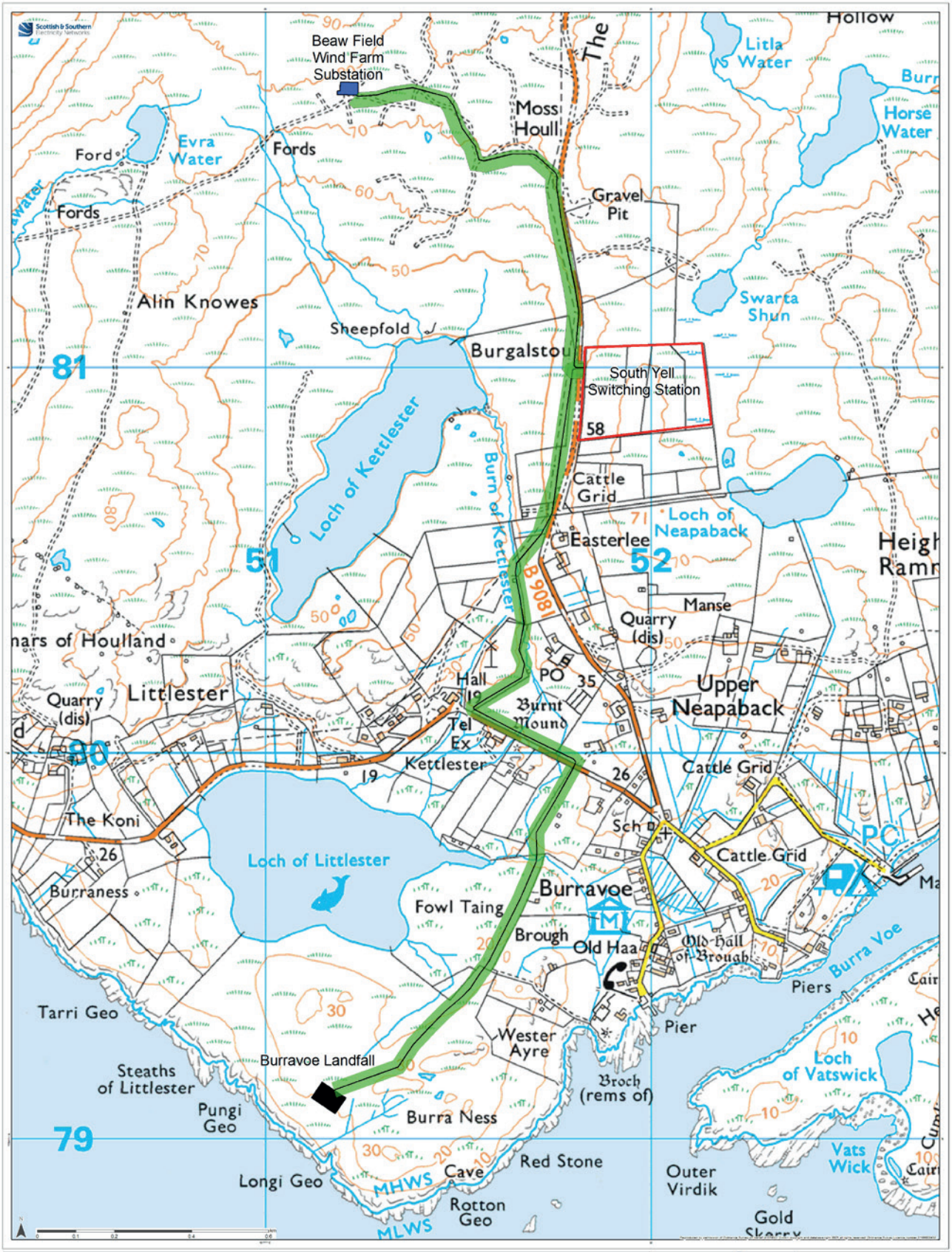
Drawing: LT000216_WAY_004_Map2_A0



Underground Cable | Underground Cable - Limits of Deviation (40m) | HDD Platform
Red line Boundary | Beaw Field Wind Farm Substation

Map 3

South Yell Switching Station to Burravoe Landfall and South Yell Switching Station to Beaw Field Wind Farm

Drawn by: BK Date: 27/08/2021

Drawing: LT000216_WAY_004_Map2_A0

Scottish & Southern Electricity Networks
TRANSMISSION

What happens now and how do I have my say?

We understand and recognise the value of the feedback provided by members of the public during all engagements and consultations.

At this early stage of developments, we are keen to receive your views and comments which can be provided to the project team by completing a feedback form overleaf, filling out the online feedback form or by writing to Sharon Powell, Community Liaison Manager.

We will be seeking feedback from members of the public and Statutory Bodies until 19th October 2021.

All feedback received will be assessed and the proposed options adapted where necessary.

Next steps

Upcoming activities September 2021 – Q1/Q2 2022:

- Consideration of feedback from September public consultation events;
- Ongoing stakeholder and landowner engagement for land connections;
- Ground Investigation campaign to support design development;
- EA/EIA reports to support planning applications;
- Carry out survey of preferred 132kV subsea cable corridor to inform alignment and cable burial assessment;
- Ongoing stakeholder engagement for 132kV subsea cable connection;
- Marine survey Q4 2021;
- Submit s37 planning applications for:
  - Kergord Converter Station to Mossy Hill Wind Farm and Gremista GSP;
  - Kergord Converter Station to mainland subsea cable at Cul Ness; and
- Submit application for South Yell Switching Station.

Community Liaison Manager, Sharon Powell

sharon.powell@sse.com

07918 305 099

Sharon Powell
Scottish and Southern Electricity Networks,
Lerwick Power Station,
Gremista, Shetland,
ZE1 OPS

Additional information

Information will also be made available via the project webpage and social media channels:

Project Website: www.ssen-transmission.co.uk/projects/shetland-renewable-connections/

Follow us on Twitter:
@ssencommunity

Follow us on Facebook:
@ssencommunity

Scottish & Southern Electricity Networks

TRANSMISSION

Your feedback

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in **BLOCK CAPITALS.** (Please tick one box per question only)

Q1 **Has the need for the Shetland Renewables Connections Project been clearly explained?**

Yes ☐ No ☐ Please state further comments

Q2 **Has a clear overview of the project been provided?**

Yes ☐ No ☐ Please state further comments

Q3 **Do you agree with the choice of low profile trident lines and some sections of underground cabling as the preferred technology for onshore connections?**

Yes ☐ No ☐ Please state further comments

Q4 **Do you agree with the preferred onshore connection alignment between Kergord Converter Station and Gremista GSP and Mossy Hill Wind Farm?**

Yes ☐ No ☐ Please state further comments

Q5 **Do you agree with the preferred onshore connection alignment between Kergord Converter Station and the landfall at Cul Ness?**

Yes ☐ No ☐ Please state further comments

Q6 Do you agree with the proposed underground cable alignments on the island of Yell?

Yes ☐ No ☐ Please state further comments

Q7 Do you have any comments regarding the proposed subsea cable route between Mainland Shetland and Yell?

Yes ☐ No ☐ Please state further comments

Q8 Do you have any comments on the proposed subsea cable landfalls?

Yes ☐ No ☐ Please state further comments

Q9 Do you agree with the proposed landfall location?

Yes ☐ No ☐ Please state further comments

Q10 Do you agree with the location of the proposed Yell Switching Station?

Yes ☐ No ☐ Please state further comments

Q11 Do you have any comments on the layout or appearance of Yell Switching Station?

Yes ☐ No ☐ Please state further comments

Please use space below to provide further comments:

Full name

Address

Telephone

Email

If you would like to be kept informed of progress on the project please tick this box. ☐

If you would like your comments to remain anonymous please tick this box. ☐

Thank you for taking the time to complete this feedback form.

Please submit your completed form by one of the methods below

Email: sharon.powell@sse.com

Post: Sharon Powell, SSE Networks, Lerwick Power Station, Gremista, Shetland ZE1 0PS

Online: www.ssen-transmission.co.uk/projects/shetland-renewable-connections

Download: Feedback forms and all the information from this consultation will also be available to download from the project website

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing this feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose.