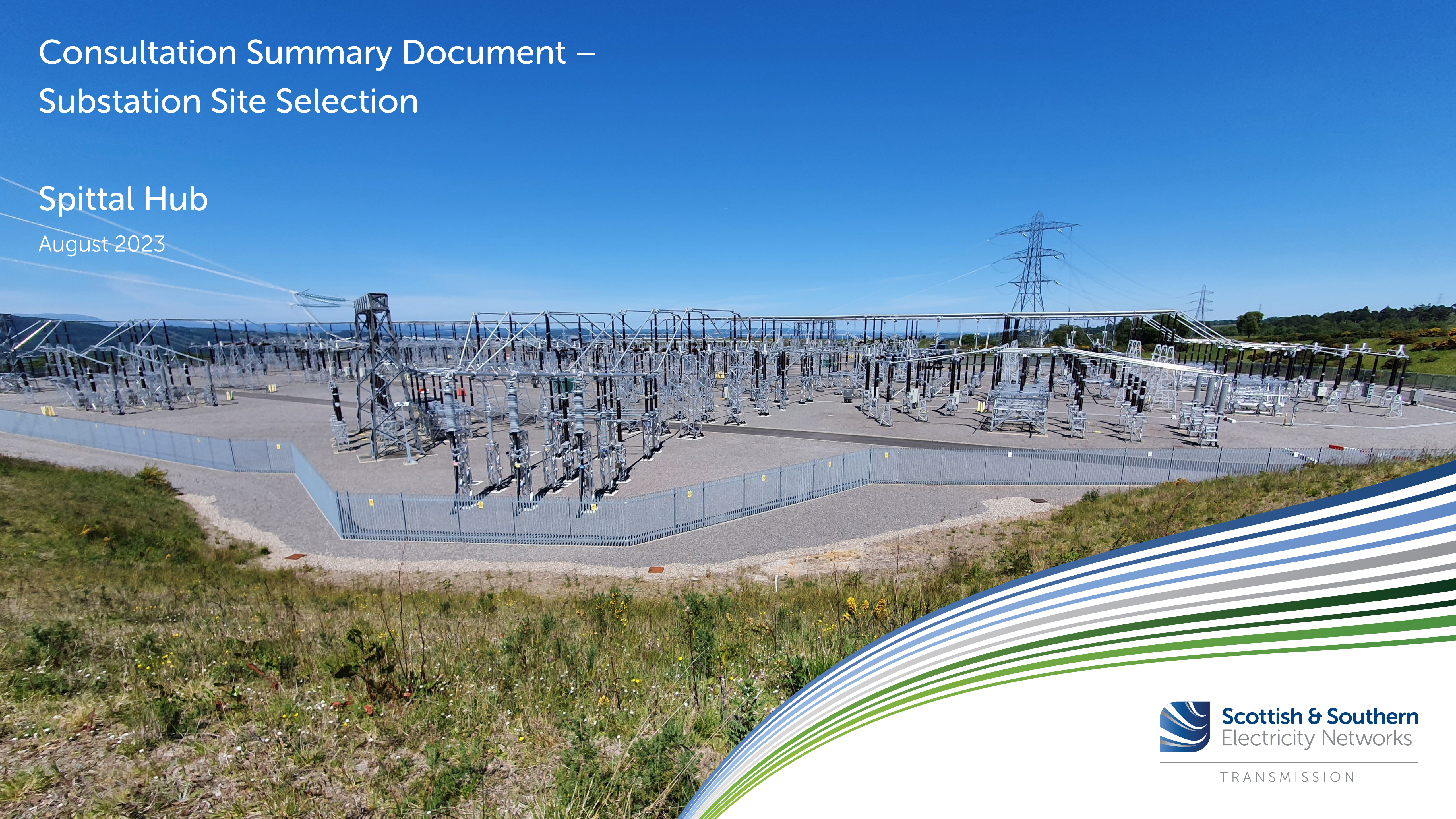


Consultation Summary Document – Substation Site Selection

Spittal Hub

August 2023



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Glossary

Term	Definition
Area of Search (Study Area)	A broad geographical area within which possible sites might be capable of identification within approximately 5km of the required connectivity point; usually determined by geographical features such as coastlines or hill/mountain ranges, or designation boundaries, such as National Park boundaries.
Consultation	The dynamic process of dialogue between individuals or groups, based on a genuine exchange of views and, normally, with the objective of influencing decisions, policies or programmes of action.
Kilovolt (kV)	One thousand volts.
Overhead line (OHL)	An electric line installed above ground, usually supported by lattice steel structures or poles.
Stakeholders	Organisations and individuals who can affect or are affected by SSEN Transmission works.
Substation	A node on the network to allow safe control of the electricity network. This could include convergence of multiple circuits, transformation of voltage or other functions to maintain and operate the electricity network.
The National Grid	The electricity transmission network in Great Britain.
Works	Constructing new transmission infrastructure such as substations, overhead lines, underground cables, major refurbishment of these, the dismantling and removal of any parts of the system; and associated works, which may include formation of access tracks, bridge and road improvements, tree cutting, drainage etc.

1 Introduction

This Consultation Document has been prepared by ERM Ltd on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission). SSEN Transmission, operating under licence held by Scottish Hydro Electric Transmission plc, owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands.

This Document describes the context of and background to the proposed new 400kV substation, High Voltage Direct Current (HVDC) converter station and associated infrastructure at Spittal and sets out the process we followed to identify a series of site options; the options appraisal undertaken; the alternatives considered during the selection of site options site and the identification of a preferred site option for the new substation.

This document invites comments from all interested parties on the substation site selection for a new 400kV substation, High Voltage Direct Current (HVDC) converter station and associated infrastructure that is required at Spittal, Caithness.

This Consultation Document describes the options identified, the options appraisal undertaken, the alternatives considered during the selection of options and the identification of the environmentally and technically preferential substation option.

This Document supports the information made available to the public and statutory authorities in February and March 2023 through the consultation booklet, public event banners and the [ArcGIS Storymaps](#) site and has been prepared in order to provide a more detailed description of the process that we've followed to reach the current stage in the project.

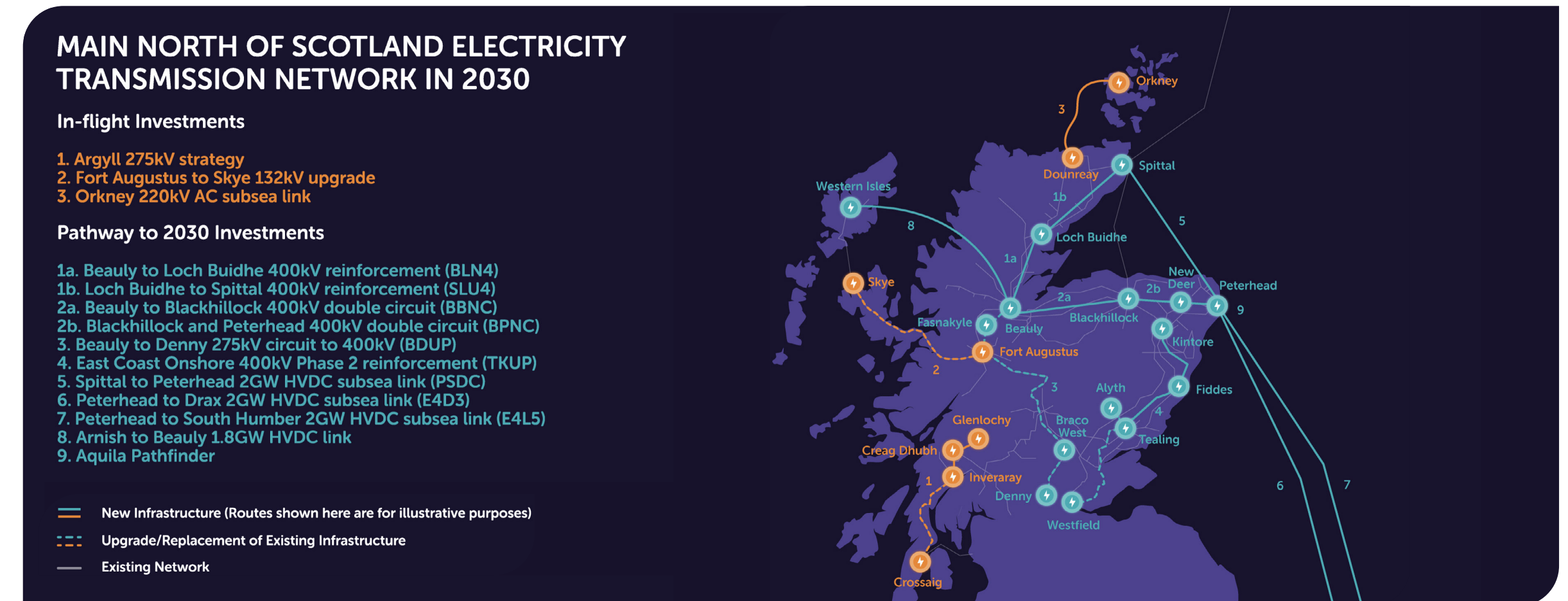
We hope that in publishing this document we are facilitating a more standardised format for the public and statutory consultees alike to access the information that was presented on our Storymaps site above, and one which enables a wide range of information about the project to be easily downloaded for review and feedback.

1.1 Project Background and Need

As a result of the Scottish and UK Governments' Net Zero climate change targets, together with requirements set out in the [British Energy Security Strategy \(BESS\) \(April 2022\)](#) and subsequently in National Grid Electricity System Operator's (ESO) ["Pathway to 2030" Holistic Network Design \(HND\) \(July 2022\)](#), significant increases in renewable generation capacity are required, resulting in significant investment in new transmission network infrastructure.

The BESS sets out the UK Government's plans to secure the country's future energy independence by reducing the dependence on, and price exposure to, volatile global wholesale gas markets. This will be achieved by accelerating the deployment of homegrown and affordable low carbon electricity generation, together with accelerating the enabling electricity network infrastructure required to connect and transport this power. The BESS included an increased ambition for offshore wind generation of 50GW by 2030, up from the previous target of 40GW.

Figure 1: Proposed New and Upgraded/Replacement Infrastructure as part of the Pathway to 2030



To enable the connection of that 50GW of offshore wind by the 2030 target date, the GB Electricity System Operator (the ESO), working in collaboration with the three GB Transmission Owners, developed what is known as the 'Holistic Network Design' (the HND). This sets out the onshore and electricity transmission infrastructure required across GB to deliver this UK Government target, including projects in SSEN Transmission's Licence Area across the north of Scotland.

Caithness and the surrounding area are home to some of Scotland's best wind resources and the existing electricity transmission network is at full capacity, meaning the planned new renewable energy generation required by BESS can't connect without significant network reinforcement.

As part of the wider UK network reinforcements detailed in the BESS and HND, reinforcements required in SSEN Transmission's Licence Area include proposed new 400 kV links between Spittal and Beauly, and between Peterhead and Beauly to transmit electricity generated by renewables in the north / east of Scotland to areas of demand on the wider GB transmission network, as well as reinforcing the network in Scotland. In addition, new subsea links between Spittal and

Peterhead, and from Peterhead to the north of England are required.

In December 2022, the energy regulator, Ofgem, approved the need for these projects as part of its [Accelerated Strategic Transmission Investment \(ASTI\)](#) framework decision.

These projects, alongside several other major network upgrades planned in the north of Scotland, are therefore part of a GB-wide programme of works that are required to meet UK and Scottish Government energy targets; there is a clear expectation from Government and the energy regulatory, Ofgem, that these projects will be delivered by 2030. More specifically, these projects are needed to deliver Government 2030 renewable targets set out in the BESS.

Figure 2: Locations of required new 400 kV Substations between Spittal, Beaully and Peterhead areas



1.2 Project Overview

In order to support the wider connection of both onshore and offshore renewables promoted as part of the UK's commitment to delivering green energy targets and the transition to a low carbon energy network, SSEN Transmission is proposing to construct a new 400kV substation in the Spittal area as a key element in the delivery of the Pathway to 2030. It will facilitate the connections to the proposed new 400kV overhead line connecting from Spittal to Beaully, the proposed new Spittal to Peterhead HVDC link, and the existing Spittal 275/132kV substation. The new 400kV substation is needed because the current 275kV network is at capacity and no further renewable energy can be connected without significant reinforcement of the north of Scotland electricity transmission network. This new substation will connect to the existing transmission network at Spittal, allowing existing and proposed renewable generators to transmit electricity to areas of demand on the GB transmission network

1.3 Strategic Considerations

New 400kV substation

The new 400kV substation comprises:

The project will see the construction of a new 400 kV substation. The works will comprise the construction of a new outdoor 400kV substation complete with 400kV double busbar arrangement that is approximately 530 m x 340 m. Air Insulated Switchgear Substation (AIS) or approximately 250 m x 200 m Gas Insulated Switchgear Substation (GIS), installation of two new super grid transformers (SGT) and a new substation control building.

The works will comprise of:

- A switching station on a platform that is approximately 530 m x 340 m (AIS) or approximately 250 m x 200 m (GIS);
- Control building, switchgear and busbars;
- Two new super grid transformers;
- The site requires to be connected back to the existing Spittal substation, via new underground cables;
- Connection with the proposed Spittal-Loch Buidhe-Beaully 400kV OHL; and
- Space provision to allow for connection of future renewable energy generation projects.

New HVDC converter and Peterhead link:

The Spittal to Peterhead HVDC project is a 2GW link and comprises of the following:

- A new 525kV DC 2GW Bi-pole HVDC converter station with a platform of 325 m x 290 m to be located near the new 400kV Spittal substation;
- AC underground cable connections to the new 400kV Spittal substation;
- HVDC underground cables from the converter station to a new landfall (still to be determined project details can be found at [Spittal – Peterhead Subsea Cable Link - SSEN Transmission \(ssen-transmission.co.uk\)](https://www.ssen-transmission.co.uk) and subject to a separate consultation); and
- Subsea HVDC cables across the Moray Firth to Morayshire/Aberdeenshire landfall (still to be determined project details can be found at [Spittal – Peterhead Subsea Cable Link - SSEN Transmission \(ssen-transmission.co.uk\)](https://www.ssen-transmission.co.uk) and subject to a separate consultation).

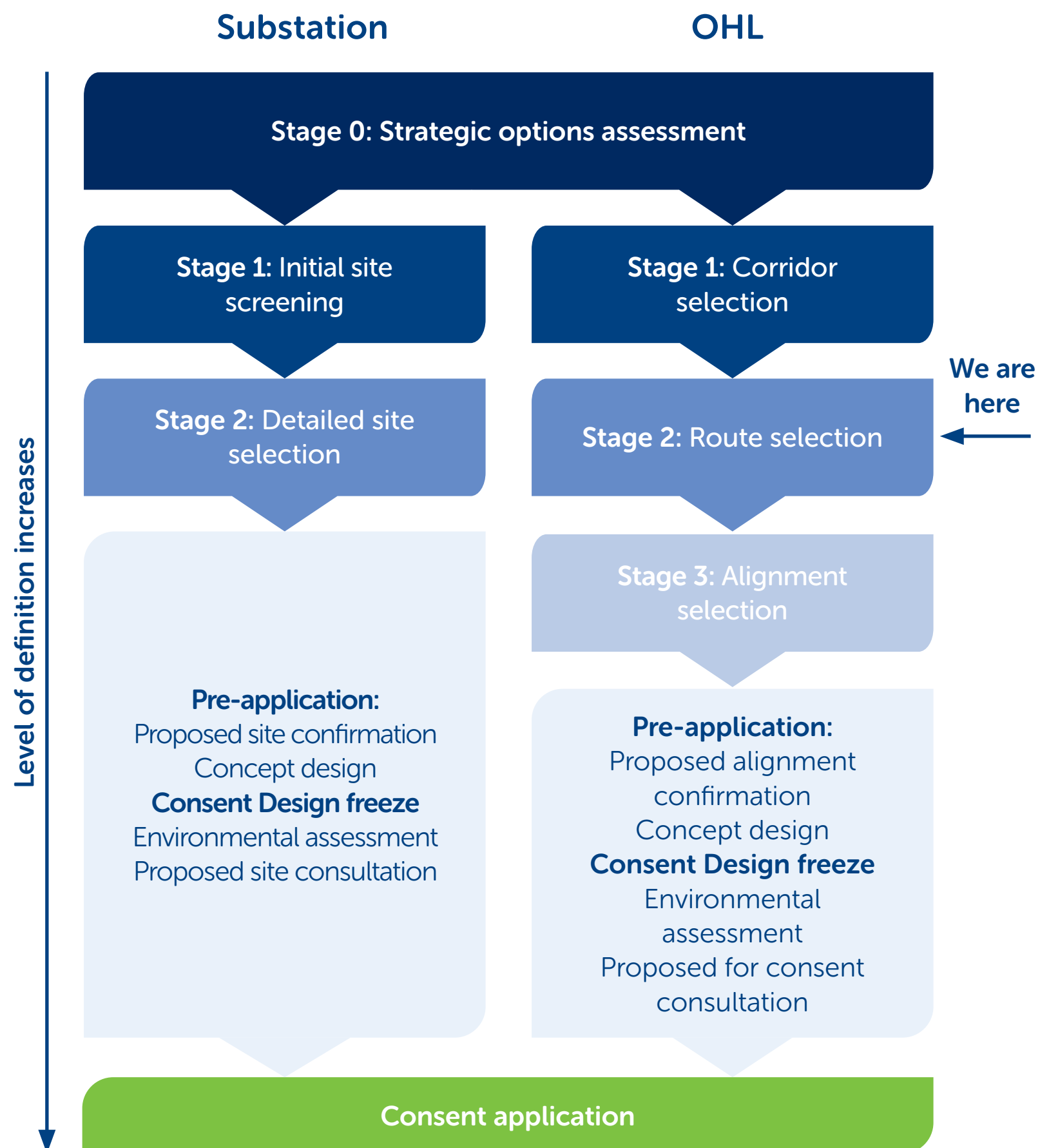
A Joint Solution

Rather than two separate sites, it may be feasible to locate both new installations on a single larger site (approximately up to 1,000 x 550 m depending on technology). The advantages of this would be avoidance of the AC connecting cables and a potentially reduced environmental impact from keeping all new infrastructure in one location. The disadvantages are having to find a much larger site which is relatively flat and limits the potential connection route options for the proposed new OHLs. Our site selection process has considered both separate and joint site options.



1.4 Site Selection Process

We follow formal internal guidance to enable us to consistently and rigorously select alignments and sites for new substations, switching stations and converter stations. Each process has a number of key stages, each increasing in detail and definition and bringing technical, environmental and cost considerations together in a way which seeks the best balance in accordance with our Transmission Network Operator's Licence and the Electricity Act 1989.



2. Strategic Options Assessment

A strategic options assessment was undertaken by SSEN Transmission. The outcome of this strategic options assessment identified the following key requirements for the new sites:

- Proximity to the existing 275kV network to minimise the amount of new overhead lines or cabling required to connect to the network.
- Large enough to accommodate the proposed individual or joint 400kV substation/ HVDC converter station footprints, together with associated landscaping, contractor compounds, access and new connection routes.
- In areas which do not contain environmental designations and minimise impacts on local environmental receptors.
- Enable connection routes for the proposed new 400kV overhead lines and HVDC cables.
- Additional space for future expansion.

The outcome of the strategic options assessment informed the identification of sites to take forward as part of the Stage 1: Initial Site Screening Stage.

3. Stage 1: Initial Site Screening

In total, 16 feasible options were identified within a 10 km search radius of the existing Spittal 275kV substation using publicly available data and multi criteria analysis (MCA) to provide high level constraints information.

Assessment of the 16 options was undertaken against the key requirements and using a Red, Amber, Green (RAG) matrix. This resulted in 13 of the 16 options being discounted from further assessment based on proximity to properties, distance from existing infrastructure, and ecological sensitivities. The following two pages show the location of each option and the reasons why that option was not taken forward to Stage 2.

Performance	Comparative Appraisal
Most Preferred ↓	Low potential for the development to be constrained.
	Intermediate potential for the development to be constrained.
Least Preferred	High potential for the development to be constrained.

Option 1 –

- Approximately 2.9 km from the existing Spittal substation.
- Potential landscape and visual impacts due to high point in the landscape and adjacent dwellings.
- Requirement for additional paving for access roads.

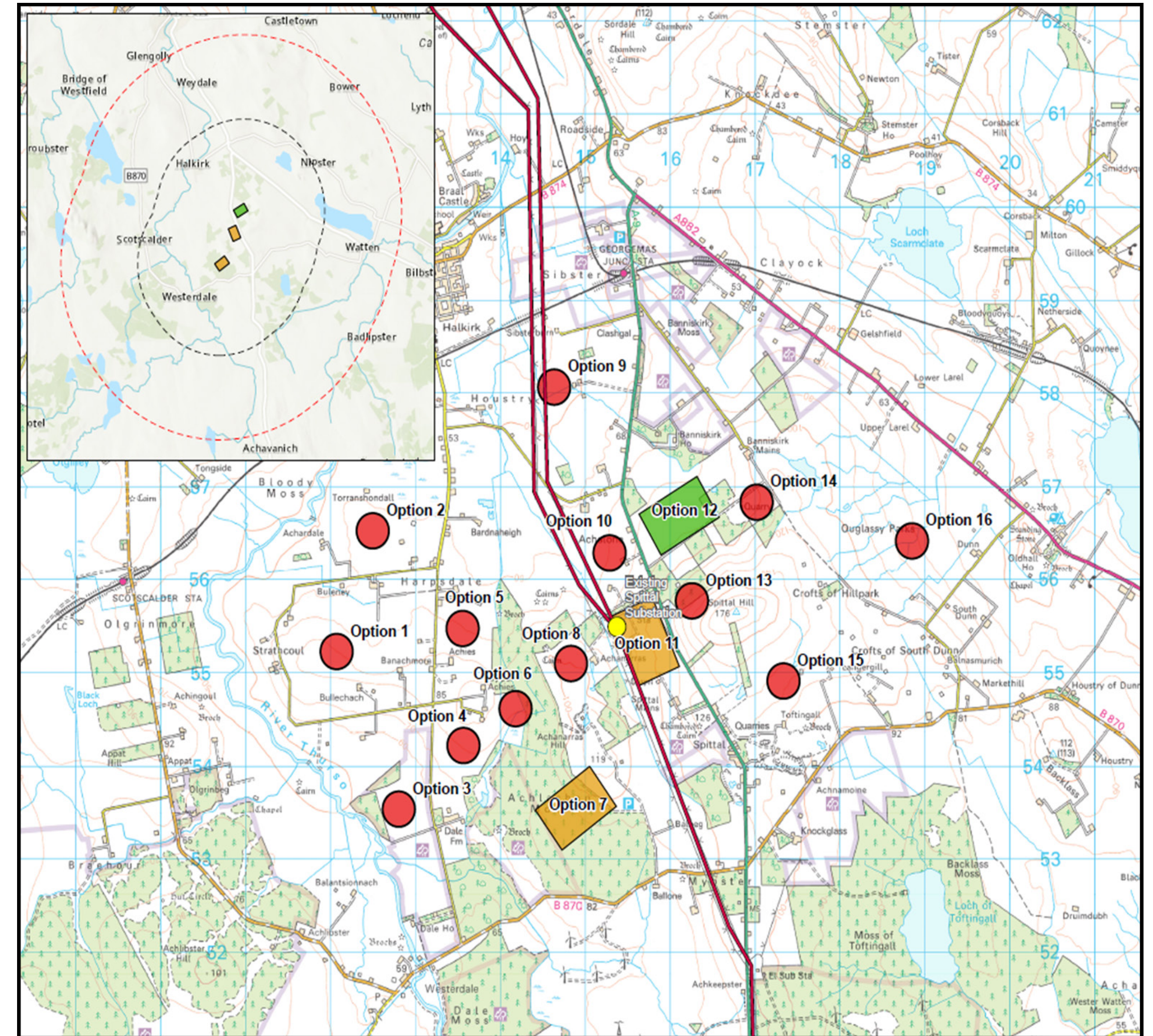
Option 2 –

- Approximately 2.5 km from the existing Spittal substation.
- Potential peatland.
- Potential for landscape and visual impacts due to high point in the landscape and adjacent dwellings.

Option 3 -

- Approximately 3.0 km from the existing Spittal substation.
- Potential peatland.
- Part of the integrated habitat network and likely to have significant biodiversity impacts.
- Close proximity to high-risk floodplain area.
- Potential visual impacts.
- Land in use by University of Highlands and Islands.
- Requirements for additional paving for access roads.

Figure 1: Site Options



Option 4 –

- Approximately 1.9 km from the existing Spittal substation.
- Potential for significant visual impacts due to undulating landscape.
- Requirements for additional paving for access roads.

Option 5 –

- Approximately 1.5 km from the existing Spittal substation.
- Close proximity to two scheduled monuments.
- Site is highly visible from nearby road and dwellings.

Option 6 -

- Approximately 1.2 km from the existing Spittal substation.
- Wide visibility across the landscape.
- Blanket bog on site.
- Partial integrated habitat network on site.
- Proximity to nearby dwellings.

Option 7 –

- Approximately 1.2 km from the existing Spittal substation.
- Relatively good access from B870
- Potential for reduced visual impacts compared to other options.



Option 8 –

- Approximately 0.4 km from the existing Spittal substation.
- Overlap with Achanarras Quarry SSSI.

Option 9 –

- Approximately 2.2 km from the existing Spittal substation.
- Potential visual impact to nearby village of Halkirk and open views across the landscape.
- Multiple dwellings in close proximity.

Option 10 –

- Approximately 0.3 km from the existing Spittal substation.
- Number of watercourses running through the site.
- Partially within previously established Biodiversity Net Gain area.

Option 11 -

- Adjacent to the existing Spittal substation.
- Good access to A9

Option 12 –

- Approximately 0.6km from the existing Spittal substation.
- Good access to A9.

Option 13 –

- Approximately 0.6km from the existing Spittal substation
- Overlaps with Spittal Quarry.
- Elevated location and high potential for landscape and visual impact.

Option 14 -

- Approximately 1.7km from the existing Spittal substation.
- Public road improvements would be required to facilitate construction.
- Site partially forested.
- Residential properties in close proximity.

Option 15 –

- Approximately 1.6km from the existing Spittal substation.
- Adjacent to active quarry.
- High elevation with high potential for landscape and visual impact.
- Potential blanket bog.

Option 16 –

- Approximately 3.2km from the existing Spittal substation.
- Open landscape with high potential for landscape and visual impact.

4. Detailed Site Selection

Following the completion of the Stage 1 initial screening process a total of three options were identified and were taken forward to Stage 2. The three options were considered individually as a combined AC/DC site and a further two hybrid options were considered that would locate the AC and DC elements on separate sites. A summary outlining the each of those sites are set out below:

Single combined site approach

- Option 7 (AC/DC) - Option 7 is located 1.2 km south-west of the existing Spittal substation, partially within an area of coniferous woodland, and in close proximity to Achanarras Geological Conservation Review Area.
- Option 11 (AC/DC) – Option 11 is adjacent to the existing Spittal Substation, running parallel to the A9, slightly north of Spittal, 90 m north of St Magnus Church and Burial Ground, a local cultural heritage designation.
- Option 12 (AC/DC) – Option 12 is located 0.6 km to the north-east of the existing substation on the opposite side of the A9. The site sits predominantly grassland, with drainage ditches and patches of conifer plantation also found on site.

Hybrid approach

- Option 7 (AC) and Option 11 (DC): this approach is located both adjacent to the existing Spittal Substation (Option 11), and on the opposite side of the A9, 0.6 km to the northeast of the existing Spittal Substation (Option 12).
- Option 7 (AC) and Option 11 (DC): this approach is located both adjacent to the existing Spittal substation (Option 11) and 1.2 km south-west of it (Option 7), this option has significant additional connectivity requirements.
- The hybrid options were removed from the appraisal procedure prior to the final selection as it was clear from the initial assessment work that the landscape impacts and BNG requirements would be significantly higher than for a combined site.



Table 4.0 RAG Table

Option	RAG Impact Rating – Environmental														RAG Impact Rating – Engineering																				
	Natural Heritage				Cultural Heritage		Landscape			Land Use			Planning		Access and Connectivity						Footprint Requirements		Hazards		Ground Conditions		Environmental Conditions								
	Designations	Protected Species	Habitats	Ornithology	Hydrology / Geology	Designations	Cultural Heritage Assets	Designations	Character	Visual	Agriculture	Forestry	Recreation	Planning	Connection Access	Operation and Maintenance	Existing Circuits / Networks	Future Development Possibilities	Interface with SSEN Distribution and Generation	DNO Connection	Technology	Adjacent Land Use	Space Availability	Unique Hazards	Existing Utilities and Installations	Topography	Geology	Elevation	Salt Pollution	Flooding	Carbon Footprint	SF6	Contaminated Land	Noise	
1	M	L	M	L	L	M	L	L	H	H	L	M	M	L	L	L	M	M	L	L	M	M	M	M	H	H	M	M	L	L	M	L	L	L	L
2	M	L	M	L	L	H	L	L	M	M	L	L	L	L	M	M	L	H	M	L	L	L	M	H	H	M	L	L	L	L	M	L	L	L	M
3	M	L	M	L	L	M	L	L	M	M	L	L	L	L	L	L	M	L	L	L	L	L	L	M	M	L	L	L	L	L	M	L	L	L	L

Table 1 Engineering Comparison of Shortlisted Options

		Option 7	Option 11	Option 12
Access and Connectivity	Construction Access	Approximately 0.6km of new approach road needs to be constructed to access the site. The junction of B870 and A9 may need to be improved and the B870 may need to be widened.	Being just adjacent to the existing Spittal Site minor road needs to be constructed.	Good connectivity form A9 trunk road.
	Operation and Maintenance	Reasonable access from B870 and A9, however junction of B870 at A9 may need to be improved and B870 may need widened.	Good Access from A9.	Good Access from A9 though access tracks to be established.
	Existing Circuits/Networks	Approximately 1.8km away from the existing network.	Adjacent to the existing Spittal Substation and Mybster OHL. Carrying new OHL/UGC would be challenging if the 400kV connection from Dourney (future network expansion) or any Windfarm is planned to join the OHL. In this case the existing Mysbster circuit would need to be undergrounded.	Approximately 1.8km away from the existing network.
	Future Development Possibilities	Being dense forest, land development & expansion would be challenging.	Location is adjacent to the existing Spittal Substation. Future development and expansion will have constraint due to existing Mybster circuits to the west, A9 Trunk Road to the East, and existing Spittal substation to the North.	Location is nearby to the existing Spittal Substation, existing circuits may be subject of concern while bring the new circuits on OHL, however good position with respect to the preferred Loch-Buidhe circuits and HVDC cable corridor.
	Interface with SSEN Distribution and Generation	No anticipated interface.	No anticipated interface.	No anticipated interface.
	DNO Connection	DNO connection not required.	DNO connection not required.	DNO connection not required.
Footprint Requirements	Technology	Worst case footprint of 1000m x 550m has been considered for combine HVAC and HVDC.	The existing substation, OHLs, A9 and scheduled monument restrict the available space. Any compounds/laydowns would need to be located remotely on-Site Option 10.	Worst case footprint of 1000m x 550m has been considered for combine HVAC and HVDC.
	Adjacent Land Use	Dense forest farming area, however further Class 1/Class 2 peat excavations/disposal required.	Adjacent land is mostly farming area, however further Class 1/Class 2 peat excavations/disposal required.	Adjacent land is mostly farming area, however further Class 1/Class 2 peat excavations/disposal required.
	Space Availability	Standard substation configurations can be accommodated for both HVAC and HVDC compounds. Space can be created after cutting of dense forest area for both HVAC and HVDC compounds.	Optimal site design can be accommodated for both HVAC and HVDC compounds, however space for the HVDC is on risk until freeze of HVDC layout.	Standard substation configurations can be accommodated for both HVAC and HVDC compounds.

Continued

Table 1 Engineering Comparison of Shortlisted Options

		Option 7	Option 11	Option 12
Hazards	Unique Hazards	Site is a dense forest. Peatland development possibilities will need further due diligence work to identify further unknown Hazards.	Existing HVDC cables are nearby, and existing substation facilities may be a subject of concern.	Risks are not well understood or there are possibly avoidable risks remaining. Blasting at nearby quarry may cause vibrations at rare occurrences.
	Existing Utilities and Installations	Risks are not well understood or there are possibly avoidable risks remaining.	Existing services exist where diversion / protection is deemed possible at low cost and protection of the environment.	No such issue has been identified.
Ground Conditions	Topography	Existing forest tree cutting required and forestry drainage required to be managed.	Proximity to A9 trunk road requires possible additional stabilisation.	Low flood area and flat ground.
	Geology	Site overlaps with a large area of Class 2 carbon and possible areas of peatland.	Site overlaps with a large area of class 1 carbon. Agricultural farming field and proximity to archaeology.	Class 1/Agricultural farming field and located nearby good quality stone.
Environmental Conditions	Elevation	Distant elevated views of the site are likely.	Distant elevated views of the site are likely.	Distant elevated views of the site are likely.
	Salt Pollution	Site is located >10km from the coastline.	Site is located >10km from the coastline.	Site is located >10km from the coastline.
	Flooding	Medium likelihood of surface water flooding at localised areas.	Medium likelihood of surface water flooding at localised areas.	Medium likelihood of surface water flooding at localised areas.
	Carbon Footprint	Highly likely that extensive excavations of peat and the importation of engineered fill material will be required to produce a stable level platform for the substation. < 120% of least carbon option /Mostly priority peatland.	Highly likely that extensive excavations of peat and the importation of engineered fill material will be required to produce a stable level platform for the substation. < 120% of least carbon option /Not peatland.	Highly likely that extensive excavations of peat and the importation of engineered fill material will be required to produce a stable level platform for the substation. < 120% of least carbon option /Possible peatland/No data.
	SF6	Utilisation of AIS or Interrupting Gas products with no SF6.	Utilisation of AIS or Interrupting Gas products with no SF6.	Utilisation of AIS or Interrupting Gas products with no SF6.
	Contaminated Land	Option is not within contaminated land.	Option is not within contaminated land.	Option is not within contaminated land.
	Noise	Class -2 (Urban 1000m/Rural 5000m) Minimal properties exist on north and west side of site (>1km from site)	Class -4 (Urban 100m/Rural 500m) some of properties exist in surrounding site (<1km from site)	Class -4 (Urban 100m/Rural 500m) some of properties exist in other side of A9 (<1km from site)

Table 2 Environmental Comparison of Shortlisted Options

		Option 7	Option 11	Option 12
Natural Heritage	Designations	May impact breeding and wintering bird populations due to proximity to the Caithness Lochs SPA, Ramsar and IBA site. In close proximity to Achanarras Quarry SSSI and Geological Conservation Review Area. Unlikely to impact the bedrock or designating features.	May impact breeding and wintering bird populations due to proximity to the Caithness Lochs SPA, Ramsar and IBA site. In close proximity to Achanarras Quarry SSSI and Geological Conservation Review Area.	May impact breeding and wintering bird populations due to proximity to the Caithness Lochs SPA, Ramsar and IBA site. In close proximity to the Loch Scarmclaste SSSI, and Loch Watten SSSI and SAC.
	Protected Species	Unlikely to compromise the conservation status or essential suitable habitat.	Unlikely to compromise the conservation status or essential suitable habitat.	Unlikely to compromise the conservation status or essential suitable habitat.
	Habitats	May compromise groundwater dependent terrestrial ecosystems.	May compromise potential Annex 1 habitats or potential ground water dependent terrestrial ecosystems.	May compromise potential Annex 1 habitats or potential ground water dependent terrestrial ecosystems.
	Ornithology	Unlikely to compromise the conservation status of Schedule 1 bird species or their habitats.	Unlikely to compromise the conservation status of Schedule 1 bird species or their habitats.	Unlikely to compromise the conservation status of Schedule 1 bird species or their habitats.
	Hydrology/ Geology	Unlikely to compromise local surface or groundwaters.	Unlikely to compromise local surface or groundwaters.	Unlikely to compromise local surface or groundwaters.
Cultural Heritage	Designations	Close proximity to Dale farm Dale Farm Broch (361 metres southwest), Cnoc Donn Broch (516 metres southwest) and Ballone Broch (1.58km southeast) whose setting may be impacted. Potential for unknown buried archaeological remains to be present within the Proposed Development.	Adjacent to Remains of St Magnus HoSpittal and Church scheduled monument and in close proximity to Achanarras hut circle and Achnarras Cairns whose setting may be impacted. Potential for unknown buried archaeological remains to be present within the Proposed Development.	Close proximity to Achanarras hut circle and Achnarras Cairns whose setting may be impacted. Potential for unknown buried archaeological remains to be present within the Proposed Development.
	Cultural Heritage Assets	Unlikely to compromise the integrity of a conservation area, inventory GDL, setting of an A listed building or directly disturb a B/C listed building.	Unlikely to compromise the integrity of a conservation area, inventory GDL, setting of an A listed building or directly disturb a B/C listed building.	Unlikely to compromise the integrity of a conservation area, inventory GDL, setting of an A listed building or directly disturb a B/C listed building.

Continued

Table 2 Environmental Comparison of Shortlisted Options

		Option 7	Option 11	Option 12
Landscape	Designations	Unlikely to compromise the special qualities of a designated landscape.	Unlikely to compromise the special qualities of a designated landscape.	Unlikely to compromise the special qualities of a designated landscape.
	Character	Likely to compromise characteristic elements of the landscape character through the removal of woodland combined with large areas of visibility.	May compromise characteristic elements of the landscape character. The location of the existing facility at this site, including the existing OHL, reduces the landscape sensitivity.	May compromise characteristic elements of the landscape character due to varying degrees of visibility. Would introduce development into an otherwise undeveloped landscape. May cause cross landscape boundary effects.
	Visual	Likely to compromise the view or visual amenity of individual properties and recreational areas including those at Westerdale and Achanarras Quarry.	May compromise the view or visual amenity of individual properties and recreational areas including those at Achanarras Quarry. The location of the existing facility at this site, including the existing OHL, reduces the visual sensitivity.	May compromise the view or visual amenity of individual properties and recreational areas including those at Halkirk.
Land Use	Agriculture	Avoids interaction with prime agricultural land (LCA 1, 2 and 3.1).	Avoids interaction with prime agricultural land (LCA 1, 2 and 3.1).	Avoids interaction with prime agricultural land (LCA 1, 2 and 3.1).
	Forestry	Interaction with forestry operations may compromise the commercial returns from forestry operations.	Unlikely to interfere with any commercial forestry or woodland.	Unlikely to interfere with any commercial forestry or woodland.
	Recreation	Potential to compromise the recreational amenity of Achanarras Quarry from visual impacts.	Unlikely to interfere with any recreational amenities.	Unlikely to interfere with any recreational amenities.
Planning	Policy	Option is compliant with the planning policy and has provided the necessary mitigations mentioned in the Highland-Wide Local Development Plan 2012	Option is compliant with the planning policy and has provided the necessary mitigations mentioned in the Highland-Wide Local Development Plan 2012.	Option is compliant with the planning policy and has provided the necessary mitigations mentioned in the Highland-Wide Local Development Plan 2012.
	Proposals	Intersects edge of proposed Dale Farm Wind Farm.	In close proximity to the Loch Toftingall Wind Farm and Dale Farm Wind Farm.	In close proximity to the Loch Toftingall Wind Farm and Dale Farm Wind Farm.

Cost Considerations

The cost of the site construction across the three identified sites is generally the same, the main variable being driven by the distance from the existing 275 kV substation; the further the new site is from the existing site the more cost that is required for the excavation and material purchase for the connection between the two sites. The other factor is the extent of civil works required.

Option 7 consists mainly of commercial forestry with pockets of peat and this would be required to be excavated and relocated to another location.

Option 11 would require substantial excavation works to produce a level platform.

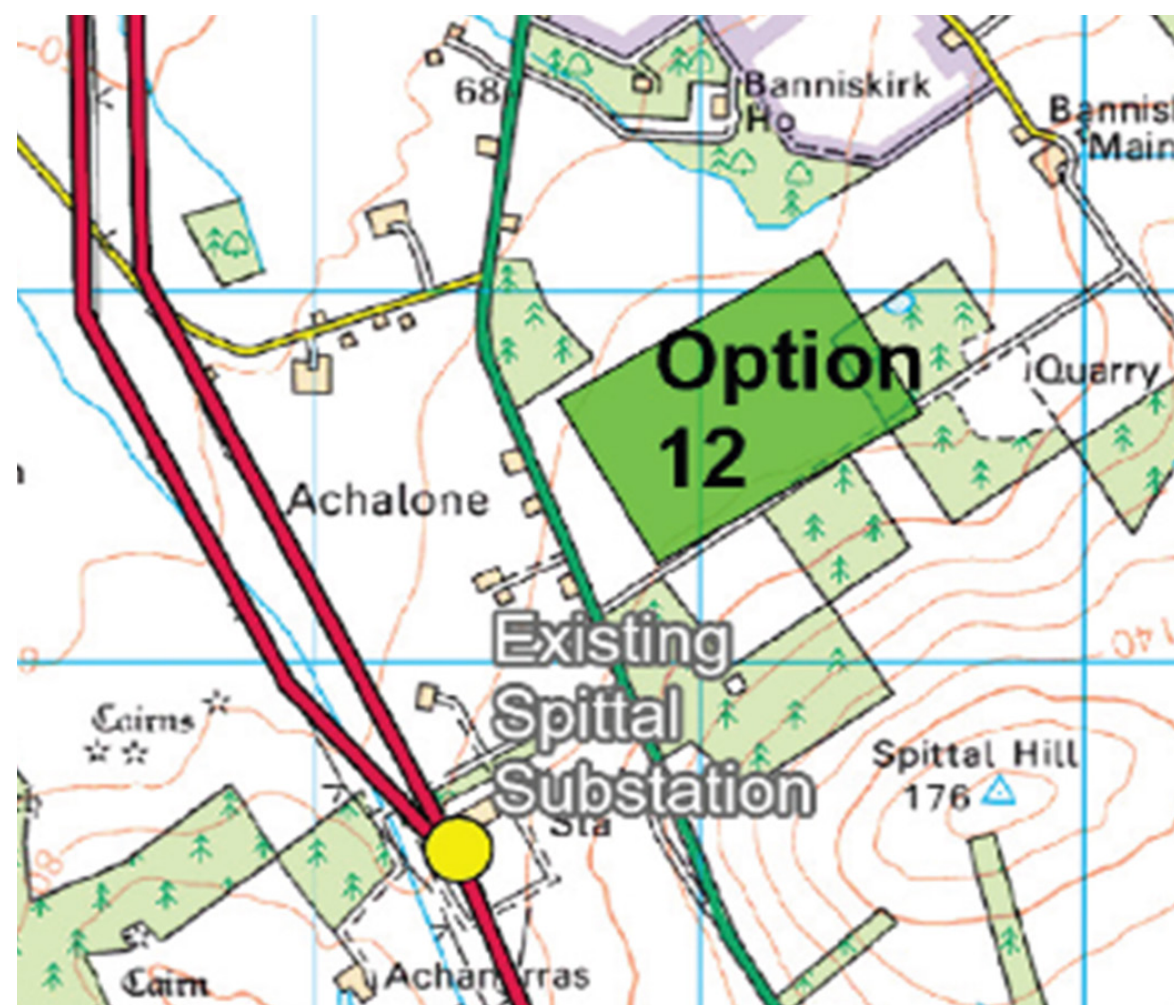
Option 12 will require civil works for the platform however it is a reduced requirement from the other two proposed sites and in conjunction with the reduced cable length this would result in reduced cost impact when compared.

5. Preferred Site

The environmental preferred site is Option 11. Option 7 has the potential for more significant landscape and visual impact. Options 11 and 12 are closely balanced, with Option 12 having potential for a higher impact on landscape and visual receptors and Option 11 the greater potential for impact on cultural heritage due to the St Magnus Hospital and Church Scheduled Monument close to the southern site boundary. Of these two constraints, landscape is considered likely to be more significant and as such, Option 11 is preferred.

The engineering preferred option is Option 12 from a connection, future expansion, and connectivity perspective. Option 11 is also closely balanced in terms of access, but future expansion would be challenging. Option 7 is more challenging compared to Options 11 and 12 due to forest cutting and the possibility of peatland on site. The preferred engineering option is therefore Option 12. Therefore, taking these factors into consideration our overall preferred site is Option 12.

The preferred site from a costing point of view would be Option 12.



6. Next Steps

Following conclusion of the internal substation options assessment, SSEN Transmission have undertaken consultation with statutory and non-statutory stakeholders and held a series of public exhibitions for the substation options under consideration.

The responses received from the public exhibitions, statutory consultees and other key stakeholders will inform further work to both address the concerns and constraints identified and inform the proposed substation location.

Once we have collated and reviewed all feedback from communities and other stakeholders in response to our consultation on the substation, we will produce a 'Report on Consultation' which will document the themes of consultation responses received and the decisions made in light of these responses

The Report on Consultation will be made available to the public through the project website and issued directly to statutory and non-statutory stakeholders.