

Coire Glas Connection Project

Public Consultation Events

May 2022

The consultation events will be taking place on:

Wednesday 4th May
3pm-7pm

Invergarry Community Hall

Thursday 5th May
3pm-6.45pm

Fort Augustus Village Hall

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Virtual Consultation Event
Monday 9th May
from 5pm-7pm
with live chat function



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.

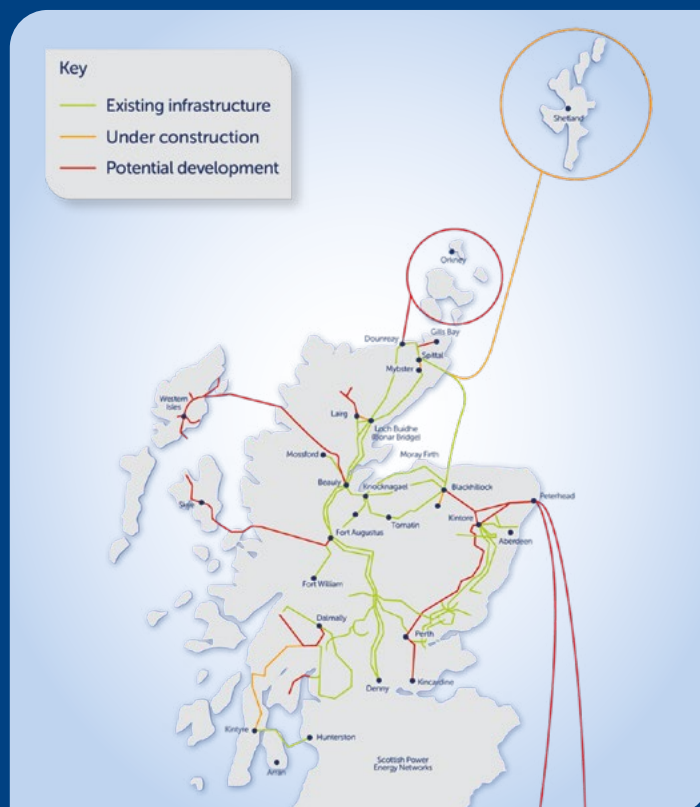
What is the Difference Between Transmission and Distribution?

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



Project Need and Overview

Project Need

SSEN Transmission (SSEN T) have received a Transmission Owner Agreement to connect the Coire Glas Pumped Hydro Scheme for December 2027. The Scheme will be the first large-scale pumped storage scheme to be developed in the UK for more than 30 years and has a potential capacity of up to 1500 Megawatts (MW). This supports the UK move towards a net zero carbon energy system by 2050. A degree of rationalisation of the existing infrastructure will form part of these works.

Project Overview

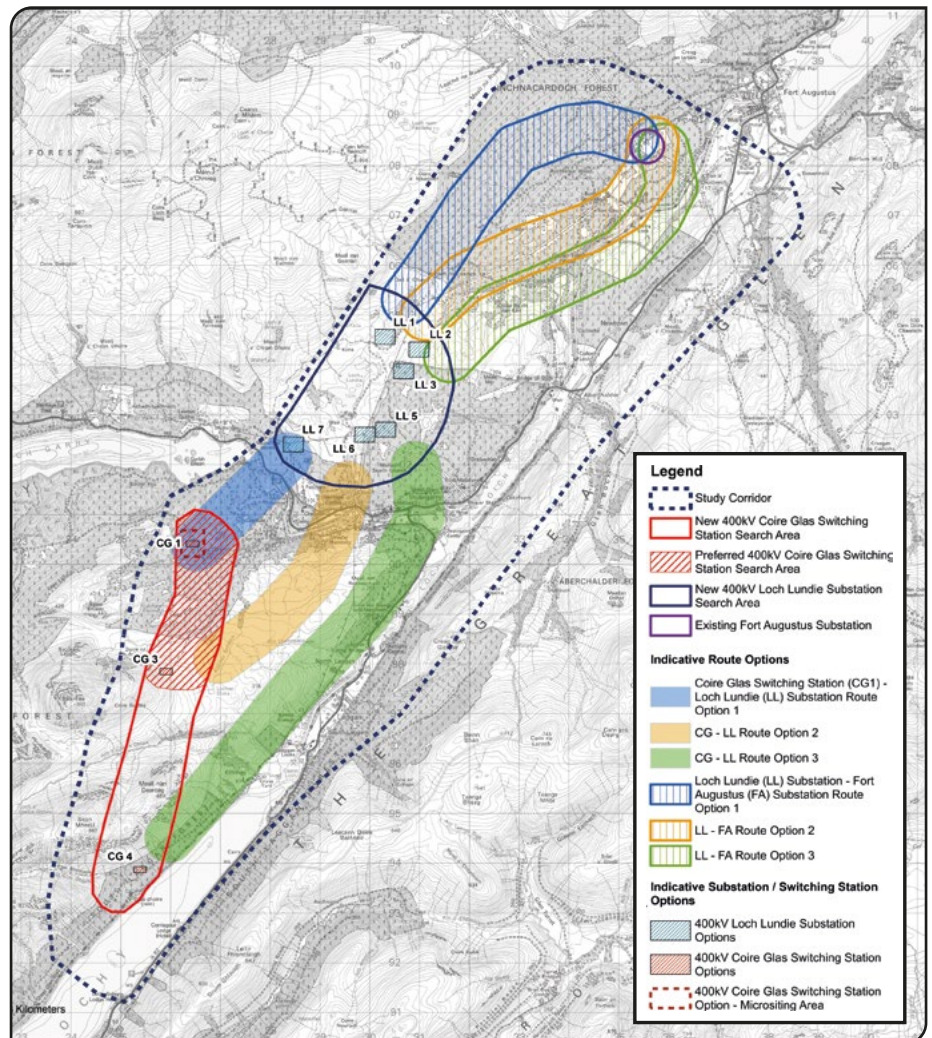
The scheme is located southwest of Laggan Locks, near to Loch Lochy, Highland. The contracted connection is for a total of 1296MW Export/1360MW Demand and will be carried out in two phases. Phase 1 will see the connection of 612MW Export/660MW Demand in December 2027. Phase 2 will see the connection of a further 684MW Export/700MW Demand in October 2029.

Delivery of this project will include the following project elements;

Phase 1 (Connection December 2027)

- A new Coire Glas 400kV external Air Insulated Switchgear (AIS) Switching Station, this will include 2 control buildings.
- Approximately 3.5km of 400kV double circuit overhead line (OHL). This will be installed from the proposed Coire Glas switching station to a new substation located in the vicinity of Loch Lundie.
- A new 132/400kV substation in the vicinity of Loch Lundie. This will comprise a control building, 2 transformers and outdoor AIS equipment.
- Approximately 8.5km of 400kV double circuit overhead line. This will be installed from the proposed Loch Lundie substation to the existing Fort Augustus substation at Auchterawe.
- Rationalisation of sections of the existing 132kV Fort William and 132kV Invergarry Power Station OHL circuits. This will involve terminating the existing circuits into the new Loch Lundie substation to transfer their loads onto the new 400kV OHL between Loch Lundie and Fort Augustus and then dismantling the corresponding sections of 132kV OHLs.

The Coire Glas Grid Connection Indicative Route and Site Options are presented in Figure 1



Phase 2 (Connection October 2029) There will be no further transmission development work in the Invergarry/Fort Augustus area as part of this project.

Meeting our Obligations

Our Transmission Operators licence requires us to provide best value for customers and GB consumers. As a natural monopoly, SSEN Transmission are closely regulated by the GB energy regulator Office of Gas and Electricity Markets (Ofgem), who determine how much revenue we are allowed to earn for developing and maintaining an efficient system of electricity transmission.

These costs are shared between all those using the transmission system, including generation developers and electricity consumers. We therefore work to strict price controls which means the following environmental, engineering and economic considerations form a key part of our routing/alignment and Site Selection process:

Environmental Assessments

Desk-based assessments using available mapping and GIS (Geographic Information Systems) data, together with initial site walkovers by specialists, have been undertaken to gather baseline information. This is crucial to enable us to understand the key environmental constraints and sensitivities within the OHL and substation sites.

This work has been carried out during 2021-22 and has helped to identify key environmental issues including landscape and visual amenity, sensitive habitats, protected ecology and ornithology, forestry, hydrology, hydrogeology, recreation and cultural heritage.

Following confirmation of site selection for the substations and a preferred route and alignment for the OHL connection, further detailed studies and assessment work will be undertaken to support the consenting process in 2022.

Engineering and Economic Considerations

In addition to the suite of environmental assessments undertaken, the following engineering and economic considerations form a key part of our routeing process:

- Construction costs and buildability (largely affected by ground conditions, such as peat/rock/flooding/contaminated land, etc). Operations and maintenance requirements.
- Outage requirements and network constraints.
- Vicinity to other electrical OHL (overhead line) and underground structures.
- Vicinity to any other utility, overhead or underground.
- Proximity to wind turbines and wind farm infrastructure.
- Communications masts and infrastructure.
- Urban development.
- Forestry and biodiversity.
- Technology costs and design parameters.
- Site accessibility.
- Route length.

A summary of key environmental and engineering considerations for each site selection and route option are presented in the Site Selection and Route Options Tables.

The Planning Application Process

Two separate consent processes will be required for the Proposed Development.

The overhead line elements will be consented via an application to the Electricity Consents Unit (ECU under Section 37 of the Electricity Act 1989).

The Section 37 application will be supported by an Environmental Impact Assessment (EIA) for which a Scoping Opinion will be requested in Summer 2022.

The applications for the substation and switching station will be progressed under the Town and Country Planning (Scotland) Act 1997 (as amended). These applications will be 'national' development as specified within National Planning Framework 3 (NPF3) and as such will follow the 'major' application procedure, whereby a formal Proposal of Application Notice will be submitted at least 12 weeks prior to the submission of formal planning applications. This process requires formal public consultation.

The applications will incorporate all necessary works to construct and operate the infrastructure including access (access track upgrades), landscape planting and screening, drainage and fencing. Given the interaction these proposals have with the OHL application it has been accepted that these projects will also be accompanied by an EIA, the content of this will be scoped with The Highland Council in summer 2022.

The target date for submission of applications for consent for both the OHL and the substation/switching stations is December 2022.

Corridor, Route, Alignment and Site Selection Process

Corridor, Route and Alignment Process

SSEN Transmission has developed and implemented formal **Guidance for the selection of routes and alignments for its new Overhead Lines (OHL)**.

The main aim of the Guidance is to provide a consistent approach to the selection of new OHL alignments and is underpinned by our statutory obligations to: 'Develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what we reasonably can to mitigate any effect which the proposals would have on the natural beauty

of the countryside or on any such flora, fauna, features, sites buildings or objects'.

These duties capture the principal objective of the routeing process which is to balance technical and cost considerations with environmental considerations, to select a proposed alignment which is economically viable, technically feasible, minimises impacts on important resources or features of the environment and reduces disturbance to those living in it, working in it, visiting it or using it for recreational purposes.

Key Stages

For new OHL projects, the process follows four principal stages, each iterative and increasing in detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance. This staged process leads to the identification of a proposed overhead line alignment which is capable of being granted consent by the Scottish Government under Section 37 of the Electricity Act 1989. The key stages are:

Stage 1: Strategic Options Assessment/Routeing Strategy

The starting point in all OHL projects is to establish the need for the project and to select the preferred strategic option to deliver it. This process will be triggered by the preparation of a number of internal assessments and documents which identify the technology to be used and the point on the existing Transmission network where a connection can be made. The Routeing Strategy also determines which of the following stages are required.

Stage 2: Corridor Selection

Corridor Selection seeks to identify possible corridors which are as short as practicable, which are not constrained by altitude or topography and which would avoid, where possible, any interaction with man-made infrastructure and features of environmental sensitivity. Corridors may be 1km wide or may extend over many kilometres in width, depending on the scale and length of the project. For the projects included in this consultation the Corridor stage is omitted as the location of the point of connection on the network naturally define a Corridor of a few kilometres in width. Routeing a new OHL any further afield would not be practicable due to topographical constraints.

Stage 3: Route Selection

Route Selection seeks to find a route within the corridor which avoids where possible physical, environmental and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable, taking in to account factors such as altitude, slope, ground conditions and access. The dimensions of a route will depend on the context provided by the corridor. A route may be several kilometres in length and may range from 200m to 1km in width, depending on the scale of the project, the nature and extent of constraints and the character of the area in question. A number of route options are usually identified and assessed, leading to a preferred route being selected.

Stage 4: Alignment Selection

Alignment Selection seeks to identify an alignment within the preferred route and to define the access strategy which will be adopted in terms of, for example, the nature and extent of temporary and/or permanent access tracks and possible road improvements. The alignment will be defined by, amongst other things, the location of terminal and angle support structures for OHLs and sealing end compounds for UGCs. It will be influenced by local constraints, such as individual properties, their aspect, and amenity; ground suitability; habitats; and cultural heritage features and setting. There may be more than one distinct alignment option through the preferred route. It is more likely however that variants to sections of an alignment may arise where there are different ways to avoid a constraint.

What happens next

The outcome of the OHL Routeing Process is to identify a Preferred Alignment, which following stakeholder engagement with the public, statutory bodies and landowners, is finalised as a Proposed Alignment to be taken forward for formal environmental assessment and consent application in December 2022.

Corridor Selection

The Area of Search for the Study Corridor identified during Stage 2: Corridor Selection of the project, was largely defined by a broad area centred on the start point of the grid connection (the consented Coire Glas Pumped Hydro Scheme), and end point (connection to the National Grid at Fort Augustus Substation near Auchterawe), and the general direction the OHL connection would require to be routed between the two, over a maximum distance of approximately 19 km. The Corridor Study Area is illustrated in Figure 1 on Page 3.

The Study Corridor identified within the Area of Search was developed following the identification of the constraints within the wider area which would make the construction of an OHL development unfeasible.

These include Loch Lochy, Loch Oich to the east banks which rise up sharply towards the Monadhliath Mountains, several peaks and steep topography surrounding the consented Coire Glas Pumped Hydro Scheme and steep topography and existing wind farm infrastructure to the north-west of Invergarry.



Site Selection Process

SSEN Transmission has developed and implemented formal Guidance and procedures for the Substation Site Selection for Voltages at above 132kV.

The approach set out in this guidance is underpinned by the statutory obligations on SHE Transmission to 'develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites buildings or objects'.

These duties capture the principal objective of the site selection process which is to facilitate the design, consenting, construction and operation of a substation in a manner that is technically feasible and financially viable whilst causing, on balance, the least disturbance during construction and operation to the environment and the people who live, work and use it for recreation.

The guidance splits the principal site selection into stages, as follows:

- **Stage 0:** Pre-Site Selection Activities – Strategic Connections Options Appraisal;
- **Stage 1:** Initial Site Screening;
- **Stage 2:** Detailed Site Selection; and
- **Post Site Selection Activities** – Consenting Process.

Coire Glas Switching Station

The Area of Search for the proposed Coire Glas Switching Station was identified following a desk-based assessment. The identification of the Area of Search for the switching station largely focused on the area to the east and north-east of the location of the Power Station cavern within the Pumped Hydro Scheme.

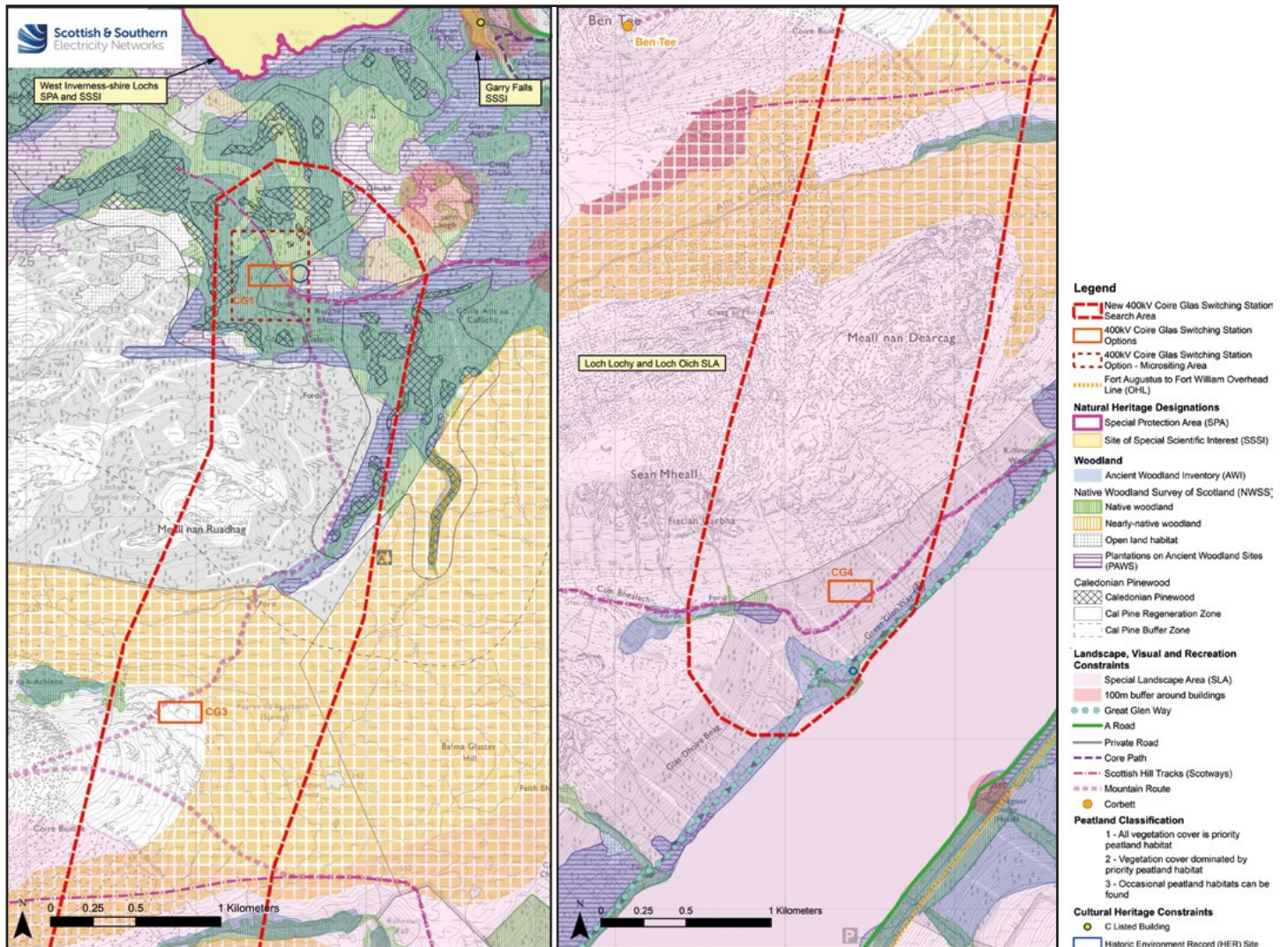
Within the Area of Search for the Coire Glas Switching Station, a more refined 'Preferred Search Area' was identified, to represent the area where a cable (within an underground tunnel) between the consented Power Station cavern and the new Switching Station site could feasibly 'surface'.

The underground cable route is required to connect between the Power Station cavern and the surface switching station to provide the point of connection to the Transmission infrastructure. This is being developed as part of the Pumped Hydro Scheme.

Switching station site options are considered to be unfeasible in the area immediately surrounding the consented Power Station cavern, due to the mountainous terrain to the north and steep slopes surrounding Loch Lochy to the south of the Power Station cavern. Three potential site options for the switching station (Site Options CG1, CG3 and CG4) were identified within the Area of Search, as illustrated in **Figure 2**.

The table on the next page provides an indication of the potential constraints for each site.

Figure 2 Site Options



Coire Glas Switching Station Environmental Considerations

Ecology and Ornithology

CG1	CG3	CG4
Site is located in an area of semi-natural woodland and Scot's pine plantation identified on the Ancient Woodland Inventory (AWI), and a Caledonian Pinewood Regeneration Zone.	Potential effects on protected avian species, including Merlin (<i>Falco columbarius</i>) and Short-eared Owl (<i>Asio flammeus</i>). Potential effects on Annex 1 habitats, including blanket mire habitat and wet heaths.	None identified.

Hydrology, Water and Soils

CG1	CG3	CG4
One Private Water Supply (PWS) within 1 km of Site at Glenluie.	No PWS within 1 km of Site. Areas of Class 2 priority peatland are recorded downhill of the site option to the north, east and south, in the flatter areas towards the Allt na Cailliche and Allt nan Seileach.	The location of this Site avoids Class 1 and Class 2 Peatland Soils. There are no PWS within 1 km of Site. However, proximity to Loch Lochy and associated potential flood risk is a potential constraint.

Cultural Heritage

CG1	CG3	CG4
One non-designated heritage asset identified near Site.	None identified.	None identified.

Landscape and Visual

CG1	CG3	CG4
There is the potential to affect Caledonian Pine woodland within this area which is an important feature of the landscape. Potential for switching station to be visible from some areas along the northern shore of Loch Garry and elevated areas around Faichem.	Open and visible location where any permanent structures would be likely to appear widely visible with the potential to disrupt the simple landscape composition and affect sense of wildness. Due to the elevated and exposed location, opportunities for landscape and visual mitigation would be limited. Site would be potentially viewed by recreational users of the landscape accessing Ben Tee.	Site is located within the Loch Oich and Loch Lochy Special Landscape Area (SLA), within an area of commercial forest plantation. A development at this site may lead to the disruption of the consistently steep, regular slope which is cited within the SLA Special Quality: The Great Glen. Potential to lead to cumulative effects with the lower reservoir features of the Coire Glas Pumped Storage Scheme, leading to a greater apparent area of development. Likely to be viewed by recreational users of the surrounding walking routes, Loch Lochy and the A82. Forested setting may provide some opportunity for mitigation.

Land Use

CG1	CG3	CG4
In order to construct the Switching Station, felling of commercial forestry (mix of productive conifer trees, including Scot's Pine) would be required. Located near Scottish Hill Track and Mountain Trail leading to summit of Ben Tee.	Site is located near Mountain Trail from White Bridge leading to summit of Ben Tee. Site would be potentially viewed by recreational users of the wider landscape accessing Ben Tee.	Felling of commercial forestry (productive conifer trees). Passing views by recreational users of the wider landscape including users of The Great Glen Way and National Cycle Route 78 (NCR 78).

Planning

CG1	CG3	CG4
None identified	None identified	None identified

Overall, **Site Option CG1 is considered to be the Preferred Site Option** for the proposed 400kV Coire Glas Switching Station. Although Site Option CG1 would potentially impact classified areas of woodland within the forestry at White Bridge, compensatory planting could mitigate any loss. In addition to this, constructing the proposed switching station within the plantation woodland would provide good opportunities for mitigation to limit visual effects for receptors in the surrounding area.

Coire Glas 400kV Switching Station Technical Considerations

The location of the switching station for the Coire Glas point of connection is primarily dictated by the location of the cable tunnel exit point which has been developed in coordination with the Coire Glas Pumped Hydro Scheme developer. However again, a choice of locations was considered and subjected to assessment against our selection criteria.

It is anticipated that traffic for the construction and operation of these projects would reach site via two main access routes. Access to the switching station would be via the existing forestry track network via the A87, then onto the existing forestry access track network. This network of tracks would also be utilised for its construction and maintenance if the section of new overhead line is in this area.

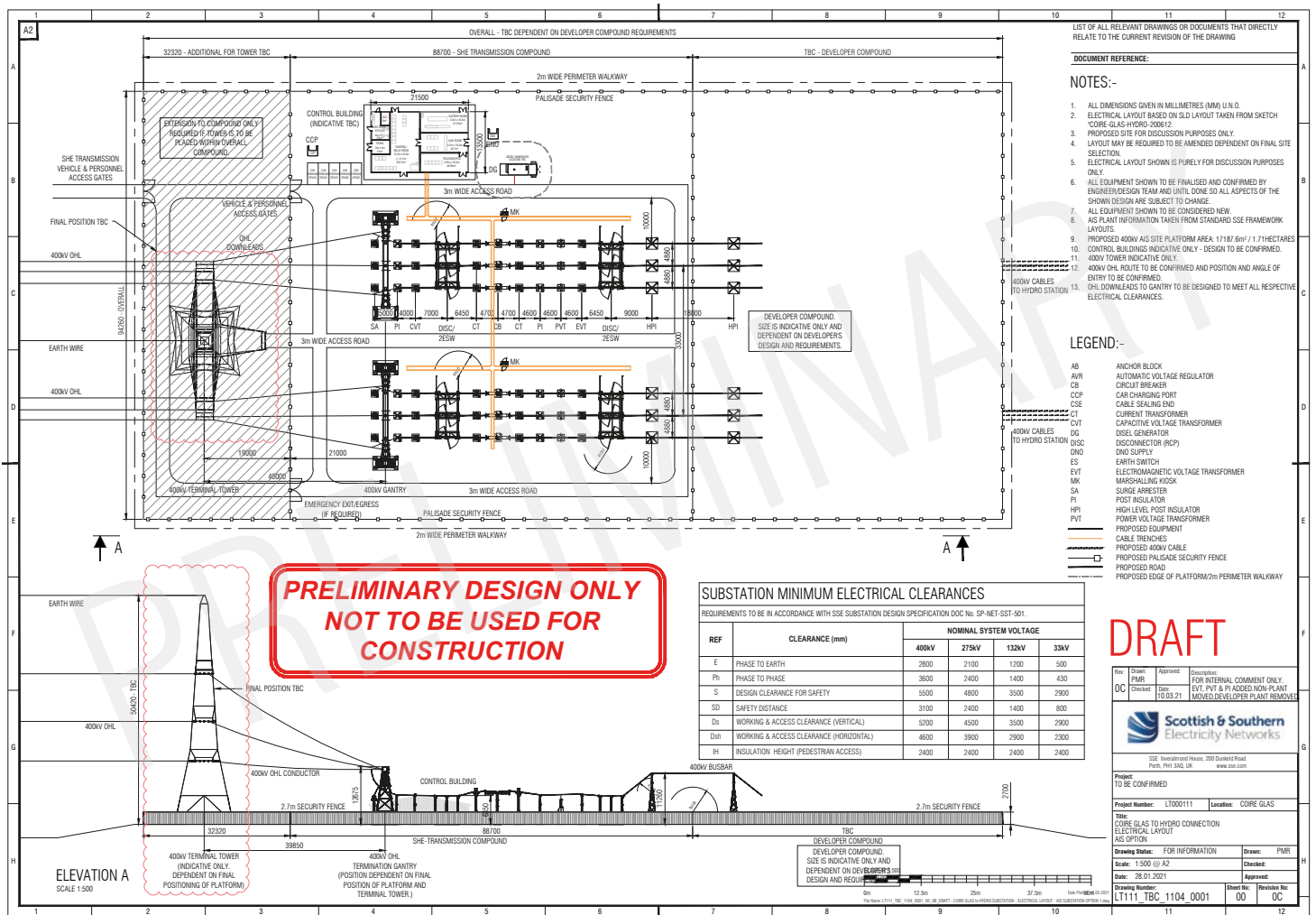
The existing access track network to the northwest of Invergarry will be utilised for access for construction and maintenance and we will aim as far as is practicable to share access with the Coire Glas Developer.

Gas Insulated Switchgear (GIS) is not currently available on the market for 400kV switchgear equipment, so AIS technology is proposed. Assessments of the altitude and wind speed provides no technical justification for indoor equipment and as such an outdoor facility is proposed in this location.

The switching station includes 400kV equipment to provide the point of the connection for the Coire Glas Pumped Hydro Scheme. It will contain two control buildings: one will house equipment for the Developer, and one will house Transmission equipment.

Substation Compound size (including Developer's compound) approx. 165m x 94m = 15,510m²

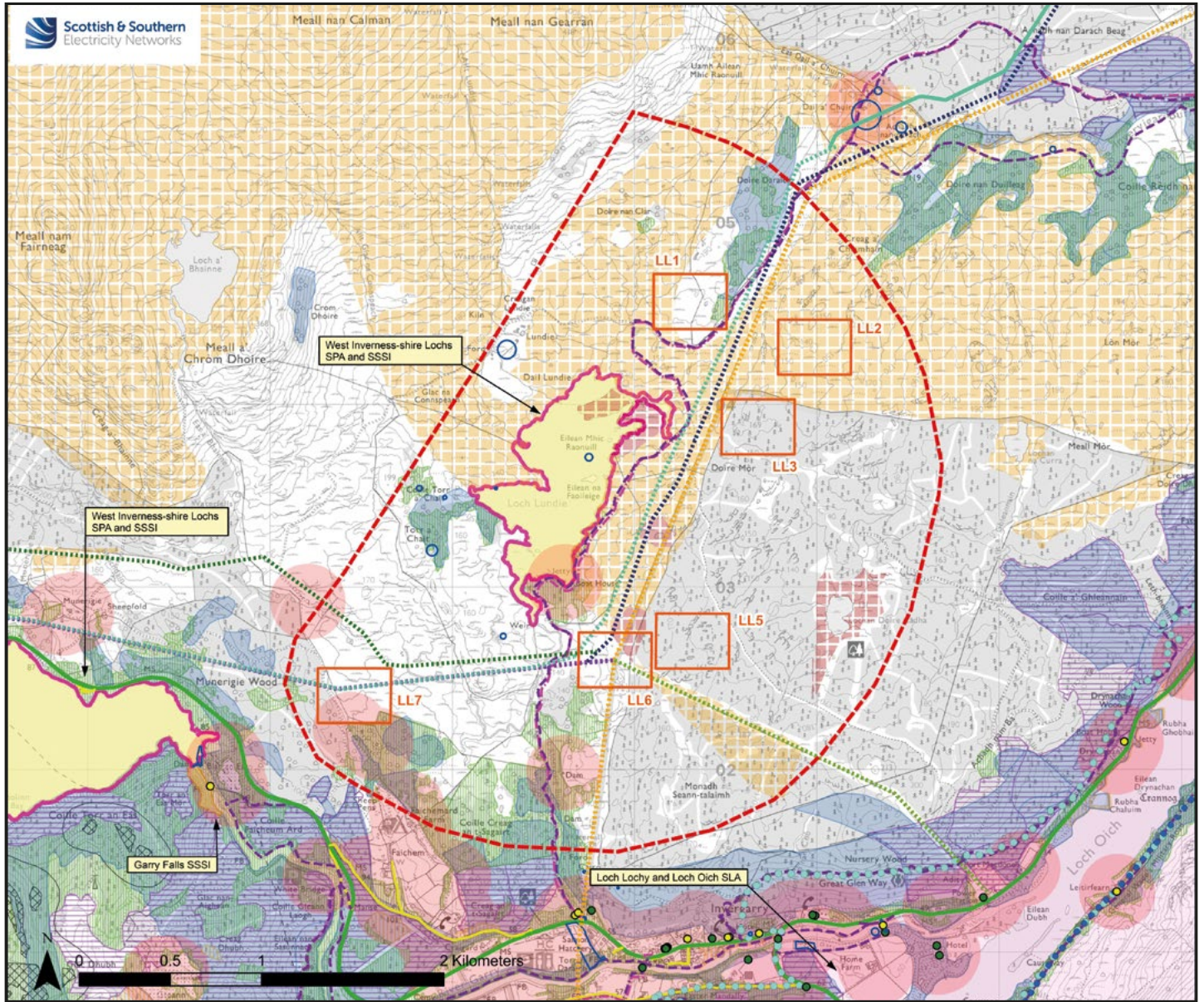
Control Buildings are approx. 21m x 14m. Height is between 6 and 8m. Height of the highest equipment is 400kV Busbar which is less than 12m.



Loch Lundie 132/400kV Substation

As the Loch Lundie Substation is proposed as part of a rationalisation project of OHLs in the area, the identification of the Area of Search for the substation largely focused on the area around Loch Lundie where several existing OHLs converge. Six potential site options for the substation (Site Options LL1, LL2, LL3, LL5, LL6 and LL7) were identified within the Area of Search, as illustrated in Figure 3. The table on the following pages provides an indication of the potential constraints for each site.

Fig 3 Loch Lundie substation site options



<p>Legend</p> <ul style="list-style-type: none"> New 400kV Loch Lundie Substation Search Area 400kV Loch Lundie Substation Options (indicative) 	<p>Natural Heritage Constraints</p> <ul style="list-style-type: none"> Special Protection Area (SPA) Site of Special Scientific Interest (SSSI) 	<p>Woodland</p> <ul style="list-style-type: none"> Ancient Woodland Inventory (AWI) Caledonian Pinewood Caledonian Pine Regeneration Zone Caledonian Pine Buffer Zone Native Woodland Survey of Scotland (NWSS) Native woodland Nearly-native woodland Open land habitat Plantations on Ancient Woodland Sites (PAWS) 	<p>Landscape, Visual and Recreation Constraints</p> <ul style="list-style-type: none"> Special Landscape Area (SLA) 100m buffer around buildings A Road Minor Road Private Road Great Glen Way Core Path Scottish Hill Tracks (Scotways) Cycle Route 78 	<p>Peatland Classification</p> <ul style="list-style-type: none"> 1 - All vegetation cover is priority peatland habitat 2 - Vegetation cover dominated by priority peatland habitat <p>Cultural Heritage Constraints</p> <ul style="list-style-type: none"> B Listed Building C Listed Building Historic Environment Record (HER) 	<p>Existing Infrastructure</p> <ul style="list-style-type: none"> Fort Augustus to Fort William Overhead Line (OHL)* Fort Augustus to Skye T OHL* Quoch to Abercharder OHL* Bharaidh to Beinneun OHL Beauly to Denny OHL Invergarry Tee OHL <p>*to be replaced by Skye Reinforcement</p>	<p>Proposed Infrastructure</p> <ul style="list-style-type: none"> Skye Reinforcement (Underground Cable) Skye Reinforcement (Overhead Line)
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Loch Lundie Substation Environmental Considerations

Loch Lundie Substation

Ecology and Ornithology

LL1	LL2	LL3	LL5	LL6	LL7
Potential effects on the qualifying features of the West Inverness-shire Lochs SPA/SSSI.	Potential effects on the qualifying features of the West Inverness-shire Lochs SPA/SSSI.	Potential effects on the qualifying features of the West Inverness-shire Lochs SPA/SSSI.	Potential effects on the qualifying features of the West Inverness-shire Lochs SPA/SSSI.	Potential effects on the qualifying features of the West Inverness-shire Lochs SPA/SSSI.	Potential effects on the qualifying features of the West Inverness-shire Lochs SPA/SSSI.
Site is located within an area of wet heath and blanket mire, which are classified as Annex 1 Habitats.	Site is located within an area of wet heath and blanket mire, which are classified as Annex 1 Habitats.			Site is located within an area of wet heath and blanket mire, which are classified as Annex 1 Habitats.	Site is located within an area of wet heath and blanket mire, which are classified as Annex 1 Habitats.

Hydrology, Water and Soils

LL1	LL2	LL3	LL5	LL6	LL7
Areas of Class 2 Peatland Soils are recorded downhill of the site option on all sides.	The site is located within an Area of Class 2 priority peatland.	Areas of Class 1 and Class 2 Peatland Soils are recorded within 1 km of the Site, towards Loch Lundie and in the area immediately surrounding the Site Option.	Areas of Class 1 and Class 2 Peatland Soils are recorded within 1 km of the site, in the area immediately around Lochan Doire Cadha and near the summit of the Monadh Seann-talaimh.	Areas of Class 1 and Class 2 Peatland Soils are recorded within 1 km of the site, to the south-east of the Site and towards Loch Lundie.	None identified.
The site is located within the Aldernaig catchment, which is designated as a Drinking Water Protection Area (DWPA).				The site is located within the Aldernaig catchment, which is designated as a DWPA.	

Cultural Heritage

LL1	LL2	LL3	LL5	LL6	LL7
None identified.	None identified.	None identified.	None identified.	None identified.	None identified.

Landscape and Visual

LL1	LL2	LL3	LL5	LL6	LL7
<p>This option would spread the appearance of grid infrastructure to a new part of the landscape, around Loch Lundie.</p> <p>This option would be visible from a Core Path to the east of Loch Lundie.</p> <p>Cumulative effects with existing grid infrastructure.</p>	<p>The northerly position of this option would lead to a greater number of OHLs extending across the landscape around Loch Lundie.</p> <p>This option would be visible from a Core Path to the east of Loch Lundie.</p> <p>Cumulative effects with existing grid infrastructure.</p>	<p>Site is at an elevated position, where the substation would be potentially prominent.</p> <p>Proximity to the existing OHL may limit opportunities for landscape mitigation on the westerly side, where the more sensitive landscapes are located.</p> <p>This option would be visible from a Core Path to the east of Loch Lundie.</p> <p>Cumulative effects with existing grid infrastructure.</p>	<p>This option would be visible from a Core Path to the east of Loch Lundie. However, it is envisaged that these views would be limited and glimpsed.</p> <p>Cumulative effects with existing grid infrastructure.</p>	<p>The open situation would be widely visible across the Loch Lundie area.</p> <p>A development at this site may appear as a feature on the summit of the enclosing hills of Glen Garry.</p> <p>The open position and existing grid infrastructure may lead to effective landscape mitigation being difficult to achieve.</p> <p>A development at this site may be visible from some properties around Wester Mandally.</p> <p>This option would be visible from a Core Path to the east of Loch Lundie.</p> <p>Cumulative effects with existing grid infrastructure.</p>	<p>The westerly position of this option would require additional OHL connections across the landscape to the south of Loch Lundie.</p> <p>Potential that filtered views of the site could be obtained from properties and caravan park at Faichem.</p> <p>This option may be visible from a Core Path to the east of Loch Lundie, but views would be relatively small and distant.</p>

Land Use

LL1	LL2	LL3	LL5	LL6	LL7
<p>Located near Core Path to the east of Loch Lundie.</p>	<p>Located near Core Path to the east of Loch Lundie.</p>	<p>Felling of commercial forestry (upland mid rotation commercial conifer forestry).</p> <p>Located near Core Path to the east of Loch Lundie.</p>	<p>Felling of commercial forestry (upland mid rotation commercial conifer forestry).</p> <p>Located near Core Path to the east of Loch Lundie.</p>	<p>Located near Core Path to the east of Loch Lundie.</p>	<p>Potential that filtered views of the site could be obtained from the caravan park at Faichem.</p> <p>This option may be visible from a Core Path to the east of Loch Lundie, but views would be relatively small and distant.</p>

Planning

LL1	LL2	LL3	LL5	LL6	LL7
None identified.	None identified.	None identified.	None identified.	None identified.	None identified.

Overall, **Site Option LL5 is considered to be the Preferred Site Option** for the proposed 132/400kV Loch Lundie substation. This option would provide good opportunities for mitigation to limit visual effects for receptors in the surrounding area.

Loch Lundy 132/400kV Substation Technical Considerations

Several sites in the Loch Lundy area were considered for the new substation and a preferred substation site was identified based on it being the most technically feasible and economically viable location, giving due consideration to a range of technical, environmental and cost criteria.

The preferred location optimises the proximity of existing access tracks which can be upgraded and extended, which will reduce the requirements for constructing new access roads. The existing access track network to the north-east of the Invergarry Power Station is required to be upgraded and extended to access the new substation at Loch Lundy and would also be utilised to construct the overhead line section from Loch Lundy to Fort Augustus. The existing access track was constructed to carry heavy-duty forestry vehicles, presenting a suitable and obvious choice and aligns with our aim of, as far as practicable limiting new access construction.

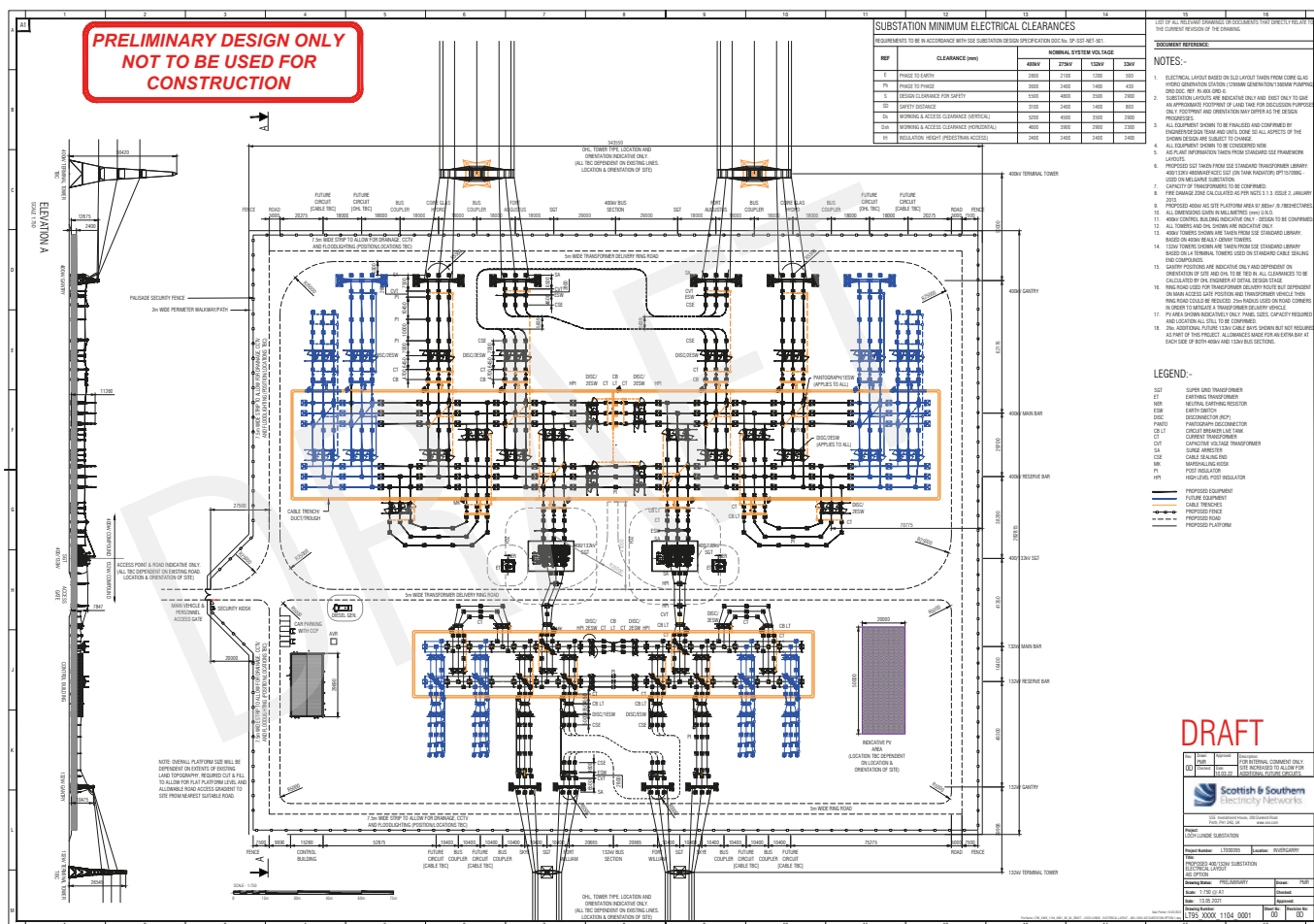
The preferred site is in proximity to the existing 132kV overhead line routes for Fort William and Invergarry Power Station. These lines will be terminated into the new substation as part of this project to rationalise the existing overhead lines in the area.

This location will reduce the requirement of additional tower structures to divert these into the substation.

Gas Insulated Switchgear (GIS) is not currently available on the market for 400kV switchgear equipment, so AIS technology is proposed. Assessment of the altitude and wind speed provides no technical justification for indoor equipment and as such an outdoor facility is proposed in this location. The substation is designed to accommodate both 132kV equipment to allow connection of the existing 132kV Fort William and Invergarry Power Station OHLs which will then be transformed to 400kV and transmitted to Fort Augustus on the new 400kV OHL. The substation also includes 400kV equipment to allow the connection of the Coire Glas OHL circuits and will allow a space provision only for potential future renewable generation connection without having to extend the substation footprint.

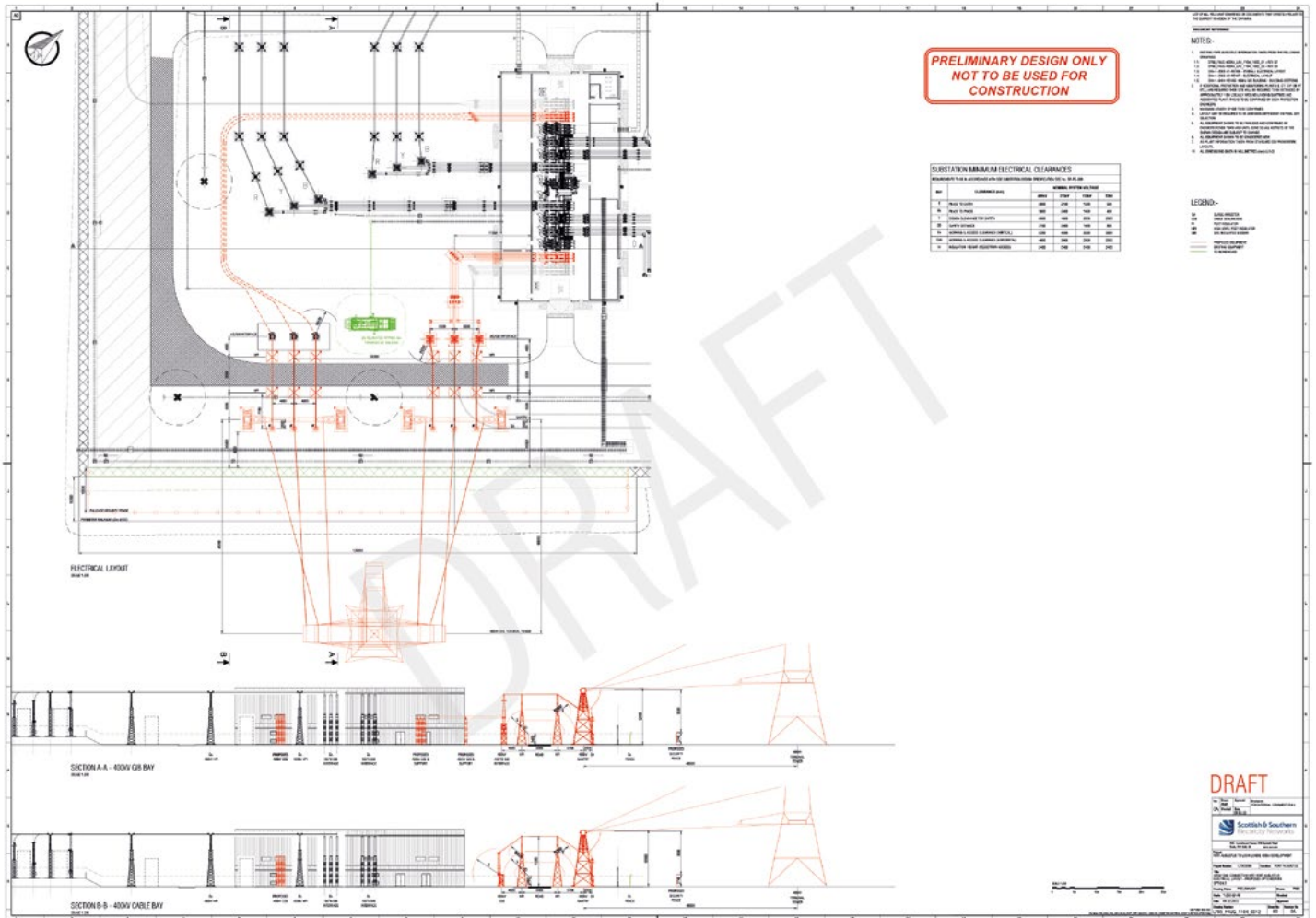
Substation Compound size approx. 344m X 283m= 97,069m².

Control Building is approx. 21m x 14m. Height is between 6 and 8m. Height of the highest equipment is the 400kV Busbar which is less than 12m.



Entry into Fort Augustus Substation

The OHL entry into the Fort Augustus substation is determined by the preferred alignment which has taken account of the various constraints around the Auchterawe area such as Tor Dhuin and proximity to dwellings. It also takes account of existing planning conditions and constraints related to planting schemes, SUDS ponds and the like. As such we have to approach and enter from the south west. We require to extend the existing compound at this corner in order to install the new feeder bays.



Routeing Process

The Study Corridor identified during Stage 2: Corridor Selection (as illustrated in Figure 1), formed the Area of Search for Stage 3: Route Selection of the Route Selection Process for the project. Within the Study Corridor, potential route options were identified and assessed for both sections of the OHL(i.e. Coire Glas Switching Station (CG) to Loch Lundie Substation (LL) to Fort Augustus Substation (FA), which collectively comprise the new OHL.

Coire Glas – Loch Lundie

Three potential route and alignment options (Route Options CG-LL1, CG-LL2 and CG-LL3) were identified between the Coire Glas 400kV Switching Station Search Area and the Loch Lundie 132/400kV Substation Search Area. Refer to Figure 1 on page 3.

Ecology and Ornithology

CG-LL1	CG-LL2	CG-LL3
<p>The West Inverness-shire Lochs SPA/SSSI, and Garry Falls SSSI both lie within this Route Option.</p> <p>Initial walkover surveys (Aug 2021) recorded the presence of pine marten (<i>Martes martes</i>) in forestry to the south of the River Garry.</p> <p>Loss of areas of semi-natural woodland and Scot's pine plantation identified on the AWI, and a Caledonian Pinewood. Regeneration Zone.</p> <p>Potential effects on protected avian species, including Osprey (<i>Pandion haliaetus</i>), Goshawk (<i>Accipiter gentilis</i>) and Crossbill (<i>Loxia curvirostra</i>).</p>	<p>Initial walkover surveys undertaken in August 2021 highlighted the presence of pine marten in areas of forestry south of the river Garry.</p> <p>Loss of areas of semi-natural woodland and Scot's pine plantation identified on the AWI.</p> <p>Potential effects on protected avian species including Merlin (<i>Falco columbarius</i>), Short-eared Owl (<i>Asio flammeus</i>), Osprey, Goshawk and Crossbill.</p>	<p>Initial walkover surveys (Aug 2021) recorded the presence of pine marten (<i>Martes martes</i>) in areas of forestry along Loch Lochy and around Invergarry.</p> <p>Loss of areas of semi-natural woodland and Scot's pine plantation identified on the AWI.</p> <p>Potential effects on Schedule 1A and Schedule 1 bird species or Red or Amber listed if breeding or hunting within the route, including Golden Eagle (<i>Aquila chrysaetos</i>).</p>

Hydrology, Water and Soils

CG-LL1	CG-LL2	CG-LL3
<p>Potential flood risk where the OHL would cross the River Garry.</p> <p>Route extends marginally into the Aldernaig catchment, which is designated a DWPA.</p> <p>There are several PWS, registered within catchments downgradient of this route.</p>	<p>Route extends into the lower reaches of the Aldernaig catchment, which is designated a DWPA.</p> <p>There are several PWS, registered within catchments downgradient of this route.</p> <p>Potential flood risk where the OHL would cross the River Garry and Aldernaig Burn.</p>	<p>Areas of Class 1 and Class 2 Peatland Soils recorded in this Route.</p> <p>Route extends into the eastern reaches of the Aldernaig catchment, which is a designated DWPA.</p> <p>There are several PWS, registered within catchments downgradient of this route.</p>

Cultural Heritage

CG-LL1	CG-LL2	CG-LL3
<p>Potential for setting effects on one Category C Listed Building within Route.</p> <p>Two non-designated heritage assets identified within Route.</p>	<p>Potential for setting effects on one Category B Listed Building of medium sensitivity.</p> <p>Seven non-designated heritage assets within Route.</p>	<p>Potential for direct and setting impacts on an Inventory Historic Battlefield of high sensitivity</p> <p>Potential for settings effect upon a Scheduled Monument of high sensitivity</p> <p>There would be a potential direct impact on up to 26 non-designated HER site of low sensitivity.</p>

Proximity to Dwellings

CG-LL1	CG-LL2	CG-LL3
<p>At least one property at Glenluie (Whitebridge) is located within Route.</p> <p>A few scattered properties at Faichem, as well as part of the Faichemard Farm Caravan and Camping site, are located within the Route.</p>	<p>The Route would cross two clusters of properties, at Wester Mandally and the western extent of Invergarry.</p>	<p>The Route would cross two main clusters of properties, at Easter Mandally and the eastern extent of Invergarry.</p> <p>A few scattered properties along a minor road from the A82, which leads to North Laggan, Balma Glaster and Kilfinnan Farm, are located within the Route.</p>

Landscape and Visual

CG-LL1	CG-LL2	CG-LL3
<p>The Route would require a new wayleave to be established through forestry around Whitebridge, with the potential to affect areas of Caledonian Pine.</p> <p>Route would cross the A87, leading to briefly obtained views.</p> <p>Route may be visible from the car park and recreational area at Whitebridge, including surrounding footpaths.</p> <p>Route may lead to visual effects on users of a Core Path which passes to the east of Loch Lundie.</p> <p>Potential cumulative effects with other existing OHLs in this area to the of Loch Lundie.</p>	<p>This Route would require a new wayleave down the steep glen sides and would likely appear prominent within views from properties and recreational areas around the west of Invergarry.</p> <p>Likely visual effects on users of other Core Paths around Invergarry and recreational users ascending Ben Tee.</p> <p>Potential cumulative effects with other existing OHLs in the areas of Glen Garry and Loch Lundie.</p>	<p>Likely impacts on features cited within the Special Qualities of the Loch Lochy and Loch Oiche SLA, including the steep Glenside and steep enclosing slopes.</p> <p>Route would cross the Great Glen and would be likely to form a noticeable feature which would be inconsistent with the existing pattern of development.</p> <p>Requirement for the removal of trees to facilitate a wayleave which could lead to effects on policy and designed landscape areas in the grounds of the Invergarry Castle Hotel or effects on domestic scale landscapes around houses and properties.</p> <ul style="list-style-type: none"> This route would pass along the western side of the Great Glen and would be likely to be visible from residential and tourist properties from areas including Kilfinnan, Laggan Locks and North and South Laggan.

Land Use

CG-LL1	CG-LL2	CG-LL3
<p>Felling of commercial forestry (mix of productive conifer trees, including Scot's Pine and birch) throughout Route.</p> <p>AWI maps broad bands of Ancient Woodland (of semi-natural origin) across the full width of Route.</p> <p>More than 50% of this Route is located within the Glen Garry Caledonian Pinewood Buffer Zone.</p> <p>Part of the car park and recreational area at Whitebridge, including surrounding footpaths, and the Faichemard Farm Caravan and Camping site are located within the Route.</p>	<p>Felling of conifer plantations.</p> <p>Potential impacts on woodland designations including AWI and Caledonian pinewood regeneration buffer zone.</p> <p>Likely visual effects on users of recreational routes, including Core Paths and woodland trails, located in this Route, as well as recreational areas in Invergarry.</p>	<p>Potential impact on the commercial viability of the conifer plantations including South Laggan Forest.</p> <p>Potential impacts on designations including AWI, NWSS, wet woodland, PAWS and upland birchwood.</p> <p>Potential impacts on recreational routes including The Great Glen Way and Cycle Route 78 which are located within this route.</p> <p>Route would largely be routed through land owned by Aberchalder Estate, meaning possible effects on recreational and sporting activities, including commercial highland sports.</p>

Planning

CG-LL1	CG-LL2	CG-LL3
<p>A development of residential cabins to accommodate the local hospitality industry (Ref: 21/02045/FUL) has been consented within the Route, near White Bridge.</p>	<p>A development of eight eco holiday cabins (Ref: 20/04717/FUL) to the north of the A87 near Invergarry, has been consented within the Route.</p>	<p>A twelve-room hotel annex and erection of staff accommodation house (Ref: 20/00303/FUL) at the Invergarry Hotel, has been consented within the Route.</p>

Although all route options would have likely significant impacts on forestry and woodlands, when all key constraints are considered, **Route Option CG-LL1 is the Preferred Option** for the grid connection between the new Coire Glas Switching Station and the new Loch Lundie Substation.

Loch Lundie Substation to Fort Augustus Substation

Three potential route and alignment options (Route Options LL-FA1, LL-FA 2 and LL-FA 3) were identified between the Loch Lundie 132/400kV Substation Search Area and the existing Fort Augustus Substation. Refer to **Figure 4**.

Ecology and Ornithology

LL-FA1	LL-FA2	CG-LL3
<p>Initial walkover surveys undertaken in August 2021 highlighted the presence of pine marten in areas of forestry south of the river Garry.</p> <p>Loss of woodland, including AWI woodland, is considered probable from routeing infrastructure through this route.</p> <p>Potential impacts on protected (Schedule 1) species of Goshawk (<i>Accipiter gentilis</i>) and Crossbill (<i>Loxia curvirostra</i>), with potential impacts on several woodland species are Red and Amber List species also.</p>	<p>Initial walkover surveys undertaken in August 2021 highlighted the presence of pine marten in areas of forestry in Inchnacardoch forest. Signs of otter were also recorded along minor burns and under bridges in forested areas.</p> <p>Potential impacts on Annex 1 habitats including blanket mire and wet heath.</p> <p>Loss of woodland, including AWI woodland, is considered probable from routeing infrastructure through this Route.</p> <p>Potential impacts on protected (Schedule 1) species of Goshawk (<i>Accipiter gentilis</i>) and Crossbill (<i>Loxia curvirostra</i>), with potential impacts on several woodland species are Red and Amber List species also.</p>	<p>Initial walkover surveys undertaken in August 2021 highlighted the presence of pine marten in areas of forestry in Inchnacardoch forest. Signs of otter were also recorded along minor burns and under bridges in forested areas.</p> <p>Loss of woodland, including AWI woodland, is considered probable from routeing infrastructure through this route.</p> <p>Potential impacts on protected (Schedule 1) species of Goshawk (<i>Accipiter gentilis</i>) and Crossbill (<i>Loxia curvirostra</i>), with potential impacts on several woodland species are Red and Amber List species also.</p>

Hydrology, Water and Soils

LL-FA1	LL-FA2	LL-FA3
<p>This Route extends into the lower reaches of the Aldernaig catchment in the southern end of the route option. The entire Aldernaig Burn catchment has been designated a Drinking Water Protection Area (DWPA).</p> <p>There are several private water supplies (PWS) registered within catchments within this Route.</p>	<p>There are several PWS, generally associated with springs and surface water, registered within this Route.</p>	<p>There are several PWS, generally associated with springs and surface water, registered within this Route.</p>

Cultural Heritage

LL-FA1	LL-FA2	LL-FA3
<p>There would be a potential direct impact on three non-designated HER sites located within this Route of low sensitivity.</p>	<p>The Torr Dhuin fort, Fort Augustus (SM794), a SM of high sensitivity is located within this Route.</p> <p>Potential direct impact on up to ten non-designated HER sites located within this Route.</p>	<p>An OHL lattice structure within Route Option Route Option LL-FA3 would have the potential to have direct impacts and/or setting effects upon three SMs of high sensitivity: the Caledonian Canal, Kyltra Lock (SM5291), the Caledonian Canal, Cullochry Lock to Kyltra Lock (SM6496) and the Caledonian Canal, Kyltra Lock to Fort Augustus (SM6497).</p> <p>Potential direct impact on up to 12 non-designated HER sites of low sensitivity located within this Route.</p>

Proximity to Dwellings

LL-FA1	LL-FA2	LL-FA3
<p>Approximately seven properties are located within this Route located on the approach to the existing Fort Augustus Substation.</p>	<p>Approximately twelve properties are located within this Route located on the approach to the existing Fort Augustus Substation.</p>	<p>Three rural properties are located at Coiltry lie within this Route.</p>

Landscape and Visual

LL-FA1	LL-FA2	LL-FA3
<p>Potential visual impacts from The Great Glen.</p> <p>Potential visual impacts from broader wayleave being established in this area.</p> <p>Potential cumulative visual effects in the Loch Lundie area with existing OHL.</p>	<p>Potential cumulative visual impacts with existing OHL in through this Route.</p> <p>Potential visual impacts from increased felling to accommodate a wider wayleave.</p> <p>Potential for notable landscape and cumulative effects for small scale residential landscapes at Auchterawe.</p>	<p>There may be some intervisibility of this Route with the Loch Ness and Duntelchaig SLA and Loch Lochy and Loch Oich SLA.</p> <p>Potential visual impacts from establishment of new wayleave.</p> <p>This Route would cross the Caledonian Canal twice and would likely form a prominent feature in views for boat and towpath users and recreational users of the Great Glen Way.</p> <p>Potential cumulative effect with the existing Beauly – Denny OHL which already crosses the canal.</p> <p>There would also be potential views of this route from properties at and around Coiltry and Kytra Locks and potentially prominent views for recreational users using routes up Invervigar Burn.</p>

Land Use

LL-FA1	LL-FA2	LL-FA3
<p>This Route contains a high proportion of commercial coniferous forest, a mixture of Lodgepole pine and Sitka spruce. The extent of the forest blocks suggest that this route option will have a significant impact upon the commercial viability of this forest area.</p> <p>Potential impacts on designated woodlands including AWI, NWSS and PAWS.</p> <p>Potential impacts on several recreational paths including Core Paths.</p>	<p>This Route contains a high proportion of commercial coniferous forest, a mixture of Lodgepole pine and Sitka spruce.</p> <p>Within the route option some felling and replanting has taken place with open ground present. Clearance required would have further commercial impact on an already constrained route.</p> <p>Potential impacts on designated woodlands including AWI, NWSS and PAWS.</p> <p>An OHL within this route may lead to effects on users of the Core Path/Scottish Hill Track with potential cumulative effects for user of the Core Path/Scottish Hill Track.</p>	<p>Commercial conifer plantations will be commercially compromised by this route option particularly in the eastern end.</p> <p>Potential impacts on designated woodland including AWI, NWSS including upland birchwood, PAWS and, in the northern section, native pinewood.</p> <p>Potential impacts on several sensitive recreational receptors including the Great Glen Way, Cycle Route 78 and the Caledonian Canal.</p>

Planning

LL-FA1	LL-FA2	LL-FA3
<p>A planning application for the erection of a new dwelling to the west of the Fort Augustus Substation (Ref: 20/02548/FUL) is currently under consideration within the route.</p>	<p>A battery energy storage system (Ref: 20/02740/PAN) in the fields near Torr Dhuin has been consented within the Route.</p> <p>A planning application for the erection of a new dwelling to the west of the Fort Augustus Substation (Ref: 20/02548/FUL) is currently under consideration within the route.</p>	<p>Consent has been granted for a new (non-residential) farm building at Coiltry, located within the Route.</p>

Route Option LL-FA2 is the Preferred Option for the grid connection between the new Loch Lundie Substation and the existing Fort Augustus Substation as the proposed OHL would replace, rather than be in addition to, the existing Fort Augustus to Fort William OHL, leading to reduced potential constraints in relation to cultural heritage, proximity to dwellings, visual receptors, landscape character, forestry and woodland and recreation.

Alignment Process

The preferred routes and alignment options are presented in **Figure 4** and **Figure 5**.

Use of steel lattice towers is the preferred engineering solution for the connection.

The range of potentially viable options for the tower support type was assessed via a red, amber, green (RAG) analysis of each support against the SSEN design criteria. A wide range of steel supports are in use by SSENT, however the SSE400 tower suite was selected for the Coire Glas OHL route as the most appropriate technically feasible and economically viable structure.

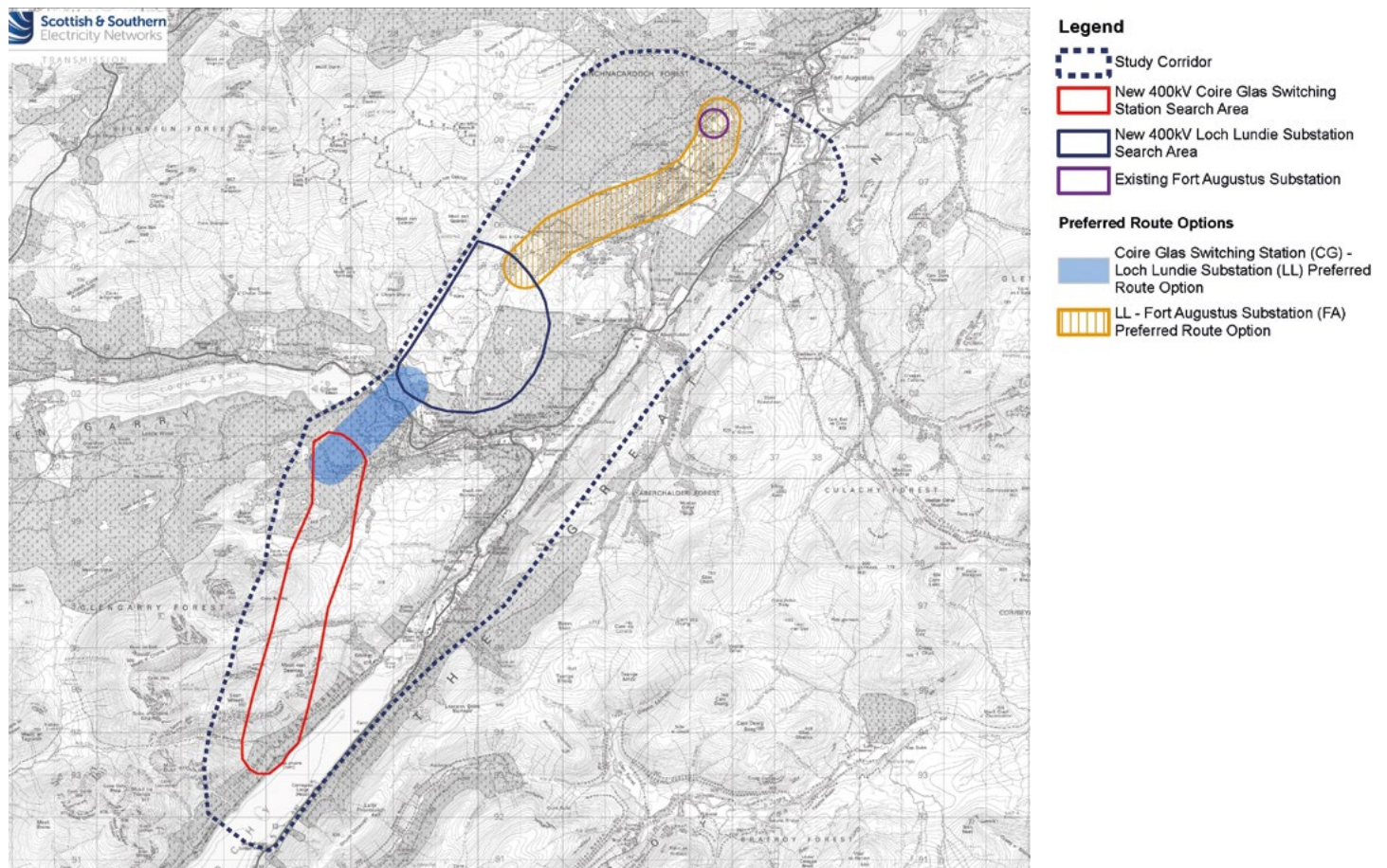
These towers were specifically designed to meet the challenges of constructing and maintaining overhead lines in the highlands of Scotland. The SSE400 design caters for high altitudes and steeply sloping terrain, which offers greater flexibility when aligning the OHL route.

It is currently anticipated that the steel lattice structures would be of the SSE400 suite of towers with a height range of between 48 and 69m tall and have a standard span length of 370m.

A preferred overhead line alignment was identified based on it being the most technically feasible and economically viable alignment, giving due consideration to a range of technical, environmental and cost criteria.

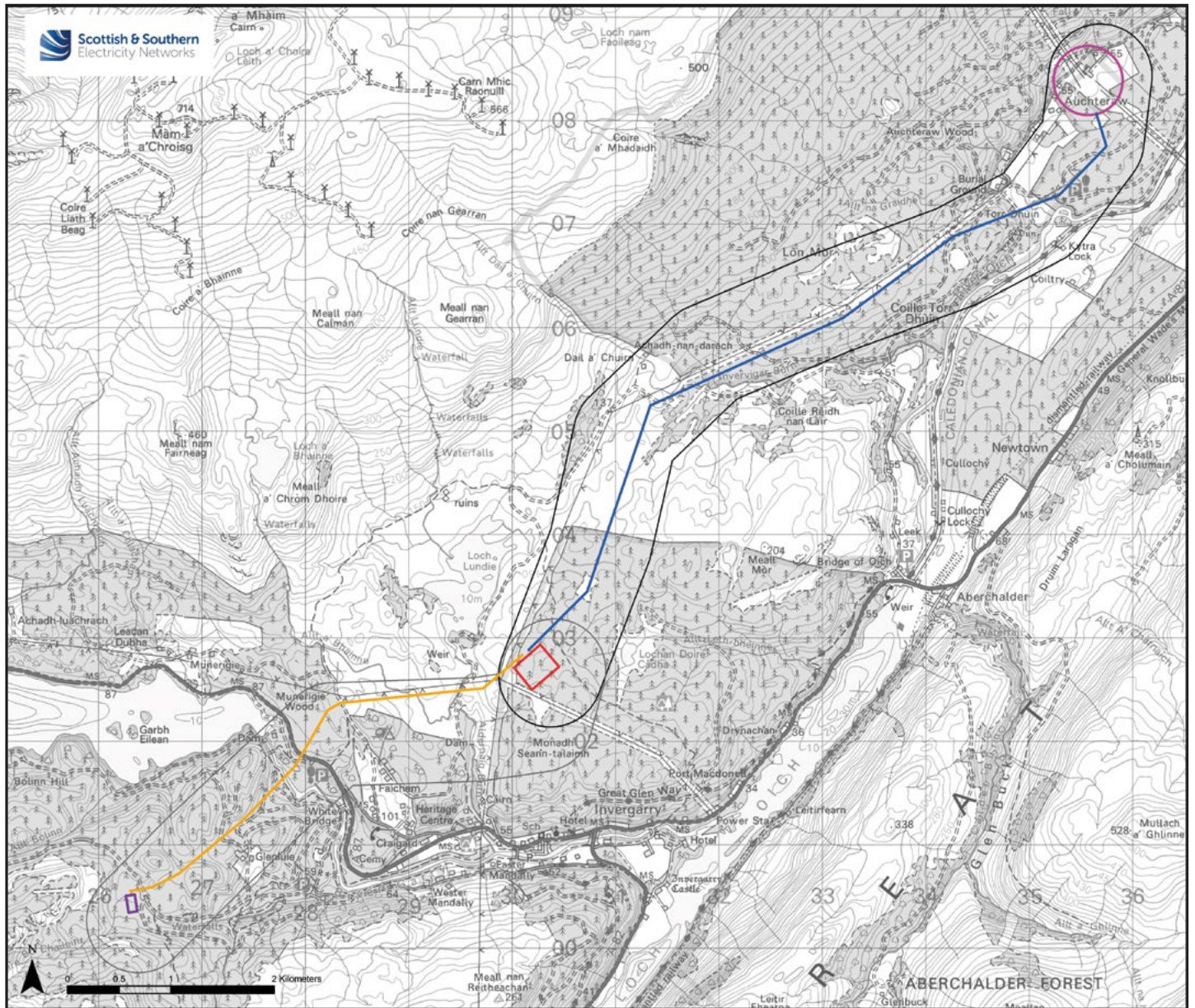
It is anticipated that traffic for the construction and operation of these projects would reach the site via the two main access routes for the switching station and substation as shown above. We require to maintain a permanent access to "angle towers" as this is where any replacement conductors would be pulled through from should they require replacement during the operational life of the OHL. Temporary access is required for suspension towers and would only be installed for the duration of the construction works and removed upon completion.

Figure 4: Preferred Route



Alignment Process

Figure 5: Preferred Alignment

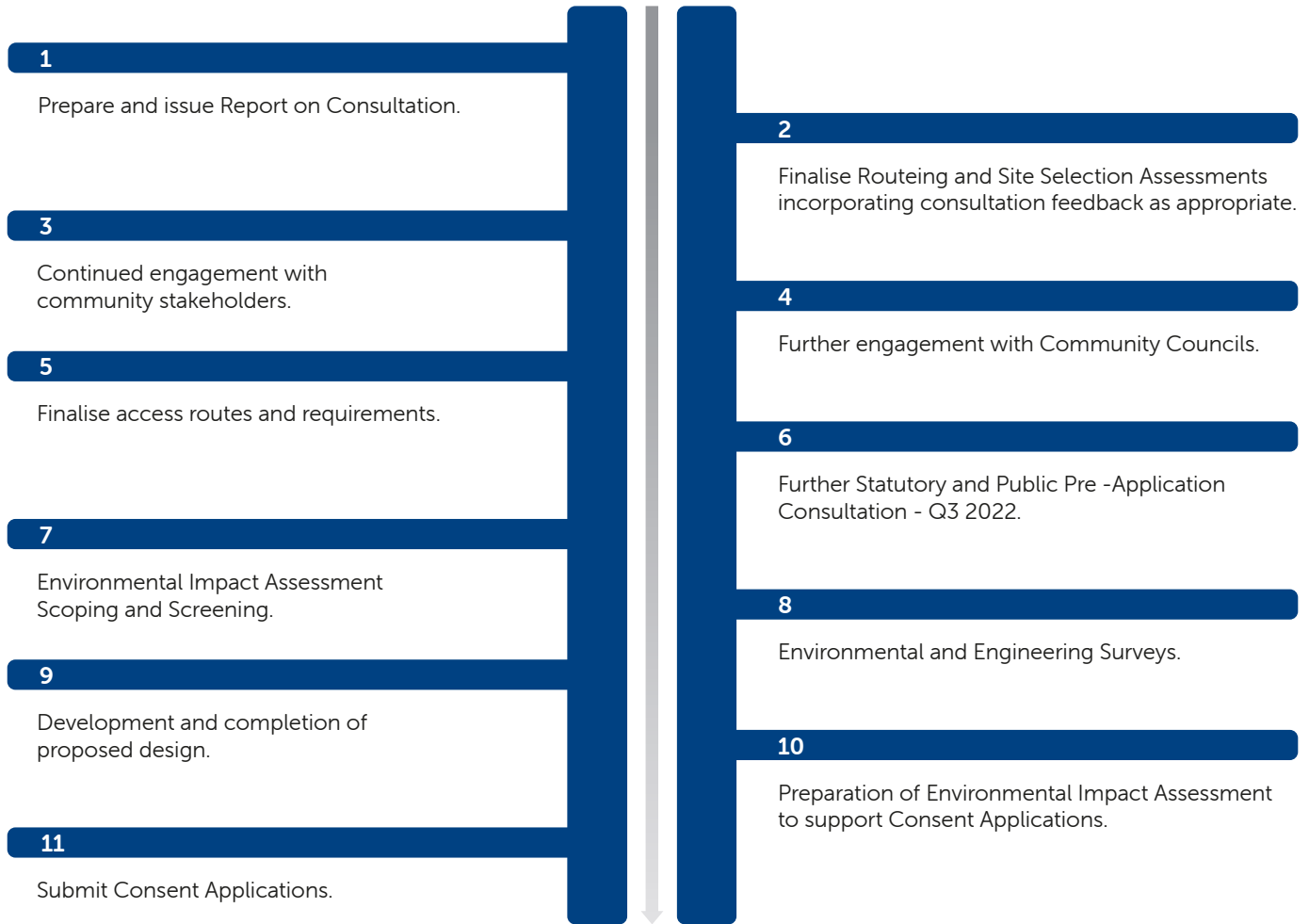


Legend

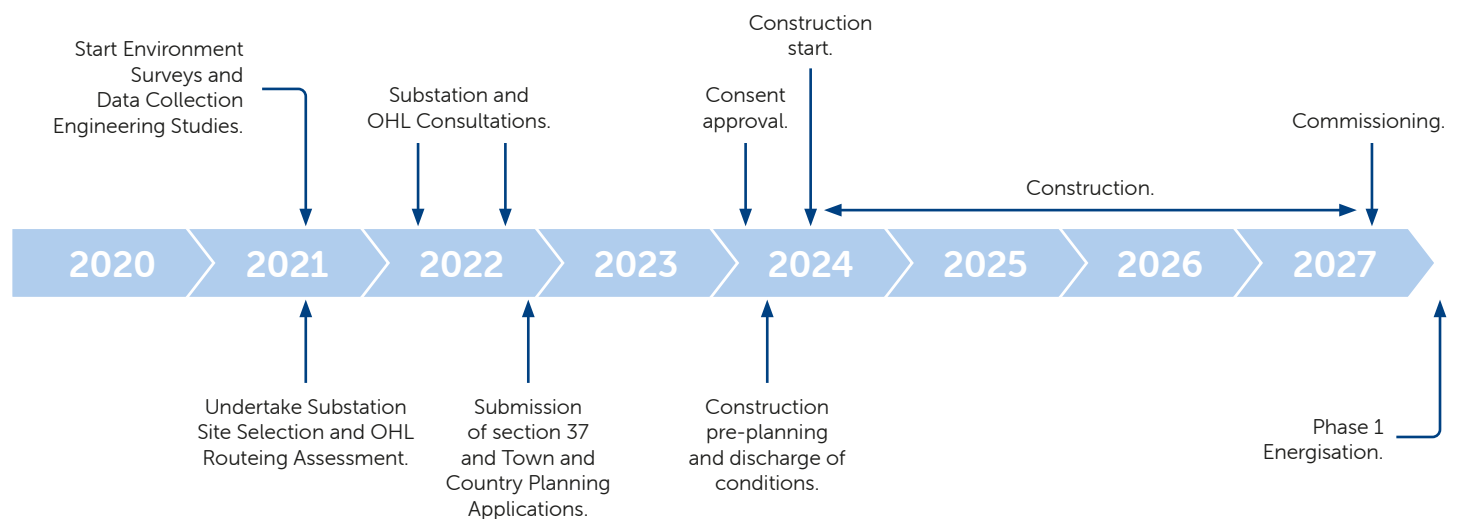
- Preferred Route - Coire Glas to Loch Lundie
- Preferred Route - Loch Lundie to Fort Augustus
- Existing Fort Augustus Substation
- Loch Lundie 400kV Preferred Substation Site
- Coire Glas 400kV Switching Station
- Preferred Alignment Coire Glas to Loch Lundie
- Preferred Alignment Loch Lundie to Fort Augustus

Timeline and Next Steps

Timeline



Next Steps - High Level Programme



How do I have my say?

We understand and recognise the value of the feedback provided by members of the public during all engagements, consultations and events. Without this valuable feedback, the Project Development team would be unable to progress projects and reach a balanced proposal.

We are keen to receive your views and comments with regards to the following questions:

- Has the requirement for the project been clearly explained?
- Are you satisfied with the proposed site locations for the switching station and substation?
- Based on the information shared at consultation are you satisfied with our approach taken to select the preferred routes and alignments?
- Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?

Comments

Your views and comments can be provided to the project team by completing the feedback form in this booklet or via the project webpage or by writing to our Community Liaison Manager.

We will be seeking feedback from members of the public and stakeholders until **1700hrs Monday 20th June 2022**.

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

Community Liaison Manager, Sally Cooper



sally.cooper@sse.com



07918 470281



Sally Cooper
Scottish and Southern
Electricity Networks,
10 Henderson Road,
Inverness, IV1 1SN



Additional information

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

Project website:

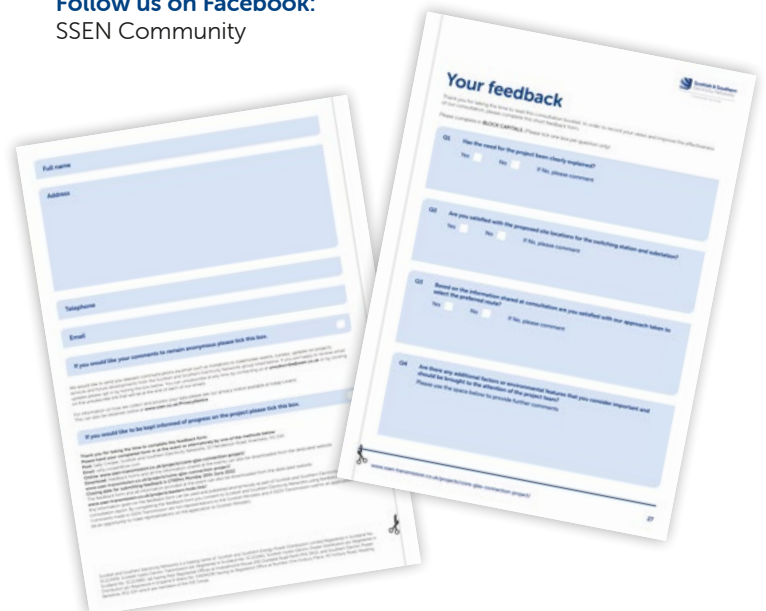
www.ssen-transmission.co.uk/projects/coire-glas-connection-project/

Follow us on Twitter:

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SSEN Community



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 project been clearly explained?

Yes No If No, please comment

Q2 Are you satisfied with the proposed site locations for the switching station and substation?

Yes No If No, please comment

Q3 Based on the information shared at consultation are you satisfied with our approach taken to select the preferred routes and alignments?

Yes No If No, please comment

Q4 Are there any additional factors or environmental features that you consider important and should be brought to the attention of the project team?

Please use the space below to provide further comments



Full name

Address

Telephone

Email

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

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at unsubscribe@ssen.co.uk or by clicking on the unsubscribe link that will be at the end of each of our emails.

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at www.ssen.co.uk/PrivacyNotice

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

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

Please hand your completed form in at the event or alternatively by one of the methods below:

Post: Sally Cooper, Scottish and Southern Electricity Networks, 10 Henderson Road, Inverness, IV1 1SN

Email: sally.cooper@sse.com

Online: www.ssen-transmission.co.uk/projects/coire-glas-connection-project/

Download: Feedback forms and all the information shared at the events can also be downloaded from the dedicated website. www.ssen-transmission.co.uk/projects/coire-glas-connection-project/

Closing date for submitting feedback is 1700hrs Monday 20th June 2022

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 the feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose. Comments made to SSEN Transmission are not representations to the Scottish Ministers and if SSEN Transmission submit an application there will be an opportunity to make representations on the application to Scottish Ministers.

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