



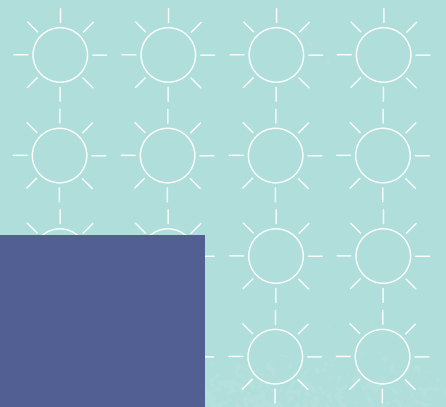
Scottish & Southern
Electricity Networks

TRANSMISSION

Glendye Wind Farm Overhead Line Connection

Route Options Consultation

February 2024



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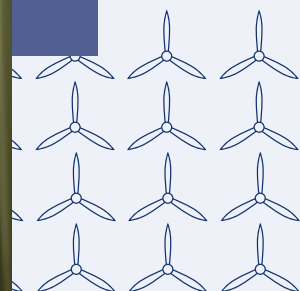
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The consultation events will be taking place on:

Tuesday 20 February - Strachan - Strachan Village Hall - 10am-12pm

Tuesday 20 February - Fettercairn - West Mearns Parish Church Hall - 2pm-7pm

Wednesday 21 February - Drumlithie - Public Hall - 2pm-7pm



Powering change together

The time has come to further enhance Scotland's energy infrastructure, providing power for future generations as we move towards net zero.

The shift to a cleaner, more sustainable future is about more than climate change. It's about ensuring future generations have the same opportunities to thrive as we have all had.

Countries around the world are investing in their energy infrastructure to support the demands of modern economies and meet net zero targets. The UK is leading the way in building a modern, sustainable energy system for the future.

We all have a part to play

When it comes to net zero, we have to be in it together. The UK and Scottish governments have ambitious net zero targets, and we're playing our part in meeting them.

We work closely with the National Grid to connect vast renewable energy resources – harnessed by solar, wind, hydro and marine generation – to areas of demand across the country. Scotland is playing a big role in meeting this demand, exporting two thirds of power generated in our network.

But there's more to be done.

By 2050, the north of Scotland is expected to need 40GW of renewable energy capacity to help deliver net zero. Today, our region has just 8GW of renewable generation connected to the network.

At SSEN Transmission, it is our role to build the energy system of the future. We're investing £20 billion into our region's energy infrastructure, powering more than ten million UK homes and 20,000 jobs, 9,000 of which will be here in Scotland.



Find out more

Scan the QR code with your smartphone to find out more about how these policies have been assessed and determined.

Who we are

We're responsible for maintaining and investing in the electricity transmission network in the north of Scotland. We're part of SSE plc, one of the world's leading energy companies with a rich heritage in Scotland that dates back more than 80 years. We are also closely regulated by the GB energy regulator Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network.

What we do

We move electricity all over the UK. We manage the electricity network across over a quarter of the UK's land mass, crossing some of the country's most challenging terrain. We connect renewable energy sources to our network in the north of Scotland and then transport it to where it needs to be. From underground subsea cables and overhead lines (OHL) to electricity substations, our network keeps your lights on all year round.

Working with you

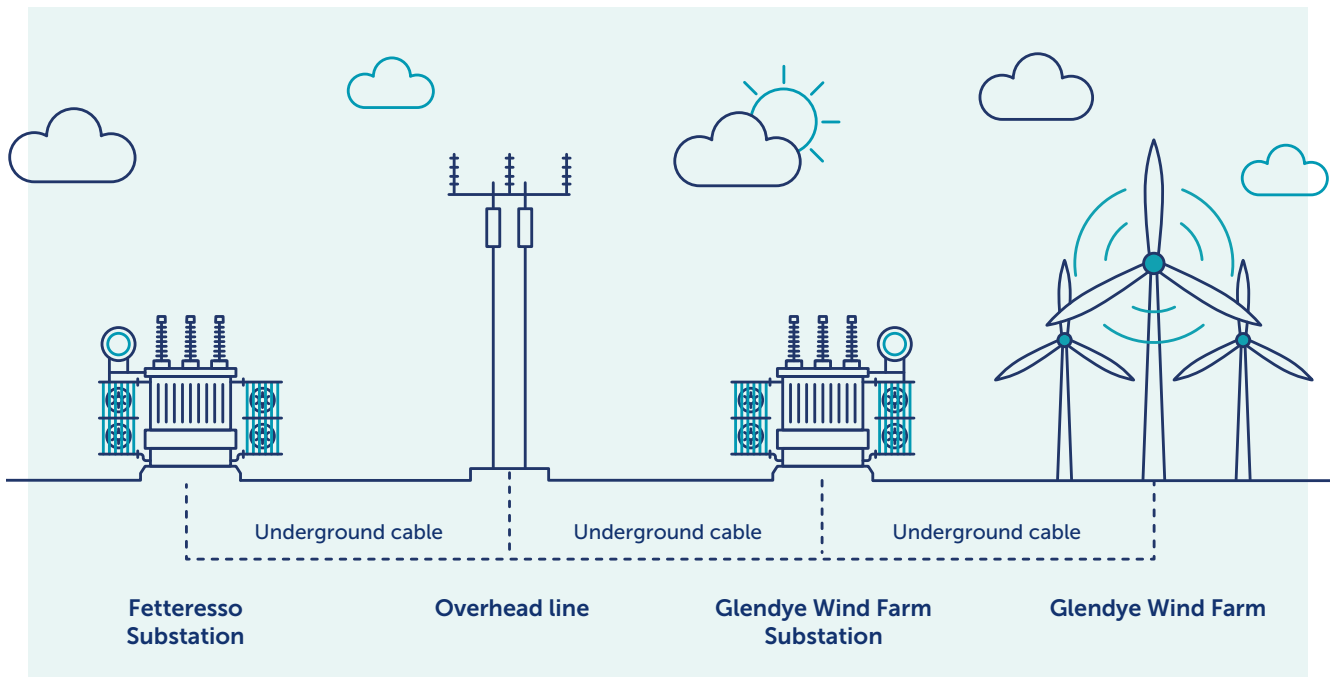
We understand that the work we do can be disruptive to communities. So we're committed to keeping that disruption to a minimum and maximising all the benefits that local development can bring to your area.

We're regularly assessed by global sustainability consultancy AccountAbility for how we engage with communities. That means we provide all the information you need to know about our plans and how they will impact communities like yours. The way we consult is also a two-way street. We want to hear people's views, concerns, or ideas and harness local knowledge so that our work benefits their communities: today and long into the future. You can share your views with us at: ssen-transmission.co.uk/talk-to-us/contact-us



Project overview

As the transmission licence holder in the north of Scotland, we have a duty under Section 9 of the Electricity Act 1989 to facilitate competition in the generation and supply of electricity. We have obligations to offer non-discriminatory terms for connection to the transmission system, both for new generation and for new sources of electricity demand.



The Glendye Wind Farm has received Section 36 consent and we are required to connect the development to the transmission network. To facilitate this, we are proposing to construct a new 132kV OHL from the substation at the wind farm approximately 8km North West of Fettercairn, to the existing Fetteresso substation. Under our Network Operator’s Licence this connection should be efficient, coordinated and economic, whilst having the least possible impact on the environment.

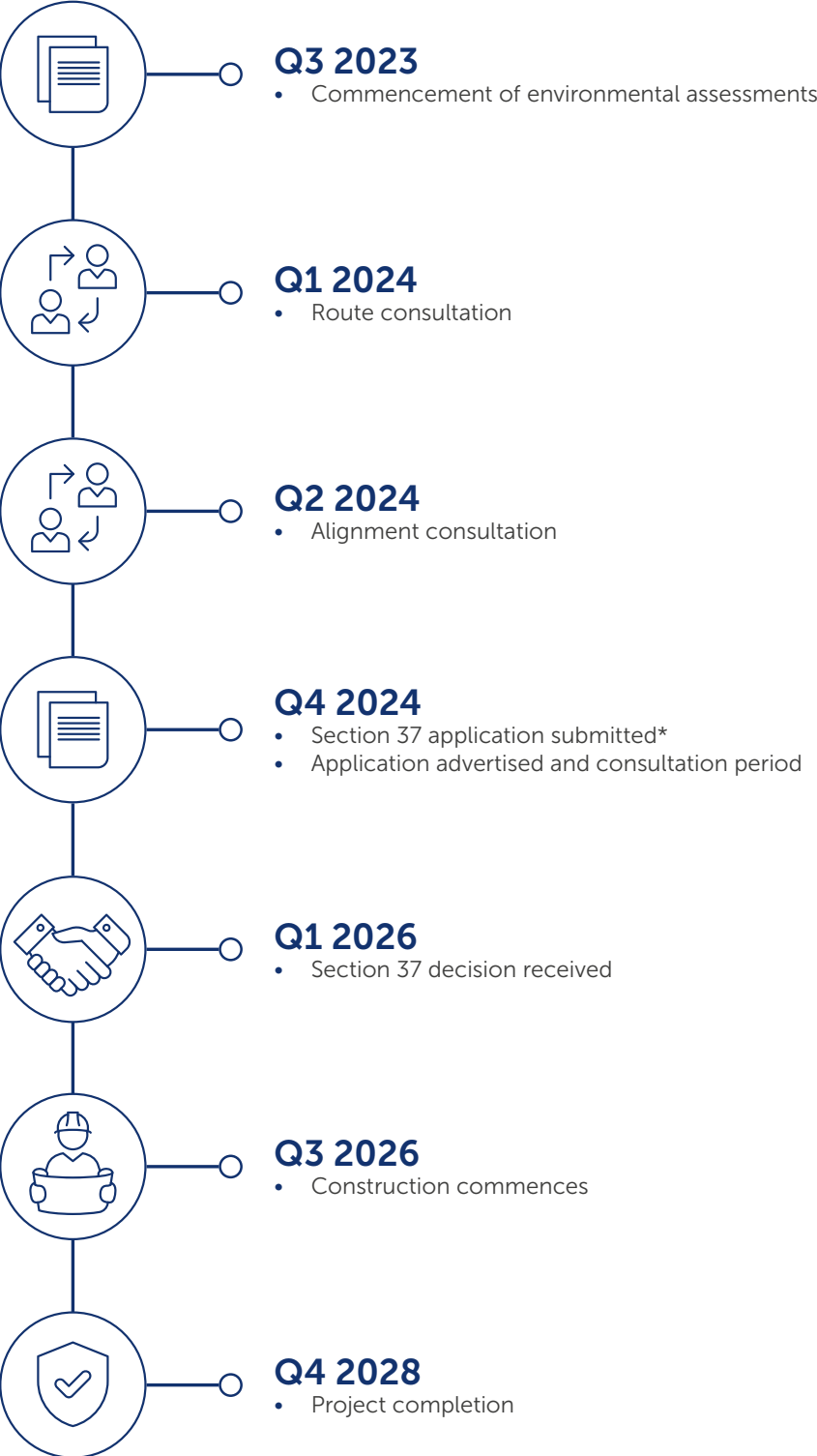
The proposal is a single circuit 132kV steel trident pole arrangement, as shown in the image, supporting the OHL running over a distance of approximately 20 kilometers in length. Sections of 132kV underground cable (UGC) will be required at either end of the OHL, of approximately 750 meters in total. A number of new permanent and temporary access tracks will also be required.

The average height of the trident pole is 13 meters, with an average span of approximately 100 meters.



Project timeline

The figure below identifies key milestones for consenting and construction programmes.



*Section 37 consent for the OHL is required under the Electricity Act 1989. The application is determined by Scottish Ministers

Our overhead line routeing and design 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 our 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 that 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 a number of stages, each iterative and increasing in detail and resolution, bringing cost, technical and environmental considerations together in a way that seeks the best balance. This staged process leads to the identification of a proposed OHL alignment that is capable of being granted consent by Scottish Ministers under Section 37 of the Electricity Act 1989. The key stages are:

Corridor selection

No corridor options were identified due to the limited scale of the project and the identified connection points between the wind farm and the existing Fetteresso substation, which limit the alternative corridor options.

We are at this stage

Route selection

Route selection seeks to identify route options that avoid where possible physical, environmental, and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable taking into account factors such as altitude, slope, ground conditions and access. A route may be several kilometers in length and typically 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, assessed and consulted on.

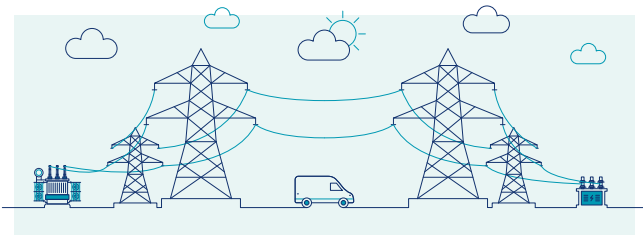
What happens next

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.

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.



Meeting our obligations

Our Transmission Operators licence requires us to provide the best value for customers and Great Britain (GB) consumers.

As a natural monopoly, SSEN Transmission are closely regulated by the GB energy regulator Office of Gas and Electricity Markets (OFGEM), which determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network. 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 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.

Initial work has been carried out during 2023 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 a proposed route and alignment for the connection, further detailed studies and assessment work will be undertaken to support the consenting process in 2024.

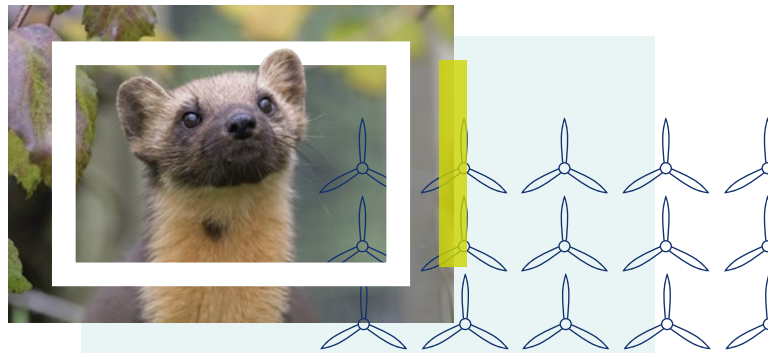
Consenting

Before a project progresses to consent application stage (under Section 37 of the Electricity Act 1989), a Screening Opinion is requested from the Scottish Ministers (through the Energy Consents Unit) to clarify whether the project falls within the thresholds of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

If the project meets or exceeds certain criteria, then it is deemed to be an EIA Development and any application for consent must be accompanied by a formal EIA Report.

If it is not an EIA Development, SSEN Transmission will provide equivalent environmental information through a voluntary Environmental Appraisal (EA) Report.

The Glendye Wind Farm Connection will be screened for EIA in Q2 of 2024.



Engineering and economic considerations

In addition to the suite of environmental assessments undertaken, the following engineering and economic considerations for a key part of our routing 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 and underground structures.
- Vicinity to any other utility, overhead or underground. Wind farms.
- Communications masts. Connections infrastructure. Urban development.
- Forestry and biodiversity costs. Technology costs and design parameters. Site accessibility.
- Route length.

A summary of key environmental and engineering considerations are presented on page 6.

Route options

Route options

We have identified five potential route options in total for the new OHL.

These are split into 3 'western route options' (1a, 1b and 1c) and 2 'eastern route options' (2a and 2b). Any of the western route options could join with any of the eastern route options through a central connection point, to form a complete connection between the proposed Glendye Wind Farm on-site substation and Fetteresso substation.

The route selection process is informed by SSEN Transmission's guidance for routeing which helps SSEN Transmission meet its obligations under Schedule 9 of the Electricity Act 1989, and aims to balance environmental, technical, and economic considerations throughout. The route options identified and appraised for this project are described below and shown on the following page.

Route option 1a

This route option is approximately 13km in length. It would leave Glendye Wind Farm on-site substation in a north easterly direction through Glen Dye for approximately 5km before passing over the B974.

It then continues in an easterly direction for approximately 8km through Drumtochty forest before joining an eastern route option.

Route option 1b

This route option is approximately 9km in length. It would leave Glendye Wind Farm on-site substation in an easterly direction, over open moorland and rolling hills, before reaching the B974.

From here the route would continue east across a mix of open moorland and forestry within the vicinity of Goyle Hill before joining an eastern route option.

Route option 1c

This route option is approximately 12km in length. It would leave Glendye Wind Farm on-site substation in an easterly direction over open moorland and steep terrain, towards the B974. After crossing the B974 the route option continues over steep ground before heading northeast through Drumtochty forest before joining an eastern route option.

Route option 2a

This route option is approximately 8km in length and heads in a north easterly direction through steep terrain in Drumtochty and Fetteresso forests, and areas of open moorland prior to terminating at Fetteresso substation.

Route option 2b

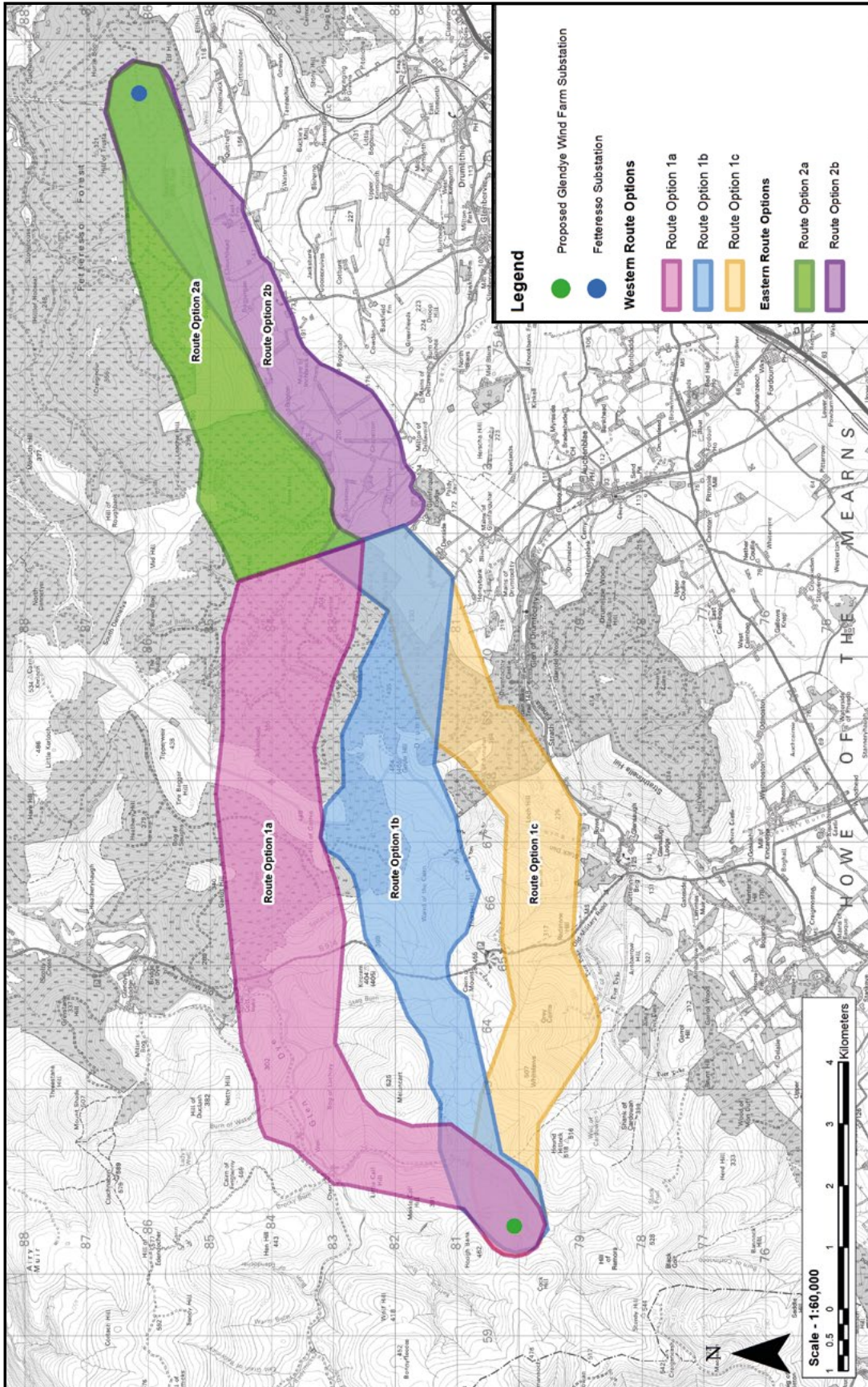
This route option is approximately 8km in length and heads in a north easterly direction over predominantly lowland farmland, comprising arable fields and areas used for pasture. A small number of properties and farm buildings are present within or within close proximity to the route. The route would overlap with route option 2a as it approaches the forestry prior to terminating at Fetteresso substation.

Potential Engineering Risks

- There is some steep terrain in some locations in the west, particularly in route option 1c. option 2b has a lower altitude and has fewer steep slopes however proximity to dwellings, buildings and wind turbines is a consideration.
- Peat is present in all westerly route options and will require further survey and consideration in design.
- Access is a consideration for all routes with route option 1a having the most existing access points.

Potential Environmental Risks

- River Dee Special Area of Conservation (SAC) is located partly within route option 1a, and other designated sites are present within the wider area.
- There are areas of ancient woodland present, primarily of plantation origin. Route options 1a and 2a pass through the greatest extent. Smaller pockets of native woodland are also present throughout the area. All areas of woodland will provide suitable habitat for bats, red squirrel, pine marten and badger.
- The western route options include sensitive upland habitats and areas of peatland which are considered of high conservation value, although these habitats are often degraded. There are proposals, such as the Glen Dye Moor Restoration Project, to help restore these habitats and create woodland. There is some interaction with these plans and the western route options, particularly route option 1a.
- Settlement is typically sparse, particularly for western route options with very few properties within the vicinity of these routes. Of the eastern route options, there are a small number of properties and farm buildings within, and close to, route option 2b given this route option passes through an area of lowland farmland.
- Forestry is a common land use within the area, and all route options interact with forestry to some extent. Route options 1a and 2a have the greatest impact on forestry.



Other projects in the local area

As the transmission operator in the north of Scotland, we need to maintain and invest in the high voltage electricity transmission network in our area to provide a safe and reliable electricity supply to our communities.

We also need to offer terms for connections to the transmission network for new generation such as wind farms and pumped storage schemes and for new sources of electricity demand.

Therefore, as well as the Glendye Wind Farm Connection, we have a number of other projects within the local area we are currently developing, described below.

Kintore to Tealing 400kV connection

Based on the requirements outlined in National Grid Electricity System Operator (ESO) Pathway to 2030 Holistic Network Design we have developed proposals to reinforce the transmission system.

As part of this we are proposing to establish a new 400kV OHL between Kintore and Tealing.

This requires two new 400kV substations to be constructed to connect to this new OHL, one near Fetteresso Forest (Hurlie) and one near Tealing in Angus to enable required future connections and export routes to areas of demand.

Together, these three projects form part of East Coast 400kV Phase 2 projects.

This connection will be provided via an OHL of steel lattice towers (commonly referred to as pylons) likely to average around 57m in height.

The Kintore to Tealing 400kV Connection project is completely separate to the Glendye Wind Farm Connection we are consulting on today.

Alyth to Tealing and Tealing to Westfield OHL reconductoring

To support the increased capacity from the proposed Kintore – Tealing 400kV Connection, the export routes to areas of demand must be upgraded to 400kV. This means the existing Alyth – Tealing and Tealing – Westfield overhead lines, which currently operate at 275kV, need to be upgraded to operate at 400kV.

This is part of the East Coast 400kV Phase 2 projects, a scheme consisting of several onshore reinforcement projects on the east coast of Scotland.

Hurlie 400kV substation

Extensive studies have confirmed the need to reinforce the onshore transmission infrastructure between Kintore and Tealing. A new 400kV substation is therefore required in Fetteresso forest in close proximity to the existing Fetteresso substation which will be known as Hurlie 400kV substation.

This new 400kV substation will enable the connection of the new 400kV overhead line between Kintore and Tealing. This is part of the East Coast 400kV Phase 2 projects, a scheme consisting of several onshore reinforcement projects on the east coast of Scotland.

Construction of an overhead steel trident pole line

A typical steel “H” pole (average height of 13m) installation requires foundations of approximately 2.5m by 3m across and to a depth of around 2 metres. To minimise construction impact and the requirement for access tracks helicopters can be used to help deliver the materials to the site.

The picture opposite shows a typical helicopter delivery of the steel work used on the top of a pole and the baulk timbers used in the foundation at the base of each structure. Helicopters are also used to assist with the stringing of the conductors. Use of helicopters would only be decided by the delivery partner once they have assessed the access and terrain of the project.

Opposite is a typical example of an steel trident pole and OHL.

Construction of access tracks

Access tracks will only be constructed where access by all-terrain vehicles or the use of trackway is not feasible.

Access tracks will be constructed with imported and/or locally sourced material.

Access tracks are not usually retained after construction of the OHL, however, in some cases they may be retained.



Helicopter delivery of the materials



Example of a steel trident pole



Construction of access tracks

Have your say

We value community and stakeholder feedback. Without this, we would be unable to progress projects and reach a balanced proposal.

The feedback period

We will accept feedback from now until 20 March 2024.

How to provide feedback

Submit your feedback online by scanning the QR code on this page or via the form on our project webpage at: ssen-transmission.co.uk/glendye

Email the feedback form to our Community Liaison Manager. Or write to us enclosing the feedback form at the back of this booklet.

What we're seeking views on

We encourage all interested community members to fill in a feedback form when submitting feedback, however if you prefer, you can email us to provide your feedback or ask any questions.

We are keen to receive your views and comments in regards to the questions on the following pages.



To support everyone online, we provide accessibility and language options on our website through 'Recite Me'.

The accessibility and language support options provided by 'Recite Me' include text-to-speech functionality, fully customisable styling features, reading aids, and a translation tool with over 100 languages, including 35 text-to-speech.

Please select "Accessibility" on our website to try out our inclusive toolbar.

Our Community Liaison Team

Each project has a dedicated Community Liaison Manager who works closely with community members to make sure they are well informed of our proposals and that their views, concerns, questions or suggestions are put to our project teams.

Throughout the life of our projects, you will hear from us regularly. We aim to establish strong working relationships by being accessible to key local stakeholders such as community councils, residents' associations and development trusts, and regularly engage with interested individuals.

Community Liaison Manager

Rob Whytock
Community Liaison Manager

SSEN Transmission
200 Dunkeld Road,
Perth, PH1 3GH

T: 07721 404576
E: rob.whytock@sse.com



Additional information

The best way to keep up to date is to sign up to project updates via the project webpage: ssen-transmission.co.uk/glendye

You can also follow us on social media

 [SSEN-Transmission](#)

 [SSETransmission](#)



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 requirement for the project been clearly explained?

Yes No Unsure

Comments:

Q2. Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?

Yes No Unsure

Comments:

Q3. Do you have any comments about any of the route options?

Yes No Unsure

Comments:

Q4. Following a review of the provided information, how would you describe your understanding of the Glendye Wind Farm Connection Project?

Yes No Unsure

Comments:

Q5. Do you have any community benefit opportunities you would like us to consider, or are there any local initiatives you would like us to support?

Yes No Unsure

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 submit your completed form by one of the methods below:

Post: Scottish and Southern Electricity Networks, 200 Dunkeld Road, Perth, PH1 3GH

Email: rob.whytock@sse.com

Online: ssen-transmission.co.uk/glendye

Download: Comments forms and all the information from today's event will also be available to download from the project website.

The feedback form and all information provided in this booklet can also be downloaded from the dedicated website:

ssen-transmission.co.uk/glendye

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

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