



Scottish & Southern
Electricity Networks

TRANSMISSION

Abhainn Dubh Wind Farm Connection

Public consultation

3 September 2024



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The consultation event will be taking place on:

3 September 2024, 3–7pm
 Evanton Jubilee Hall, Hermitage Street,
 Evanton IV16 9YG



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 Electricity System Operator 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 predicted to contribute over 50GW of low carbon energy to help deliver net zero. Today, our region has around 9GW 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 this decade, powering more than ten million UK homes and 20,000 jobs, 9,000 of which will be here in Scotland.

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 manage the electricity network across our region which covers 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 and subsea cables and overhead lines to electricity substations, our network keeps your lights on all year round.

Working with you

We understand that the work we do can have an impact on our host communities and we are committed to minimising our impacts and maximising all the benefits that our developments 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, and 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/



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

Project need and overview

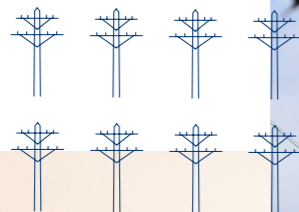
As the transmission license holder in the north of Scotland, we have a duty under Section 9 of the Electricity Act 1989 to facilitate competition in the generation and supply of electricity. We have obligations to offer non-discriminatory terms for connection to the transmission system, both new generation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

Subject to planning consent, SSEN Transmission are required to connect the Abhainn Dubh Wind Farm to the transmission network. To facilitate this, we are proposing to construct a new single circuit 132kV (1km of underground cable and 8.4km of overhead line) from the connection site to a new double busbar line bay on the Fyrish 132kV busbars. Under Network Operators License, this connection should be efficient, coordinated and economic, whilst having the least possible impact on the environment.

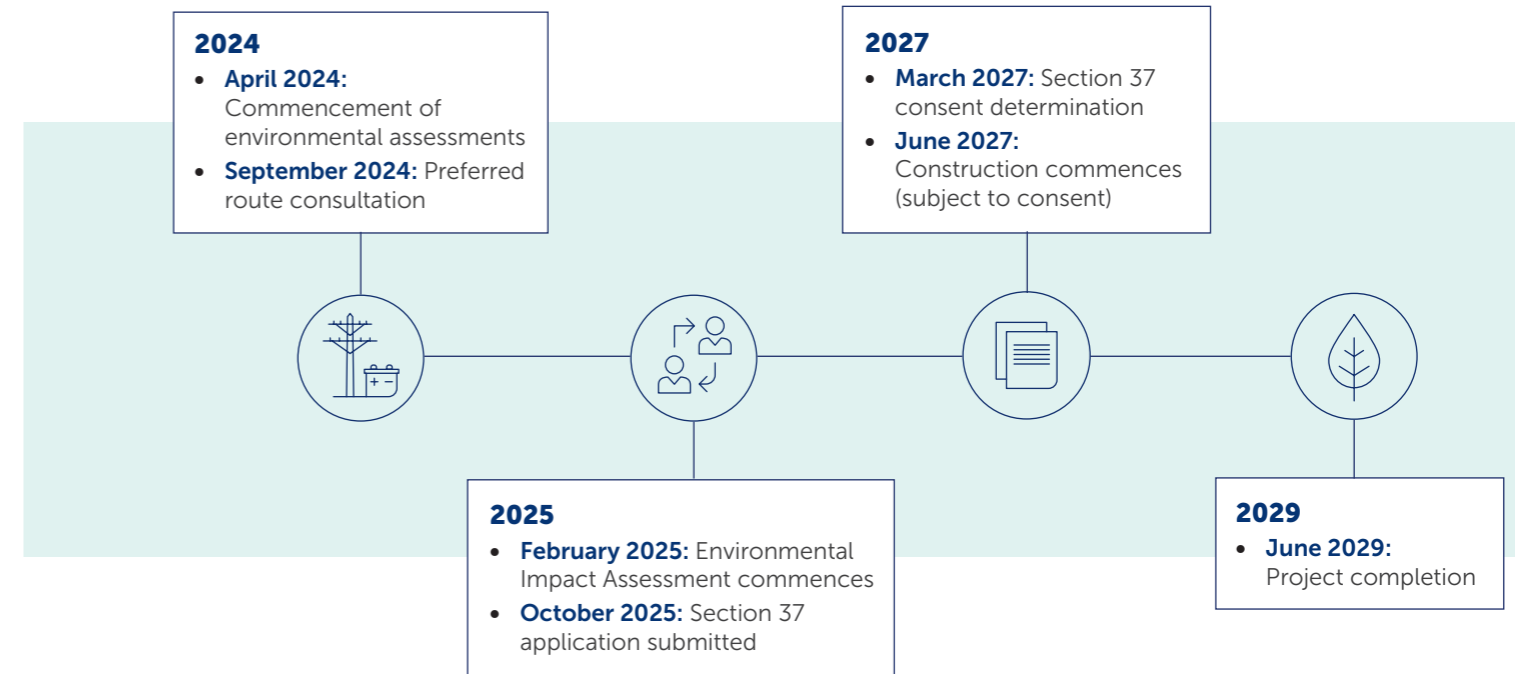
The average height of the trident poles is 10 to 18m, with an average span of between 75–100 meters.

At times during construction traffic management will be required, consultation will be undertaken on this in due course.

The proposal is a single circuit 132kV trident wood "H" pole arrangement supporting the overhead line running over a distance of approximately 8.4km in length between the existing Fyrish Substation and the Abhainn Dubh Wind Farm substation.



Project timeline



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 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 within the connection Corridor.

This work has been carried out during 2024 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 preferred route and alignment, further detailed studies and assessment work will be undertaken to support the consenting process in 2025–2027.

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 EIA Development, SSEN Transmission will provide equivalent environmental information through a voluntary Environmental Appraisal (EA) Report.



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 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.
- 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.

Help shape our plans

The work we have planned is significant and has the potential to deliver massive benefits in your community, Scotland, and beyond. Yet we know that achieving our goals will require a lot of work that will impact your lives. That's why we want to work with you every step of the way throughout the planning and delivery stages of these essential and ambitious works.

We're committed to delivering a meaningful consultation process that actively seeks the views of everyone affected by our plans. That means making our plans clear and easily accessible, so that you can give us input throughout each stage of the development process.

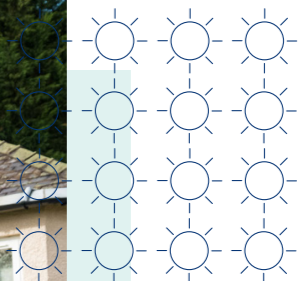
Throughout the consultation, we'll present our approach to developing the project, including changes made since we last consulted with you. We will also provide some visualisations and maps to show you where everything will be located.

We want you to share your thoughts and opinions on our plans, where you think we can make improvements, concerns about the impact of our work and what you think of any changes and refinements we've made. By telling us what you think, you will help shape our proposals. We want to harness your local knowledge so that we spot any unforeseen challenges early and maximise the potential benefits and opportunities for your communities.

Because, ultimately, we want you to work with us to ensure that the energy infrastructure we build will be the best it can possibly be.

Who we're consulting with

As well as communities, we are keen to hear feedback from a broad range of other stakeholders including but not limited to landowners, businesses, non-statutory consultees and statutory consultees such as local authorities, NatureScot, Scottish Environment Protection Agency (SEPA), Historic Environment Scotland (HES) and Forestry and Land Scotland (FLS).



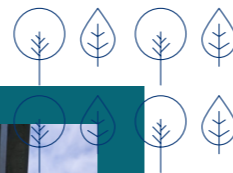
Our overhead line routeing and design process

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 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 kilometers in width, depending on the scale and length of the project. For this project, and for wind farm connections in general, the Corridor stage is omitted as the location of the wind farm and point of connection on the network naturally define a Corridor of a few kilometers in width. Routeing a new OHL any further afield than this would be too expensive and add unnecessary infrastructure to the landscape.

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 optimal 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 current status of the connection is Route selection (Stage 3). Following stakeholder engagement with the public, statutory bodies and landowners, this will be finalised as a Preferred route taken forward to Alignment selection (Stage 4) for formal environmental assessment and consent application.

Routeing stage: key environmental constraints

Constraints between the Abhainn Dubh wind farm substation and the Fyrish substation include local settlements such as Evanton and Alness. In addition, there are a number of designated sites, including Novar Special Protection Area (SPA), Cromarty Firth Site of Special Scientific Interest (SSSI), SPA, Ramsar Site, Allt nan Caorach SSSI, as well as Novar and Ardross Castle Garden and Designed Landscapes. The terrain in the corridor is a mix of moderate hills with some steep slopes, and then areas with more gradual undulated terrain.

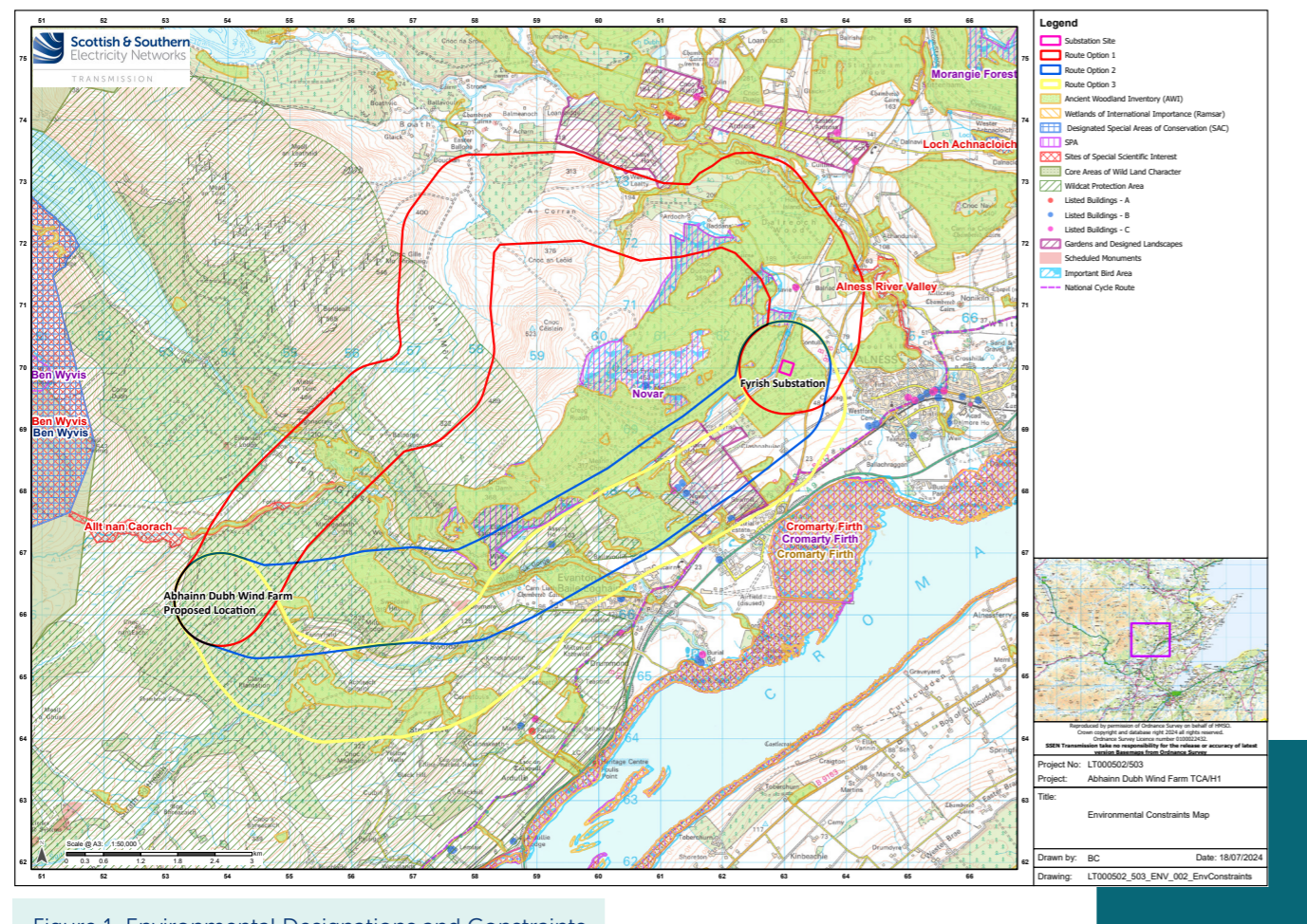


Figure 1. Environmental Designations and Constraints

This figure shows some of the key environmental constraints which have been considered when assessing potential OHL routes.

When assessing potential OHL routeing, consideration has been given to minimising potential impacts on all of the habitats, including ancient woodland, riparian vegetation.

Routeing stage: RAG Rating

SSEN Transmission identified three route options based on initial desk-based review and site visits within the area of search. Table 1 displays the environmental and engineering appraisal RAG ratings for the route options considered.

Category	Sub-topic	Route options			
		1	2	3	
Environmental	Natural heritage	Designations	H	H	H
		Protected Species	L	L	L
		Habitats	H	H	H
		Ornithology	H	H	H
		Geology, Hydrology, and Hydrogeology	M	M	M
	People	Proximity to People	L	M	M
	Cultural heritage	Designations	H	H	H
		Cultural Heritage Assets	H	L	M
	Landscape and visual	Designations	H	H	H
		Character	M	M	M
		Visual	M	M	M
	Land use	Agriculture	L	M	M
		Forestry	H	H	H
		Recreation	M	M	M
	Planning	Policy	M	M	M
Planning		M	M	M	
Engineering	Connectivity	Existing circuits/networks	H	H	H
		Future Development Possibilities	M	M	M
		Interface with SSE Distribution and Generation	H	M	H
	Hazards	DNO Connection	H	M	H
		Existing Utilities	M	H	H
	Ground conditions	Terrain	M	M	M
		Peatland	H	L	L
	Environmental conditions	Elevation	H	M	L
		Atmospheric Pollution	M	M	M
		Flooding	H	H	H
Contaminated Land		L	L	L	
Operation and maintenance	Access	M	M	M	

Routeing stage: outcome

Abhainn Dubh Wind Farm Connection - preferred route

The Routeing assessment concluded that Route Option 2 is the preferred route, which SSEN Transmission believes offers the best balance of technical and environmental impact considerations identified through initial assessment. This is then subject to consultation with stakeholders, where local and previously unknown considerations may confirm or alter the initial preference. Once confirmed, this becomes the Proposed Option to take forward to the next stage of project development.

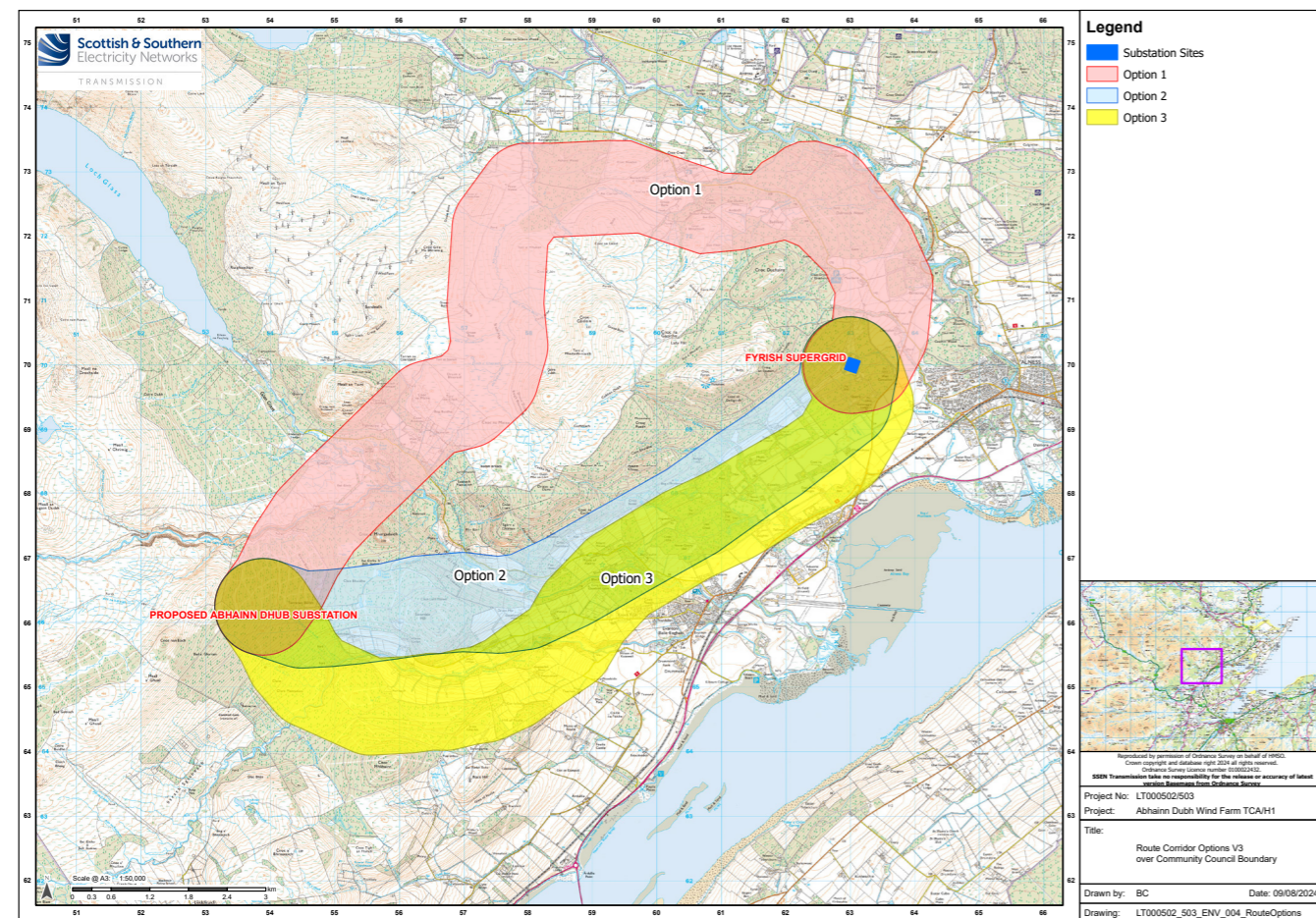


Figure 2. Abhainn Dubh Grid Connection – Proposed routes

Route Option 2 would require the careful placement of poles and underground cable corridor, particularly in relation to targeting the avoidance of sensitive habitats, such as ancient woodland and priority peatland.

The alignment selection would also require the application of further mitigation, at both construction and operational stages, to avoid and reduce potential effects on the environmental receptors.

Construction of an overhead wood pole line

A typical “H” wood pole 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 are used wherever possible 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.

Opposite is a typical example of an angle wood pole which requires additional stays. Note that stays are not usually required on non-angle poles unless ground or weather conditions dictate.

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 overhead line. Permanent access may be required to terminal structures where an OHL meets a cable section.



Underground cables

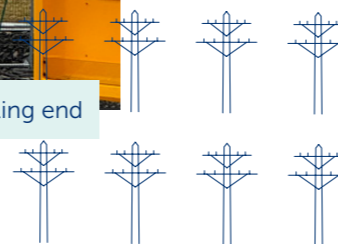
- A segment of the route, approximately 0.5 kilometres (km) on both ends of the transmission lines, will be cabled.
- The transition from the cables to the overhead line will be managed through a 5-pole cable-sealing end.
- The short cable at the wind farm keeps the overhead lines away from the turbine's wake area.
- The cable tie-in at the Fyrish substation is designed to reduce congestion and ensure adequate clearance from other circuits terminating at the substation
- Installation of the cables would normally be open cut trenching via excavator.



5-Pole Cable Sealing end



Typical 132kV cable trench arrangement



Next steps

All feedback/comments on the route selection process are requested by Friday 4 October 2024.

Following consultation events and a review of consultation responses, a Report on Consultation will be produced which will document the feedback/comments received, and the decisions made in light of these responses to inform the selection of a proposed route.

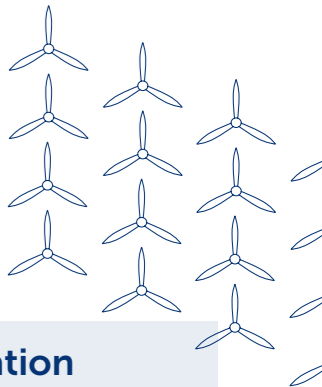
Following the identification and confirmation of a proposed route, the route will be taken forward into Stage 4: Alignment Selection, followed by the submission of a Section 37 application.

However, should further site and desk-based analysis at the EA/EIA and Consenting stage identify a particular constraint, a further review of the proposed alignments may be required.

Further consultation

As designs progress for Abhainn Dubh Wind Farm Connection, we will undertake further consultation in 2025 to present our alignment options for your consideration and feedback.

This will also provide an opportunity for us to present the results of any feedback from this event that we have been able to accommodate into our designs.



Have your say

We understand and recognise the value of feedback provided by the community and stakeholders. Without this valuable feedback, we would be unable to progress projects and reach a balanced proposal.

The feedback period

We will accept feedback from now until **4 October 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.
- Email the feedback form to the Community Liaison Manager, or write to us enclosing the feedback form at the back of this booklet.

What we're seeking views on

We want to know your thoughts on the routes under consideration. We'll be actively looking to mitigate the impacts of the project as much as possible over the coming months, but it would be helpful to understand what you believe we should be doing to help minimise these impacts and if there are any opportunities to deliver a local community benefit you would like us to consider.

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.

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.



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."

Community Liaison Manager

Lisa Marchi-Grey

SSEN Transmission 10 Henderson Road, Inverness, IV1 1SN

lisa.marchi@sse.com

+44 7825 015 507

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/projects/project-map/abhainn-dubh-wind-farm-connection

You can also follow us on social media:

@ssentransmission @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. Have we adequately explained the need for the connection of Abhainn Dubh Wind Farm?

Yes No Unsure

Comments:

Q2. Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?

Yes No Unsure

Comments:

Q3. 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:



Q4. Do you have any other comments about the preferred route?

Comments:

Q5. Following a review of the provided information, how would you describe your understanding of the Abhainn Dubh Wind Farm Connection project?

Comments:

Q6. Do you have any particular concerns or queries on the proposed connection from Abhainn Dubh Wind Farm Substation to Fyrish Substation?

Comments:

Full name: **Email:**

Telephone: **Address:**

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 stakeholder.admin@sse.com or by clicking on the unsubscribe link that will be at the end of each of our emails.

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 Hydro Electric Transmission, 10 Henderson Road, Inverness IV1 1SN

Email: lisa.marchi@sse.com

Online: ssen-transmission.co.uk/projects/project-map/abhainn-dubh-wind-farm-connection

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: ssen-transmission.co.uk/privacy

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

We intend to use Artificial Intelligence (AI) to assist our experienced teams in the analysis of your feedback, so we can categorise key points raised more quickly. You can learn more about how we're utilising AI at: ssen-transmission.co.uk/AIFAQ

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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Notes

