

Achany Wind Farm Extension Connection Project

November 2022



Scottish & Southern
Electricity Networks

TRANSMISSION

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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.



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

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.

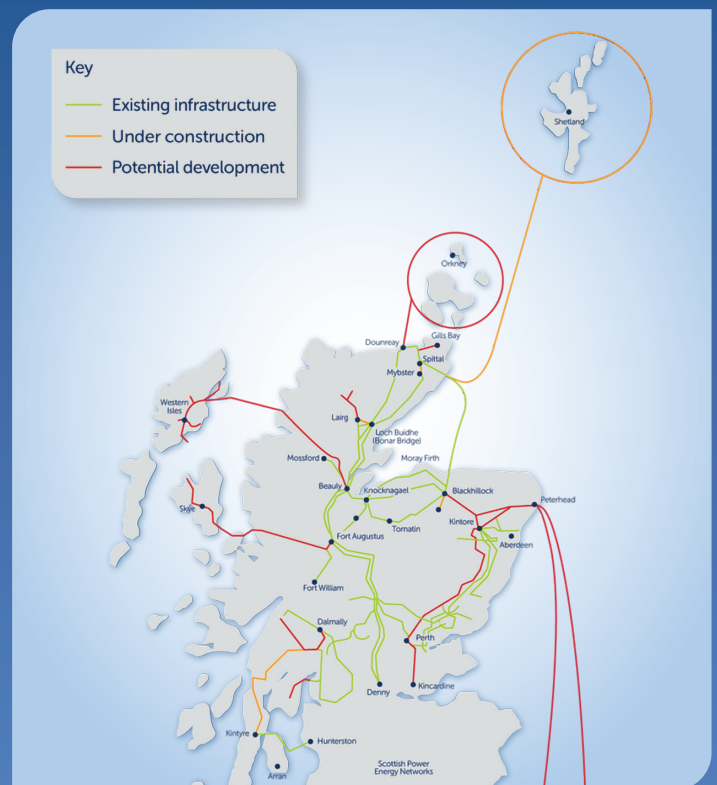
Our network crosses some of the UK’s most challenging terrain – including circuits that are buried under the seabed, are located over 750m above sea level and up to 250km long.

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

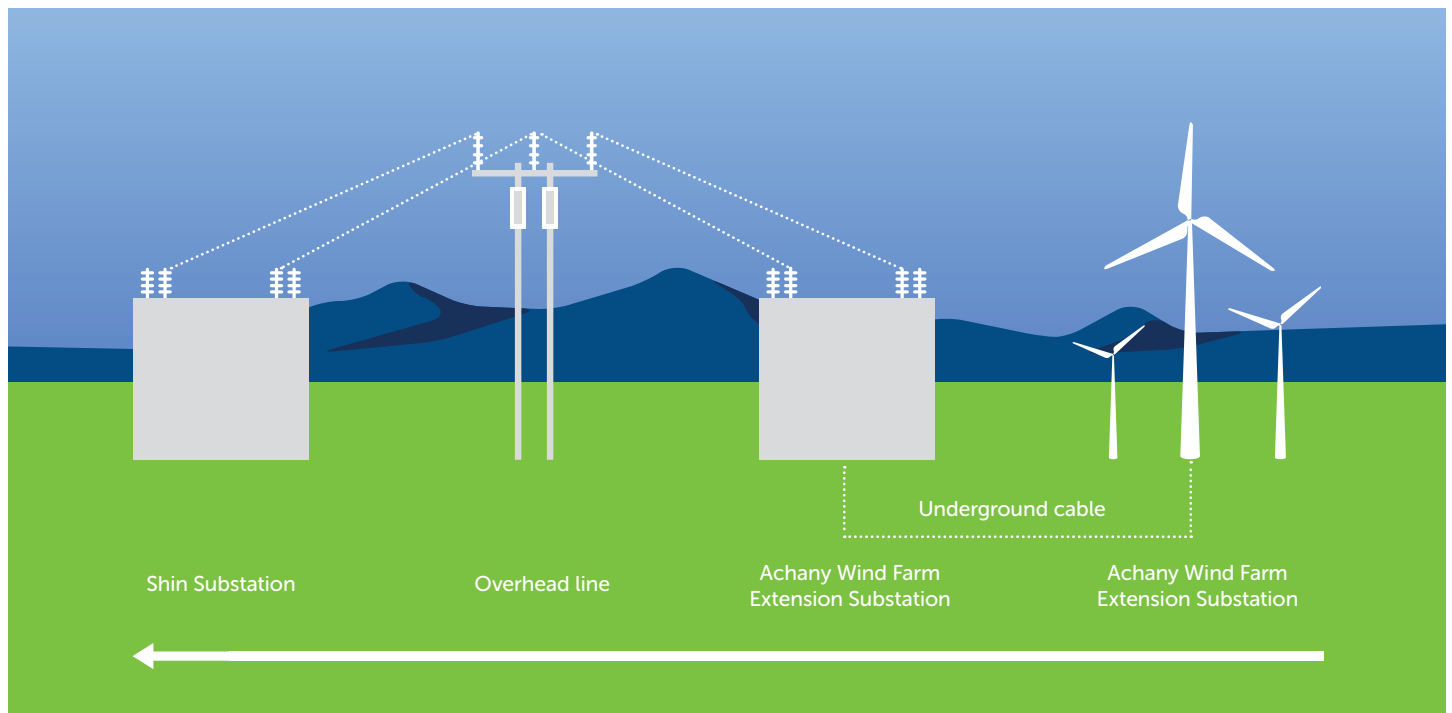
We have a licence for the transmission of electricity in the north of Scotland and we are closely regulated by the energy regulator Ofgem.

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



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 for new generation and for new sources of electricity demand.



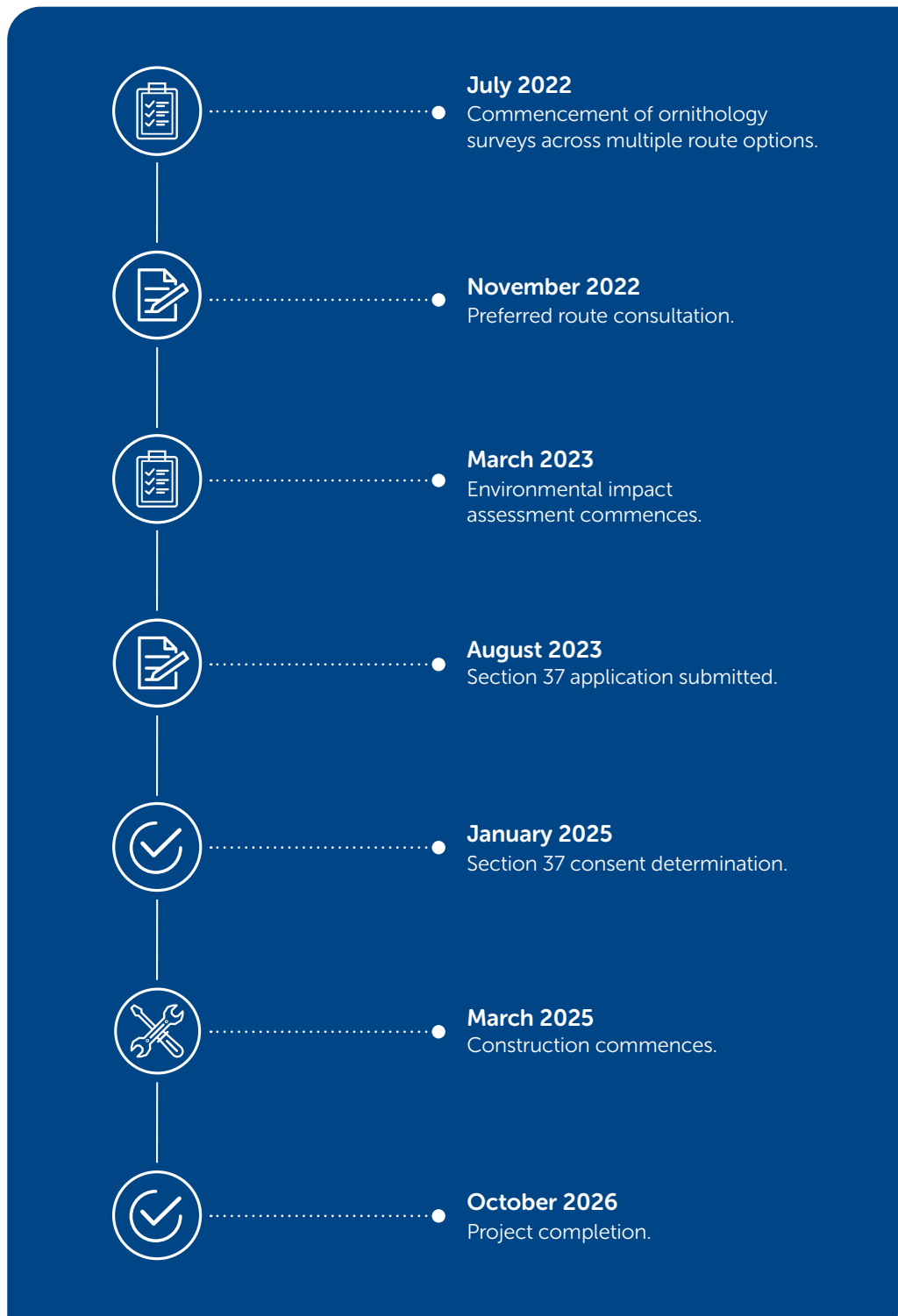
Subject to planning consent we are required to connect the Achany windfarm extension to the transmission network, to facilitate this we are proposing to construct a new 132kV overhead line on the connection route taken forward. Under our Network Operators License this connection should be efficient, coordinated, and economic, whilst having the least possible impact on the environment.

The proposal is a single circuit 132kV trident wood "H" pole arrangement as shown in the image supporting the overhead line running over a distance of approximately 18km in length between the existing Shin Substation and the Achany Windfarm Extension Substation.

The average height of the trident poles is between 13 and 16 meters, up to 18 meters, with an average span of between 70 and 100 metres. Traffic management will be required during construction and consultation will be undertaken on this in due course.

Project timeline

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



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 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 four principal 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 overhead line alignment that 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. For Achany, the corridor stage is omitted as the location of the wind farm and point of connection on the network naturally define a corridor.

Stage 3: Route selection

Route selection seeks to find a route within the corridor that avoids 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 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. 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.

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.

This work has been carried out from May to October 2022 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 for the connection, further detailed studies and assessment work will be undertaken to support the consenting process from January to August 2023.

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. Achany will be screened for EIA in Q1 2023.

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:

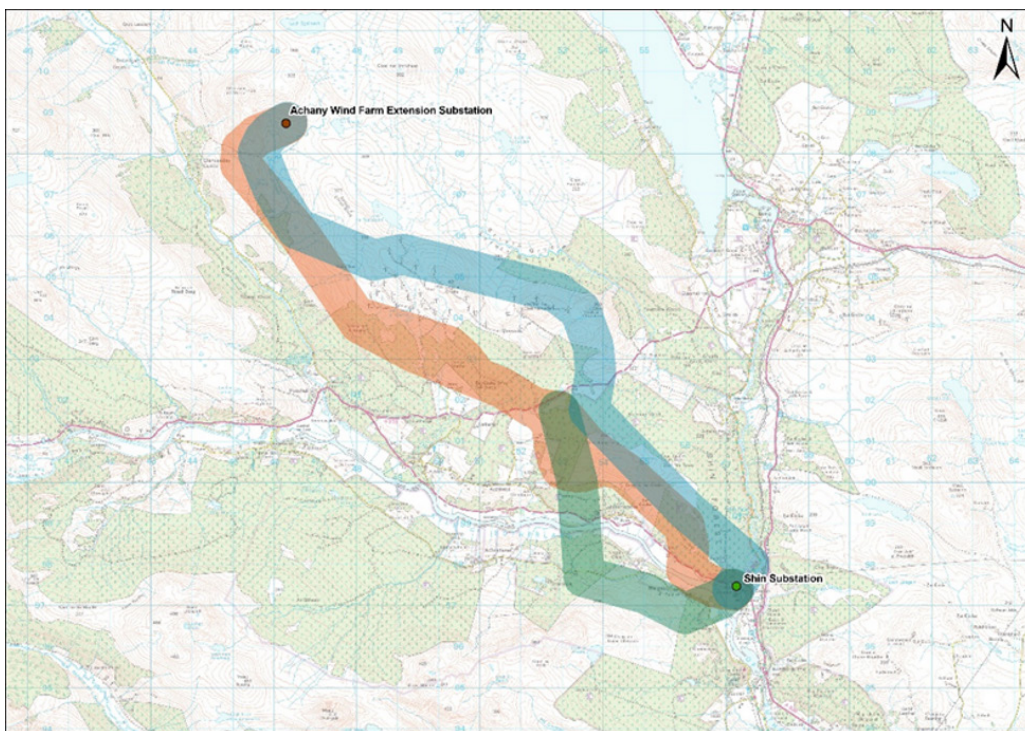
- Construction costs and buildability (largely affected by ground conditions, such as peat/rock/flooding/contaminated land, etc).
- Operations and maintenance requirements.
- Outage requirements and network constraints.
- Vicinity to other electrical OH line and underground structures.
- Vicinity to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

Route options

The map below shows the three route options under consideration for the connection of Achany Wind Farm Extension substation to Shin substation.

Five potential route options were identified for detailed assessment following an initial desk-based review of potential constraints. Due to the proximity of the route options to one another, the overlap between the options, and the need to meet with SSEN Transmission’s convention of identifying 1km wide routes at the route selection stage, it was decided that the five route options would be consolidated into three potential routes.

However, within the three route options, route widths have in places been increased up to approximately 2km to increase the assessment area where there was some overlap with the original five route options or to navigate around specific constraints. More information on the routes is provided in each route option summary.



Most preferred



Least preferred

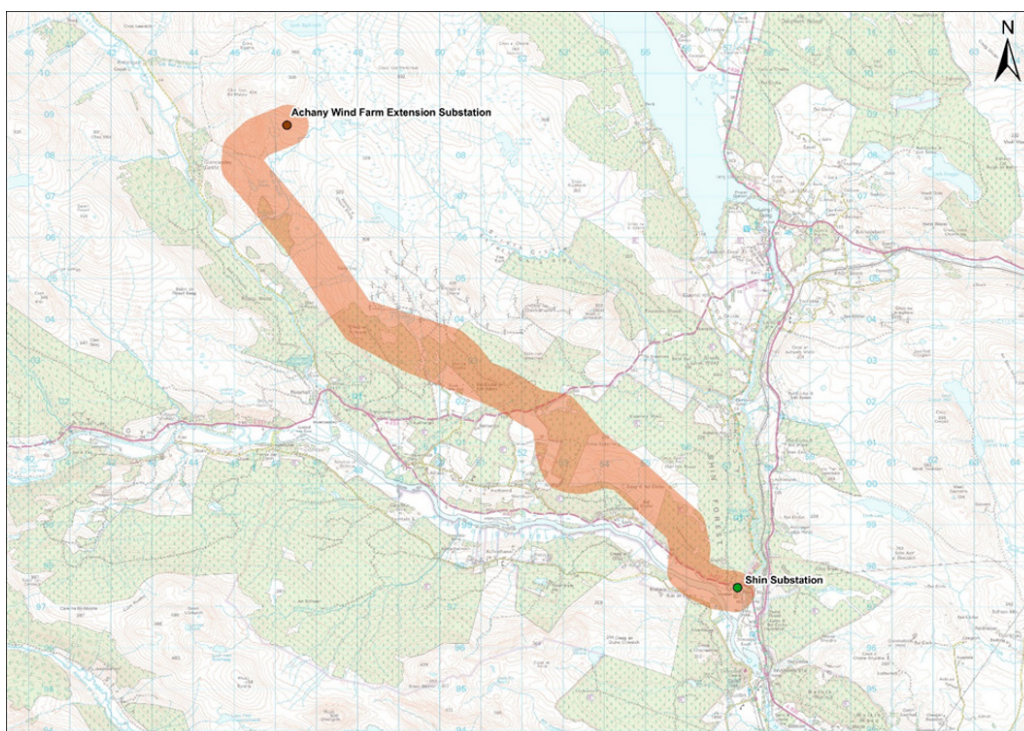
Low potential for the development to be constrained.
High potential for the development to be constrained.
Intermediate potential for the development to be constrained.

Route Option 1

Route Option 1 connects the proposed Achany Extension Wind Farm on-site substation to the operational Shin Substation. Route Option 1 represents the most central route option of those being considered for the connection and is approximately 20km long. Route Option 1 leaves the Achany Extension Wind Farm substation and travels southwest for approximately 2km to leave the area of the proposed turbines of the Achany Extension Wind Farm. It then turns in a south-easterly direction for approximately 8km remaining to the west of the turbines through Glen Rossal.

Route Option 1 would then widen to approximately 1.5km as it continues to travel southeast remaining to the east of the hamlet of Rosehall. After it has crossed the A839, it then widens again to a width of approximately 2km as it would pass to the south of Braemore wood (in which a consented wind farm may be developed) but to the north of the A837 and Linsidemore. After passing Linsidemore, Route Option 1 would narrow again to approximately 1km.

Prior to reaching the village of Invernan, Route Option 1 would turn south to cross the A837. It would remain to the north of the Kyle of Sutherland River Estuary and turn east to connect to Shin substation from the northwest.



	Key Topics Relating to Site																		
	Natural Heritage					Cultural Heritage		Landscape and Visual			People	Land Use			Planning		Engineering		
	Designations	Protected species	Habitats	Ornithology	Hydrology, Geology & Hydrogeology	Designations	Cultural Heritage Assets	Designations	Landscape Character	Visual Amenity	Residential properties & other sensitive receptors	Agriculture	Forestry	Recreation	Policy	Proposals	Infrastructure Crossings	Ground Conditions	Construction
Route Option 1	A	A	A	A	A	G	A	G	G	A	G	G	A	A	A	G	G	A	A

Route Option 1a

Route Option 1a follows Route Option 1 from the proposed Achany Extension Wind Farm on-site substation for approximately 12km. It branches off from Route Option 1 and offers an alternative from the A839 crossing point the east of Auchurigill.

Route Option 1a would travel south after the road crossing, and would continue to do so for approximately 4.5km. It would cross the A837 to the west of the township of Linsidmore and cross the Kyle of Sutherland River Estuary. On the south side of the Kyle of Sutherland River Estuary, upon reaching the hamlet of Rhelonie and a minor road, Route Option 1a would turn southeast. It would travel along the minor road for approximately 3km, before turning northeast to cross the Kyle of Sutherland River Estuary and connect into Shin substation from the southwest.



	Key Topics Relating to Site																		
	Natural Heritage					Cultural Heritage		Landscape and Visual			People	Land Use			Planning		Engineering		
	Designations	Protected species	Habitats	Ornithology	Hydrology, Geology & Hydrogeology	Designations	Cultural Heritage Assets	Designations	Landscape Character	Visual Amenity	Residential properties & other sensitive receptors	Agriculture	Forestry	Recreation	Policy	Proposals	Infrastructure Crossings	Ground Conditions	Construction
Route Option 1a	R	A	R	A	A	A	A	G	A	A	G	G	R	A	R	G	A	A	A

Route Option 2

Route Option 2 represents the most eastern route option of those considered for the connection and is approximately 23km long. Similarly to Route Option 1, Route Option 2 leaves Achany Extension Wind Farm substation and travels southwest. After travelling southwest for approximately 1.5km to leave the area of the proposed turbines of the Achany Extension Wind Farm, it then turns in a south-easterly direction prior to reaching Glen Rossal where it would travel to the north of the operational Achany Wind Farm turbines. After passing the operational Achany Wind Farm turbines, Route Option 2 turns south to travel through Braemore Wood to the west of the hamlet of Achany and crosses the A839 east of Auchurigill. It would then travel southeast passing to the south of the hamlet of Achany but to the north of the A837 and the township of Linsidimore as Route Option 1 does.

Route Option 2 would continue travelling southeast remaining north of the A837 and passing to the north of the village of Invernán through Achany Forest. Before reaching the B864 and the River Shin, Route Option 2 would turn southwest through an already existing way leave in Achany Forest, from where it would cross the A837 to connect to Shin substation from the northeast.



	Key Topics Relating to Site																		
	Natural Heritage					Cultural Heritage		Landscape and Visual			People	Land Use			Planning		Engineering		
	Designations	Protected species	Habitats	Ornithology	Hydrology, Geology & Hydrogeology	Designations	Cultural Heritage Assets	Designations	Landscape Character	Visual Amenity	Residential properties & other sensitive receptors	Agriculture	Forestry	Recreation	Policy	Proposals	Infrastructure Crossings	Ground Conditions	Construction
Route Option 2	A	A	A	A	A	A	G	A	A	G	G	G	A	G	A	R	G	A	A

Preferred route option

Based on the RAG ratings, Route Option 1 is preferable to the other two route options.

Route Option 1a is the least preferred route option with Red RAG ratings for natural heritage designations, habitats, forestry and policy. Route Option 1a would cross the Kyle of Sutherland Marshes Site of Special Scientific Interest (SSSI) and the River Oykel Special Area of Conservation (SAC). It would also require felling of woodland included on the Ancient Woodland Inventory (AWI) and on the Native Woodland Survey of Scotland (NWSS).

Route Option 2 has Red RAG ratings for planning proposals and ground conditions. It would be heavily constrained by the consented Braemore Wind Farm located in Braemore Wood near Lairg. This wind farm received consent in October 2017, though has not yet been built. As Route Option 2 travels to the south of Loch na Furlaich there is a high proportion of peat present which would be an engineering constraint.

Route Option 1 has therefore been identified as the Preferred Route Option, having been selected on the basis it provides an optimum balance of environmental, engineering and cost factors.

	Key Topics Relating to Site																		
	Natural Heritage					Cultural Heritage		Landscape and Visual			People	Land Use			Planning		Engineering		
	Designations	Protected species	Habitats	Ornithology	Hydrology, Geology & Hydrogeology	Designations	Cultural Heritage Assets	Designations	Landscape Character	Visual Amenity	Residential properties & other sensitive receptors	Agriculture	Forestry	Recreation	Policy	Proposals	Infrastructure Crossings	Ground Conditions	Construction
Route Option 1	A	A	A	A	A	G	A	G	G	A	G	G	A	A	A	G	G	A	A
Route Option 1a	R	A	R	A	A	A	A	G	A	A	G	G	R	A	R	G	A	A	A
Route Option 2	A	A	A	A	A	A	G	A	A	G	G	G	A	G	A	R	G	A	A

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 below 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.



Above 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.

What happens now and how do I have my say?

We understand and recognise the value of the feedback provided by members of the public during all engagements and consultations. 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 in regards to the following questions:

- Has the requirement for the project been clearly explained?
- Have we explained the approach taken to select the preferred OHL route adequately?
- Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?
- Do you have any other comments about the preferred route?
- Following a review of the provided information, how would you describe your understanding of the Achany Windfarm Extension Connection Project?
- Overall how do you feel about the Achany Windfarm Extension Connection Project?

Comments

Your views and comments can be provided to the project team by completing the feedback form or by writing to our Community Liaison Manager. All feedback received will be assessed and the proposed options adapted where necessary.

Feedback

We will be seeking feedback from members of the public on this exhibition until **Friday 30th December 2022**.

Please note comments made to Scottish and Southern Electricity Networks Transmission (SSEN Transmission) are not representations to the Scottish Ministers and if SSEN Transmission submits an application there will be an opportunity to make representations on that application to the Scottish Ministers.



Lisa Marchi
Community Liaison Manager



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Lisa Marchi
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/project-map/achany-wind-farm-extension-connection/

Follow us on Facebook:
[@ssencommunity](https://www.facebook.com/ssencommunity)

Follow us on Twitter:
[@ssetransmission](https://twitter.com/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 Have we explained the approach taken to select the preferred OHL route adequately?

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?

Yes No Unsure

Comments:

Q5 Following a review of the provided information, how would you describe your understanding of the Achany Windfarm Extension Connection Project?

Yes No Unsure

Comments:

Q5 Overall how do you feel about the Achany Windfarm Extension Connection Project?

Yes No Unsure

Comments:

Full name

Address

Telephone

Email

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

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

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

Please submit your completed form by one of the methods below:

Post: Scottish Hydro Electric Transmission, 10 Henderson Road, Inverness, IV1 1SN

Email: lisa.marchi@sse.com

Online: www.ssen-transmission.co.uk/projects/project-map/achany-wind-farm-extension-connection/

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 project websites.

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.

Scottish and Southern Electricity Networks is a trading name of: Scottish and Southern Energy Power Distribution Limited Registered in Scotland No. SC213459; Scottish Hydro Electric Transmission plc Registered in Scotland No. SC213461; Scottish Hydro Electric Power Distribution plc Registered in Scotland No. SC213460; (all having their Registered Offices at Inveralmond House 200 Dunkeld Road Perth PH1 3AQ); and Southern Electric Power Distribution plc Registered in England & Wales No. 04094290 having its Registered Office at Number One Forbury Place, 43 Forbury Road, Reading, Berkshire, RG1 3JH which are members of the SSE Group.

