

Chleansaid Wind Farm Connection

Consultation Booklet

January 2023

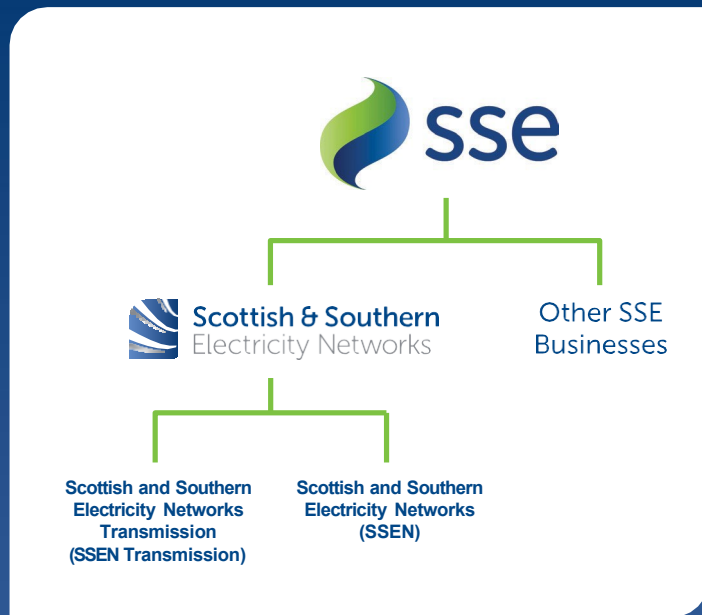


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Who we are

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.



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.

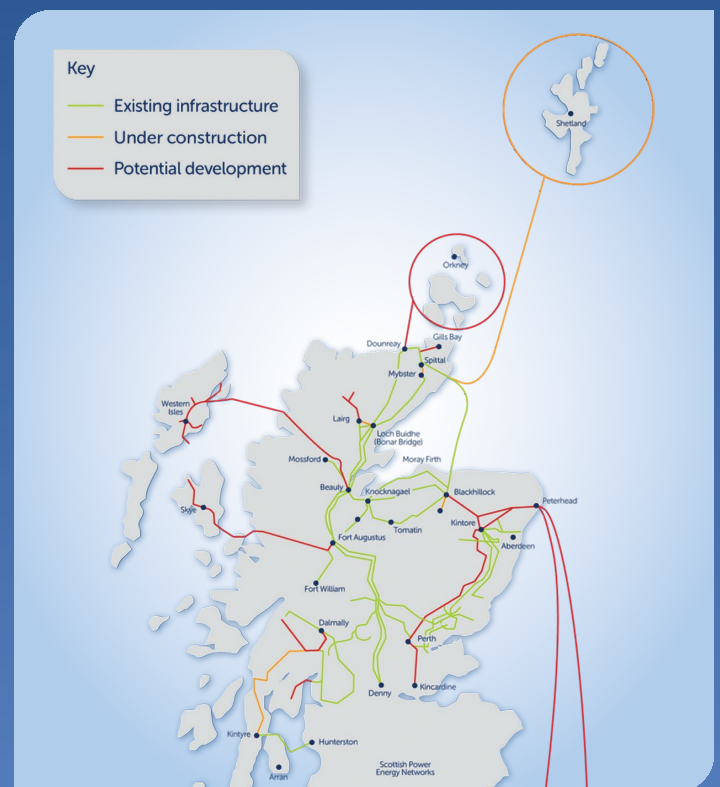
Our licence stipulates that we must develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

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.

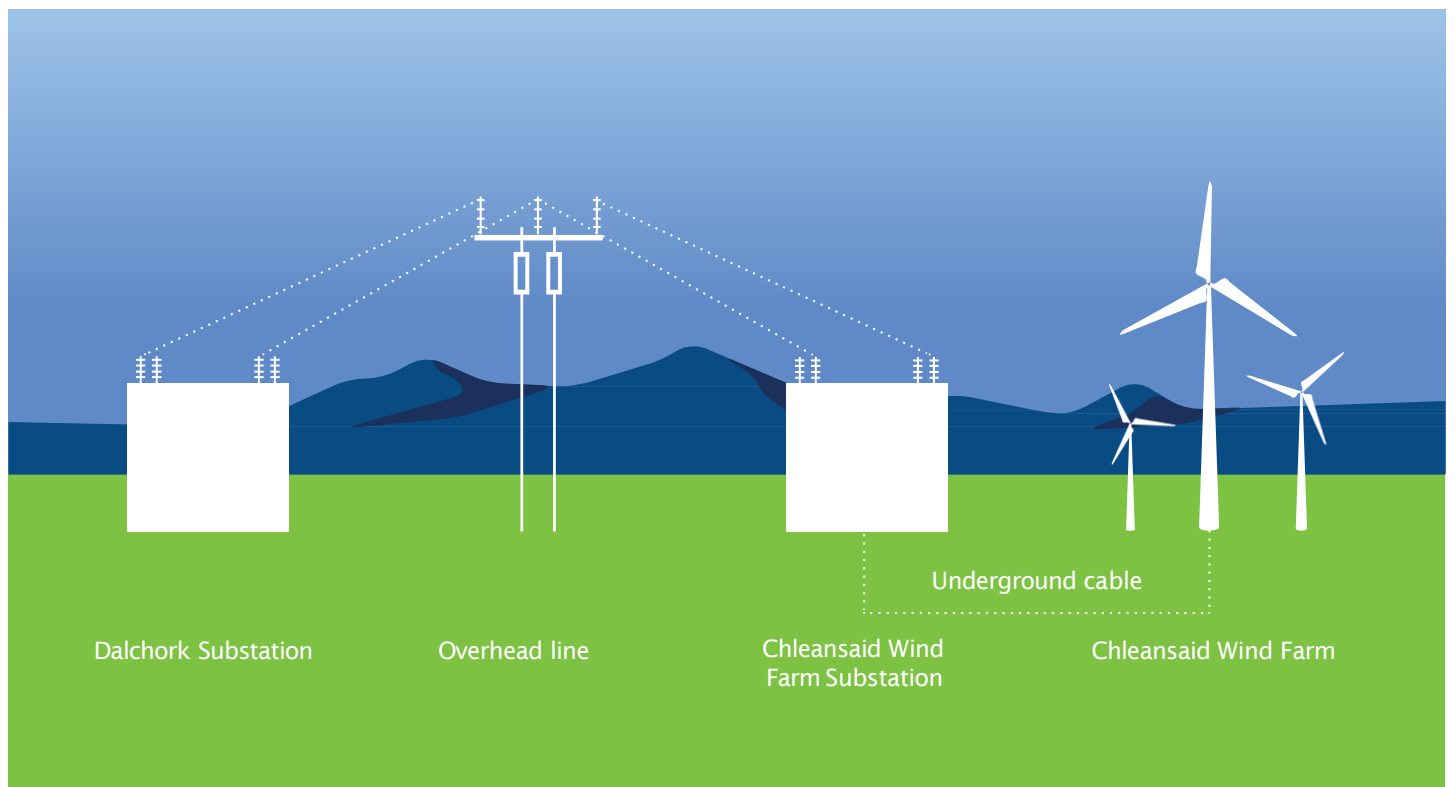
The Electricity Distribution network is connected into the Transmission network but the voltage is lowered by transformers at electricity substations, and the power is then distributed to homes and businesses through overhead lines or underground cables.

Overview of Transmission Projects



Project need and overview

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 Chleainsaid Wind Farm 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.

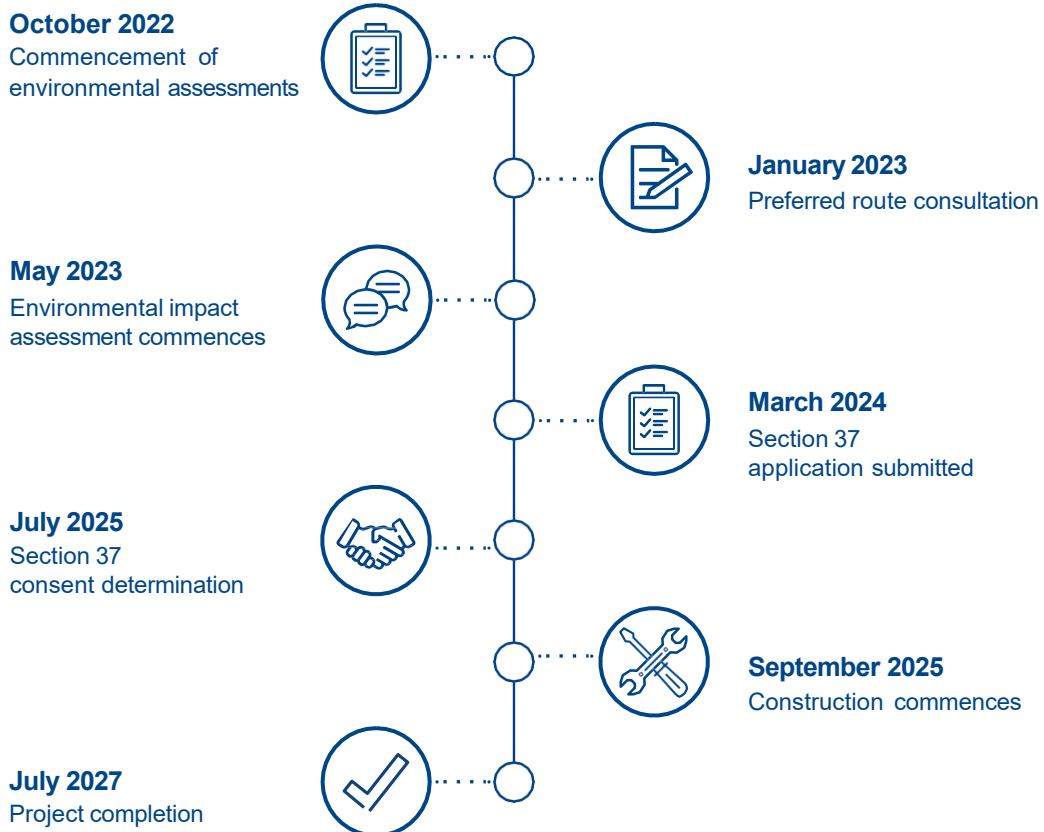
The proposal is a single circuit 132kV trident wood "H" pole arrangement as shown in the image supporting the overhead line running over a distance of approximately 10.5km in length between the existing Dalchork substation and the Chleainsaid Wind Farm substation.

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 Chleainsaid Wind Farm connection, 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 October 2022 to January 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 preferred route and alignment for the connection, further detailed studies and assessment work will be undertaken to support the consenting process from April 2023 to January 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 EIA Development, SSEN Transmission will provide equivalent environmental information through a voluntary Environmental Appraisal (EA) Report. Chleansaid will be screened for EIA in Spring 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

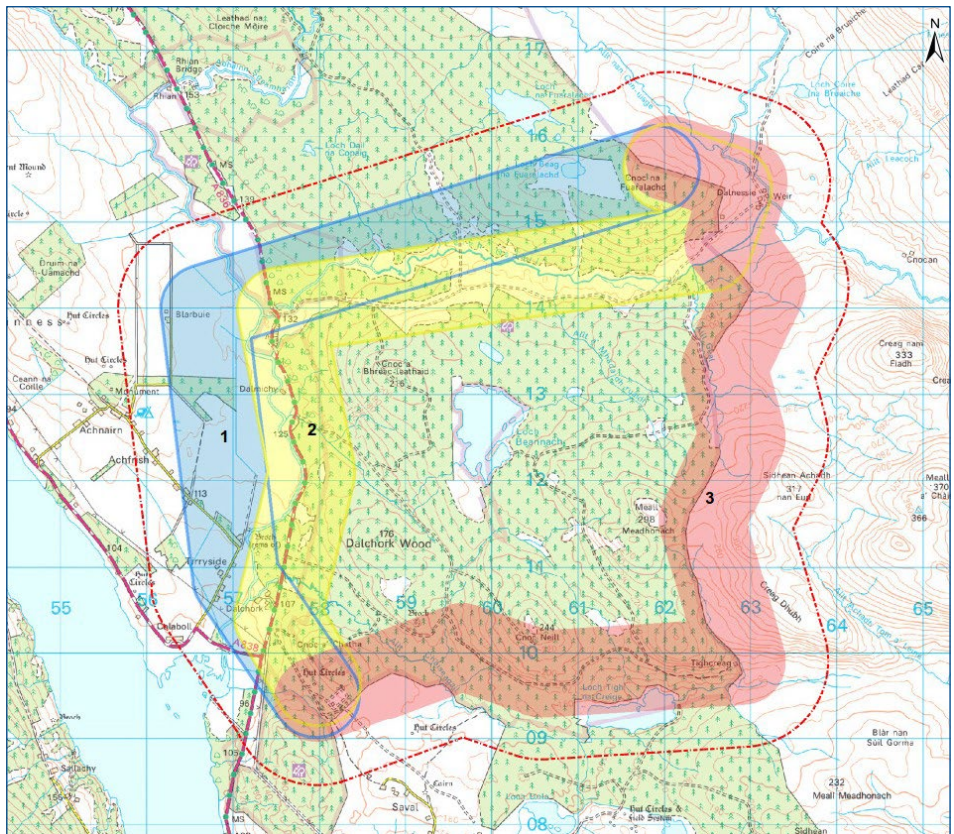
The map below shows the three route options under consideration for the connection of Chleainsaid Wind Farm substation to Dalchork substation.

Three potential route options were identified for detailed assessment following an initial desk-based review of potential constraints. The aim is to avoid 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.

In consideration of these principles, the method of identifying a preferred route in this study has involved the following four key tasks:

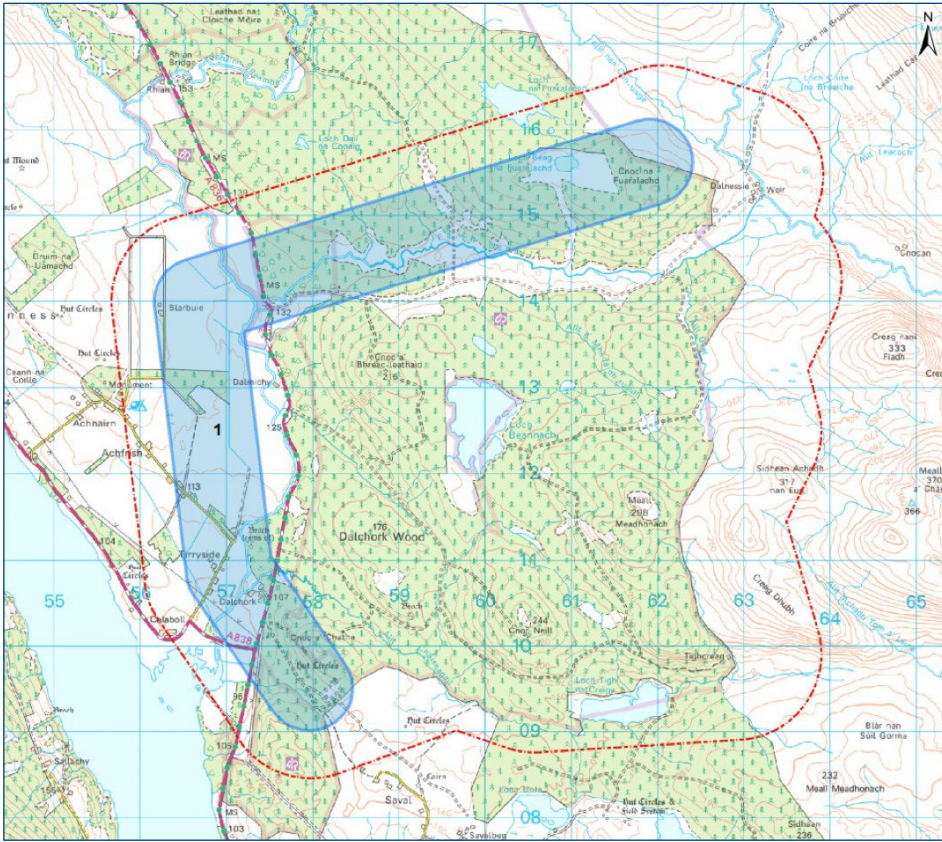


More information on the routes is provided in each route option summary.



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

Route Option 1



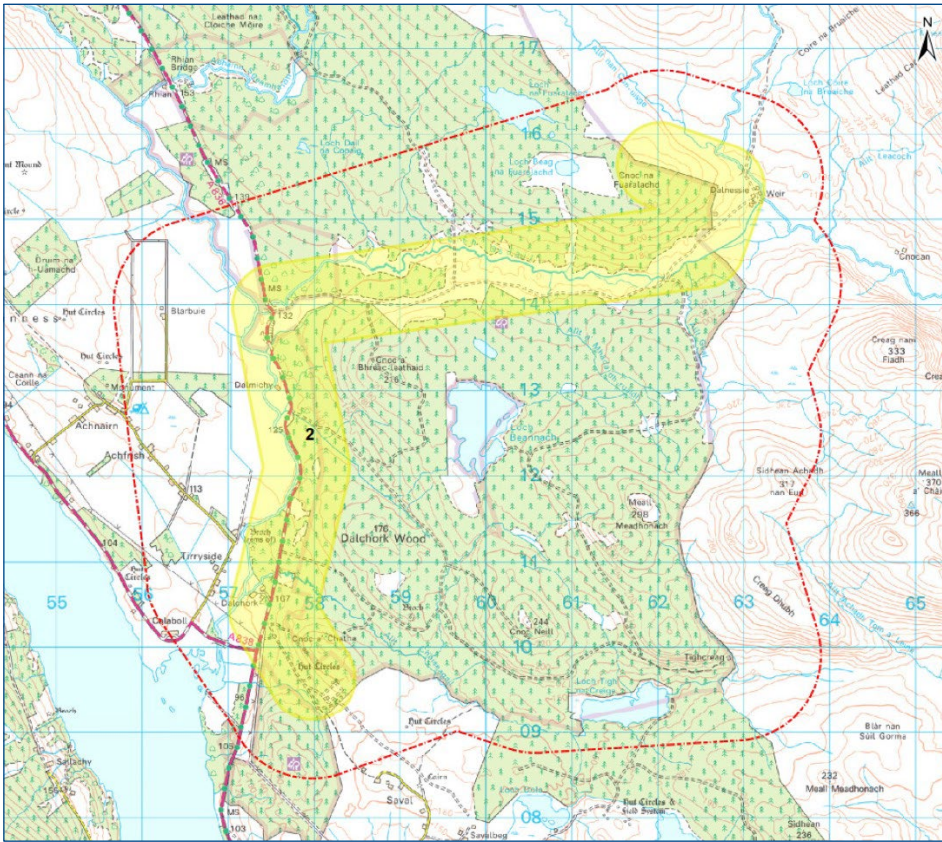
Route Option 1 would travel directly west-south-west from Chleansaid substation through forestry, just south of Loch Beag Fuaralachd and in parallel to Feith Osdail water course. The route would continue for approximately 6 km crossing the A836 and over the River Tirry. At this point, it changes direction to travel south through the floodplain for approximately 3 km to then cross back over the River Tirry and A836 to join the Dalchork substation.

Key topics relating to site

Route option 1	Natural heritage				Cultural heritage		People	Landscape and visual			Land Use			Planning	Infrastructure Crossings		Environmental Design			Ground Conditions		C/M*	Proximity					
	Designations	Protected species	Habitats	Ornithology	Hydrology, geology and hydrogeology	Designations	Cultural heritage assets	Proximity to dwellings	Designations	Landscape character	Visual	Agriculture	Forestry	Recreation	Policy and proposals	Major crossings and Metallic pipelines	Road crossings	Elevation	Atmospheric Pollution	Contaminated Land	Flooding	Terrain	Peat	Access	Clearance distance	Windfarms	Communication Masts	Cost
	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Green	Yellow	Red	Green	Yellow	Yellow	Red	Red	Yellow	Yellow	Green	Green	Yellow	Green	Red	Red	Red	Red	Red	Green	Yellow

*C/M: Construction and Maintenance

Route Option 2



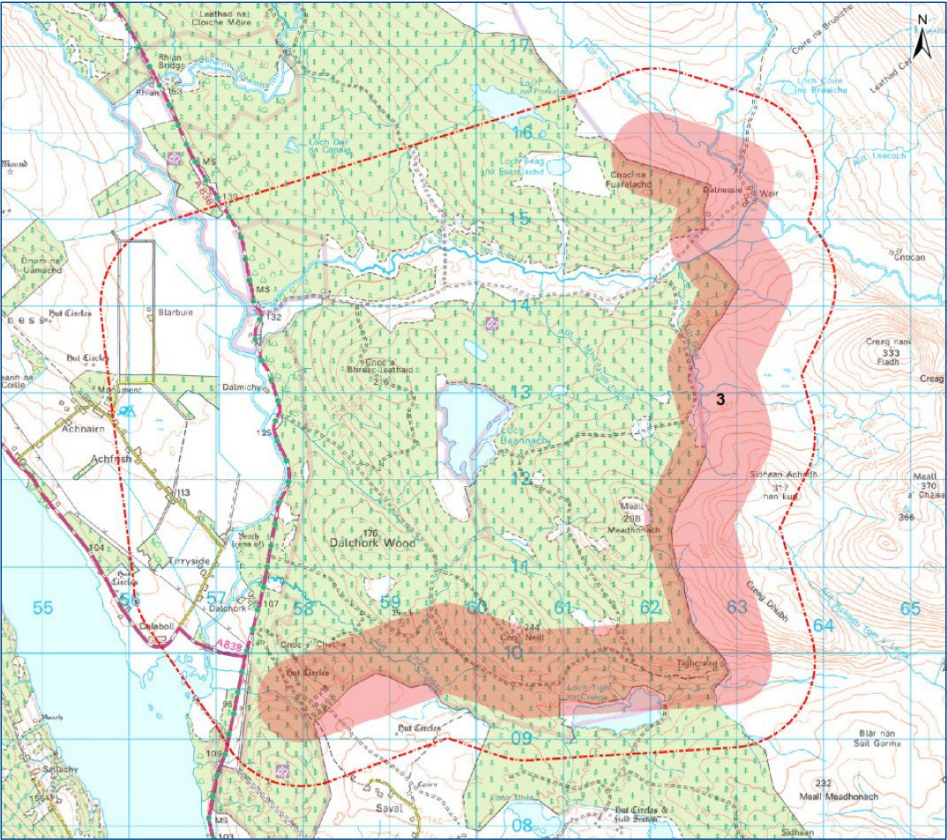
Route Option 2 travels east and then south following the edge of forestry plantation for approximately 1km from Chleainsaid substation. Route Option 2 then travels west along the Feith Osdail water course valley for approximately 5 km, crossing existing forestry tracks and the Feith Osdail water course.

At the western end of the valley the route meets the A836 and River Tirry where it changes direction to travel south, parallel to the A836, crossing the River Tirry to Dalchork Substation, an approximate 4.5 km distance.

Route option 2		Key topics relating to site																									
		Natural heritage				Cultural heritage		People	Landscape and visual		Land Use		Planning	Infrastructure Crossings	Environmental Design		Ground Conditions		C/M*	Proximity							
Designations	Protected species	Habitats	Ornithology	Hydrology, geology and hydrogeology	Designations	Cultural heritage assets	Proximity to dwellings	Designations	Landscape character	Visual	Agriculture	Forestry	Recreation	Policy and proposals	Major crossings and Metallic pipelines	Road crossings	Elevation	Atmospheric Pollution	Contaminated Land	Flooding	Terrain	Peat	Access	Clearance distance	Windfarms	Communication Masts	Cost

*C/M: Construction and Maintenance

Route Option 3



Route Option 3 follows the same route as Route Option 2 until it meets the Feith Osdail water course. At this point Route Option 3 travels south approximately for 6km from Chleainsaid substation following the edge of forestry plantation. After approximately 6km, the route changes direction and travels west to continue along the shallow valley north of Loch Tigh nat Creige and south of Cnoc Neill for approximately 5km, crossing Allt Chaiseagail, to join Dalchork Substation.

Key topics relating to site																													
Route option 3	Natural heritage				Cultural heritage		People	Landscape and visual		Land Use		Planning	Infrastructure Crossings	Environmental Design		Ground Conditions		C/M*	Proximity										
	Designations	Protected species	Habitats	Ornithology	Hydrology, geology and hydrogeology	Designations	Cultural heritage assets	Proximity to dwellings	Designations	Landscape character	Visual	Agriculture	Forestry	Recreation	Policy and proposals	Major crossings and Metallic pipelines	Road crossings	Elevation	Atmospheric Pollution	Contaminated Land	Flooding	Terrain	Peat	Access	Clearance distance	Windfarms	Communication Masts	Cost	
	Yellow	Green	Yellow	Yellow	Yellow	Red	Green	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Green	Green	Red	Green	Green	Green	Red	Red	Yellow	Green	Green	Green	Green	Green

*C/M: Construction and Maintenance

Preferred route option

Based on the RAG ratings, Route Option 2 is preferable to the other two identified route options.

Route Option 2 is better placed to accommodate an overhead line in respect of environmental topics; it has notably less potential for visual amenity effects and effects on landscape designations compared to the other route options. Cultural heritage designations are a key consideration for Route Option 2 but not considered insurmountable to avoid through careful routeing, design and construction techniques. Route Option 2 is also the most technically feasible of the Route Options. The potentially poor ground conditions within the route are a key consideration for Route Option 2 but not considered insurmountable with the natural topography allowing for potentially multiple alignments within the route option to mitigate impacts.

Route Option 1 is the least preferred route option with Red RAG ratings for proximity to dwellings, visual amenity, policy, major crossings, peat, access, clearance distances and wind farms. The route option is in close proximity to numerous dwellings at Tirryside and Dalchork and routes through the proposed Strath Tirry Wind Farm. There are also significant concerns regarding the presence of peat and the amount of tree-felling required to facilitation construction within Route Option 1.

Route Option 3 has Red RAG ratings for cultural heritage designations, elevation, terrain and peat. The route option contains 11 Scheduled Monuments and there are pinch-points within the central portion of the route, with an increased potential for direct impacts and setting impacts. The route option could potentially be perceived from Ben Klibreck - Armine Forest Wild Land Area (WLA), especially to the north-east, where an overhead line could become a prominent feature on the views from the WLA, affecting some its attributes and qualities. Route Option 3 also poses significant construction and maintenance constraints due to the topography and ground conditions along the whole route, as it has the highest average altitude and steeper slopes compared to the other route options.

Route Option 2 has 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																													
Route options	Natural heritage				Cultural heritage		People	Landscape and visual			Land Use			Planning	Infrastructure Crossings		Environmental Design			Ground Conditions		C/M*	Proximity						
	Designations	Protected species	Habitats	Ornithology	Hydrology, geology and hydrogeology	Designations	Cultural heritage assets	Proximity to dwellings	Designations	Landscape character	Visual	Agriculture	Forestry	Recreation	Policy and proposals	Major crossings and Metallic pipelines	Road crossings	Elevation	Atmospheric Pollution	Contaminated Land	Flooding	Terrain	Peat	Access	Clearance distance	Windfarms	Communication Masts	Cost	
1	Green	Green	Yellow	Yellow	Yellow	Green	Red	Green	Yellow	Yellow	Green	Yellow	Yellow	Red	Red	Yellow	Yellow	Green	Green	Yellow	Green	Red	Red	Red	Red	Green	Green	Green	Yellow
2	Green	Green	Yellow	Yellow	Yellow	Red	Green	Green	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Red	Red	Green	Green	Green	Red	Yellow	Green	Green	Green	Yellow	Green	Green	Green
3	Yellow	Green	Yellow	Yellow	Yellow	Red	Green	Green	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Green	Green	Green	Red	Green	Green	Green	Red	Red	Yellow	Green	Green	Green	Green	Green

*C/M: Construction and Maintenance

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 Chleainsaid Wind Farm Connection Project?
- Overall how do you feel about the Chleainsaid Wind Farm 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 **Tuesday 21st February 2023**.

Feedback is welcomed throughout the development of the project. To provide comments on the proposal or to gain further information on the project, contact our Community Liaison Manager.



Martin Godwin
Community Liaison Manager



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SSEN Transmission
10 Henderson Road,
Inverness, IV1 1SN

Additional information

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

Project website:

ssen-transmission.co.uk/projects/project-map/chleainsaid-wind-farm-connection/

Follow us on Facebook:

[@ssencommunity](https://www.facebook.com/ssencommunity)

Follow us on Facebook:

[@ssencommunity](https://www.facebook.com/ssencommunity)

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 Overall how do you feel about the Chleansaid Wind Farm 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: SSEN Transmission, 10 Henderson Road, Inverness, IV1 1SN

Email: martin.godwin@sse.com

Online: ssen-transmission.co.uk/projects/project-map/chleansaid-wind-farm-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.

