Scottish & Southern Electricity Networks

TRANSMISSION

Alyth - Tealing Overhead Line 400kV Upgrade

Consultation Booklet

March 2024

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The consultation events will be taking place on:

4 March 2024 - Errol, Errol Village Hall – 2pm-7pm

5 March 2024 - Newburgh, Tayside Institute Community Centre – 2pm-7pm

6 March 2024 - Alyth, Alyth Town Hall – 2pm-7pm

7 March 2024 - Tealing, Tealing Village 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 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.

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 manage the electricity transmission 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 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 have an impact on our host communities. So we're committed to minimising our impacts and maximising all the benefits that our local 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. 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

The Pathway to 2030

Building the energy system of the future will require a delivery of significant infrastructure over the next few years. In partnership with the UK and Scottish Governments, we're committed to meeting our obligation of connecting new, renewable energy to where it's needed by 2030.

Achieving net zero

By 2030, both the UK and Scottish governments are targeting a big expansion in offshore wind generation of 50GW and 11GW respectively. The Scottish Government has also set ambitious targets for an additional 12GW of onshore wind by 2030.

Across Great Britain, including the north of Scotland, there needs to be a significant increase in the capacity of the onshore electricity transmission infrastructure to deliver these 2030 targets and a pathway to net zero.

Securing our energy future

And it's not just about net zero. It's also about building a homegrown energy system, so that geopolitical turmoil around the world doesn't severely impact the UK and push up energy prices. The UK Government's British Energy Security Strategy further underlines the need for this infrastructure, setting out plans to accelerate homegrown power for greater energy independence.

The strategy aims to reduce the UK's dependence on and price exposure to global gas wholesale markets through the deployment of homegrown low carbon electricity generation supported by robust electricity network infrastructure.

Meeting our 2030 targets

In July 2022, National Grid, the Electricity System Operator (ESO), published the Pathway to 2030 Holistic Network Design (HND).

This set out the blueprint for the onshore and offshore transmission infrastructure that's required to support the forecasted growth in the UK's renewable electricity.

It's an ambitious plan that will help the UK achieve net zero.

What does this mean for you?

The East of Scotland will play a key role in meeting these goals. The extensive studies that informed the ESO's Pathway to 2030 HND confirmed the requirement to increase the power transfer capacity of the onshore corridor from Kintore to Tealing.

This requires a 400kV connection between these sites to enable the significant capability needed to take power from onshore and large scale offshore renewable generation, connecting on the East Coast of Scotland before transporting power to areas of demand.

As part of these plans, we're proposing to build a new 400kV OHL between Kintore and Tealing. This also requires two new 400kV substations to be constructed in Fetteresso Forest and Tealing to enable future connections and export routes to areas of demand.

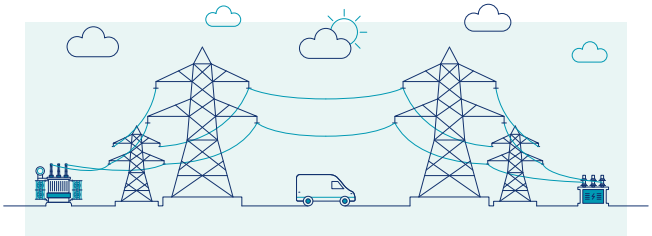
In addition, two of the existing 275kV OHL out of the existing Tealing substation to Alyth and Westfield require upgrades to 400kV operation and to be connected to the proposed new Tealing 400kV site.

These five projects, collectively are called the Kintore to Tealing 400kV projects, and are seen as critical to enable the delivery of the UK and Scottish Government's targets.

Future network investment requirements

Our 2030 targets are the first step on the transition to net zero. The UK Government has a target to decarbonise our electricity system by 2035 and fully decarbonise our economy by becoming net zero by 2050, with the Scottish Government committing to net zero five years earlier, by 2045.

To achieve these targets, further investment in new low carbon electricity generation and the enabling electricity transmission network infrastructure will be required. The next stage of strategic network planning across Great Britain is underway and we expect the independent Electricity System Operator, National Grid ESO, to publish details of this in March this year. It is expected this will include a combination of new onshore and offshore network requirements.




New infrastructure
Upgrade/replacement of existing infrastructure
Existing network
Orkney
Dounreay
Spittal
Western Isles
Loch Buidhe
Skye
Blackhillock
New Deer
Beauly
Peterhead
Fasnakyle
Kintore
Fetteresso Forest (Hurlie)
Fort Augustus
Alyth
Glenlochy
Tealing (Emmock)
Creag Dhubh
Braco West
Inveraray
Denny
Westfield
Crossaig

Project overview

As the transmission network owner for the north of Scotland, Scottish and Southern Electricity Networks Transmission (SSEN Transmission) are responsible for the maintenance of the existing transmission network and also ensuring that the current network can facilitate connection requests from developers when necessary.

The reconductoring of the existing Alyth to Tealing OHL has been identified as part of the National Grid ESO's Holistic Network Design (HND).

This project will upgrade the line from 275kV to 400kV to facilitate the transition to Net Zero in line with the UK and Scottish Government targets of achieving net zero by 2050 and 2045 respectively.

This booklet focuses on the upgrades required between Alyth and Tealing substations.

Approach to consenting

An application for Section 37 consent will be made under the Electricity Act 1989 for the upgrade of the existing OHL to operate at 400kV.

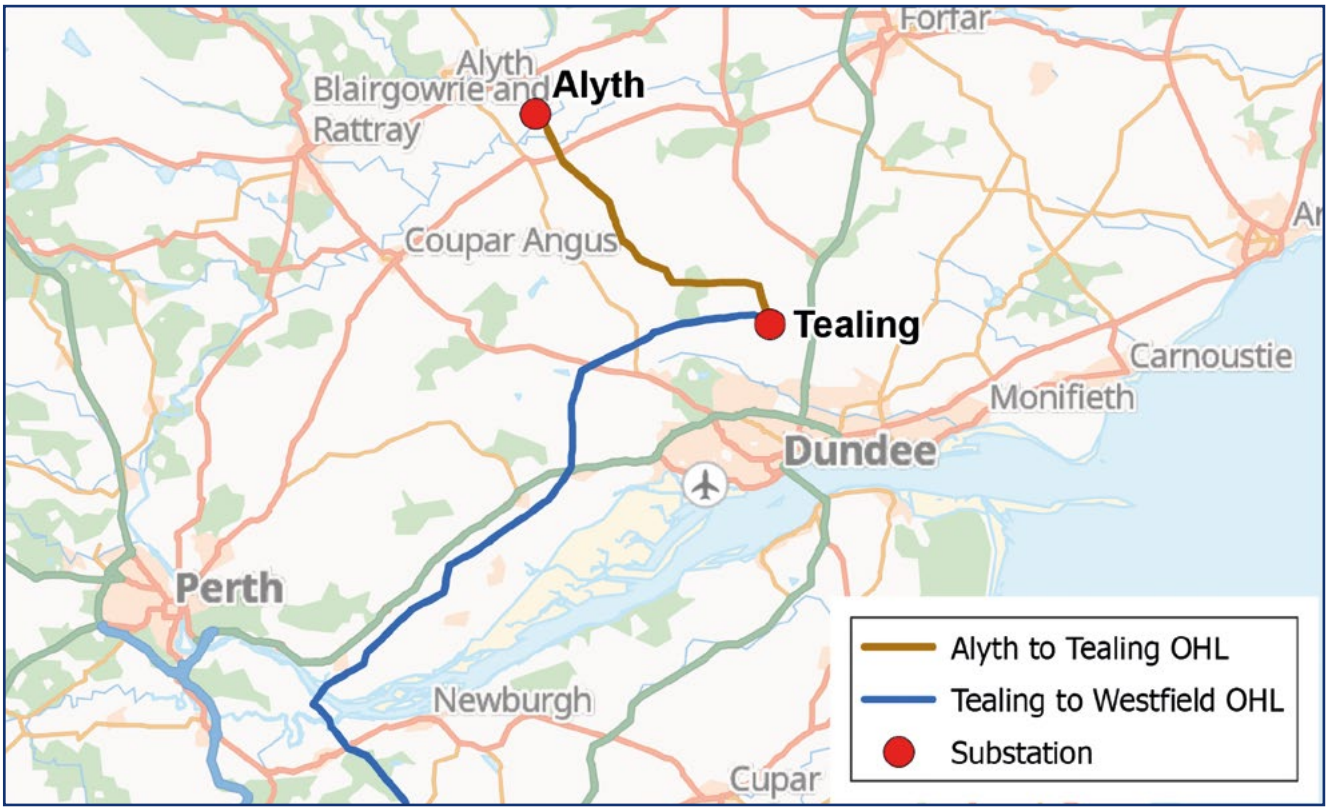
This application is made to the Energy Consents Unit of the Scottish Government.

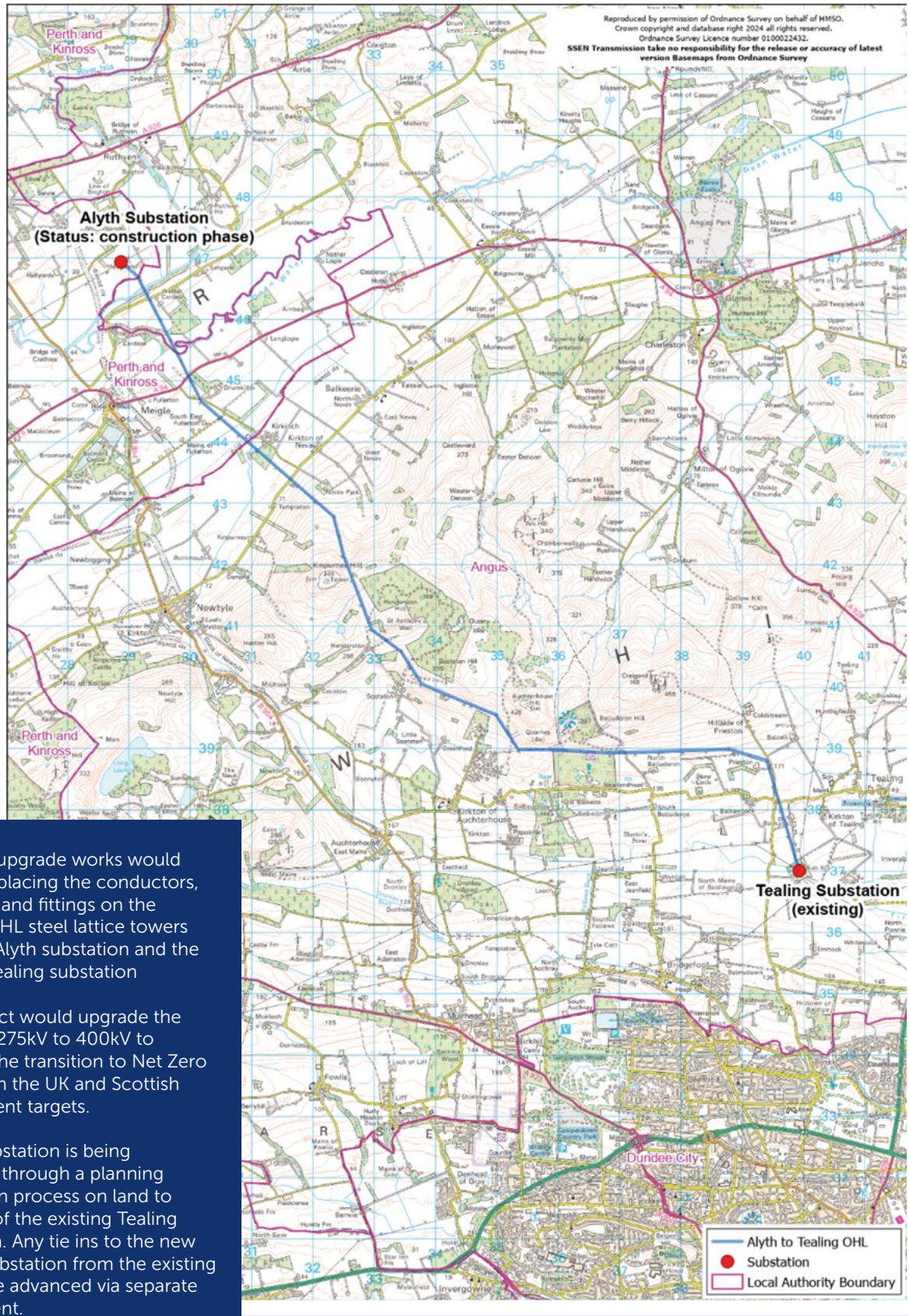
The S37 will cover all aspects of the OHL works, including replacement of insulators and conductors, tower and foundation repairs, ground reprofiling, all associated works and the provision of access tracks to enable these works. This application is made to the Energy Consents Unit (ECU) of the Scottish Government.

The application will also need to be accompanied by an Environmental Impact Assessment (EIA) Report.

We will be submitting an EIA Scoping Report to ECU soon, which, in collaboration with statutory and non-statutory consultees, will determine the scope of issues to be considered in the EIA Report.

The scope to carry out some of the works, either as permitted development or through separate planning consent, in advance of obtaining S37 consent is currently being explored.





The OHL upgrade works would involve replacing the conductors, insulators and fittings on the existing OHL steel lattice towers between Alyth substation and the existing Tealing substation

This project would upgrade the line from 275kV to 400kV to facilitate the transition to Net Zero in line with the UK and Scottish Government targets.

A new substation is being advanced through a planning application process on land to the west of the existing Tealing substation. Any tie ins to the new Tealing substation from the existing line will be advanced via separate S37 consent.

Project details - Overhead Lines

Conductor replacement

The existing conductor is Twin Zebra Aluminium Conductor Steel Reinforced (ACSR) Conductor. This conductor has been in place since the OHL was constructed in 1963 and 1973 and is due for replacement.

The replacement conductor that will be used is a Triple Upas All Aluminium Alloy Conductor (AAAC) consisting of stranded construction.

Insulator replacement

The existing 275kV insulators will be replaced with 400kV insulators.

These are slightly longer than the existing insulators as they have more discs. The insulator and conductor replacement will allow the OHL to transfer a higher capacity of power.

Tower refurbishments

The new conductor is heavier than the existing conductor therefore some of the tower steelwork and foundations will need to be strengthened.

The refurbishments and upgrades to the steelwork and foundations will take place ahead of replacing the conductors.

Access requirements

To access the towers, we will use a variety of methods including the construction of new stone access tracks, use of existing tracks, laying of trackway panels on favourable terrain or by all-terrain vehicle.

We will agree any access requirements with the relevant landowners and secure consent, where required, before commencing works.

Operational corridor requirements

The operational corridor is calculated based on achieving OHL resilience from tree fall. The uprating from 275kV to 400kV will result in the need for a wider operational corridor which could equate to a potential 89m full operational corridor width from woodland edge to woodland edge. Requirements will be assessed through the detailed design process.

Conductor replacement

Insulator replacement

Tower refurbishments

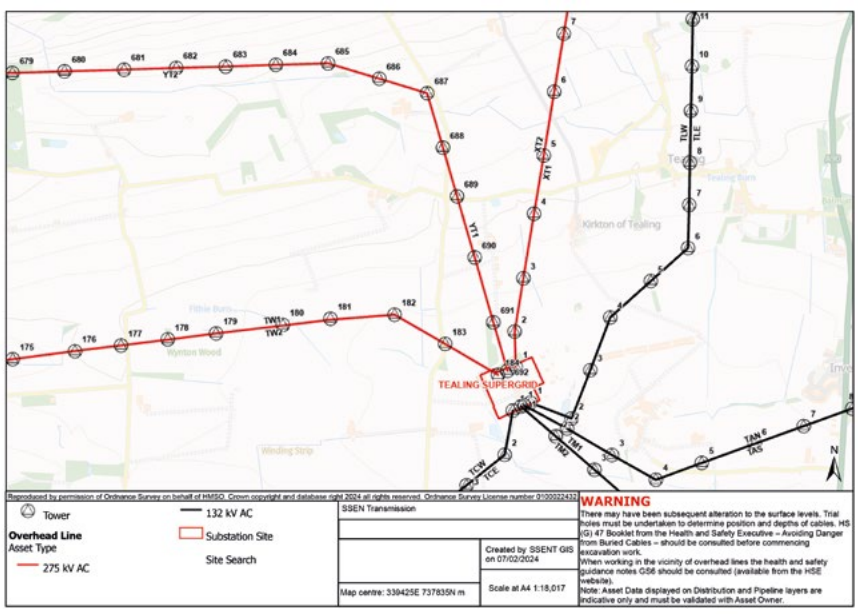
Access Tracks

Project interfaces

Tealing substation

The existing OHL will be upgraded from Alyth substation to Tower 685, north-west of the existing site. To enable the operation of the OHL at 400kV, the existing OHL will be connected into the new 400kV substation being developed. This will be achieved by the construction of a new OHL originating at some point between the existing line between Tower 680 and Tower 682. This will enable the removal of approximately 1.5km of redundant OHL between tower 682 to the existing substation.

A separate Section 37 consent for the new build tie-in will be submitted to the Energy Consents Unit.

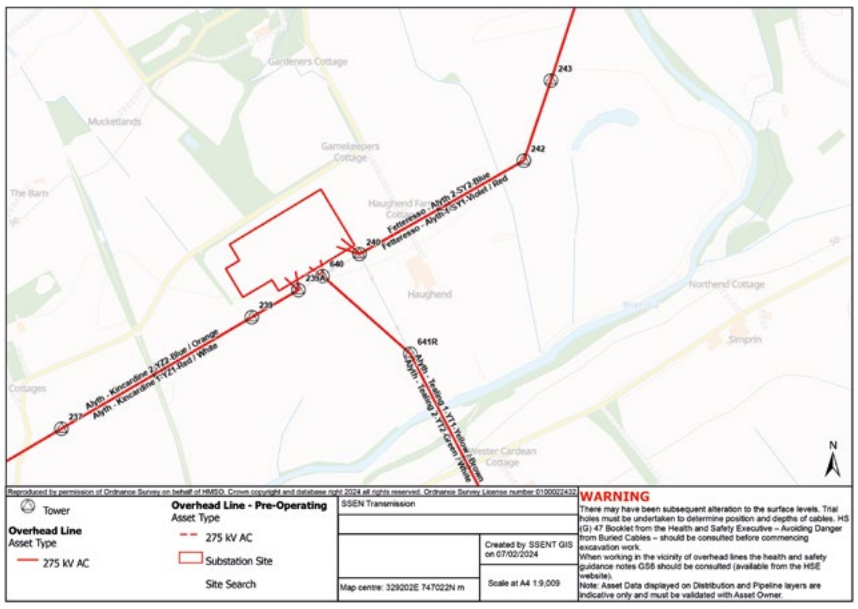


Alyth substation

Alyth substation is currently under construction and will be energised for operation at 400kV in 2026.

A Section 37 consent was granted in March 2020 for a new OHL configuration to connect the substation into the network for 2023.

When the OHL is ready for energisation some additional works will be required within the substation, including the removal of the transformers, to enable operation at 400kV.



Environmental considerations

This project is proposed as an upgrade to the existing OHL network between Alyth substation and Tealing substation and does not involve the construction or introduction of any new steel lattice towers. An Environmental Impact Assessment is required as part of the Section 37 consent application under the Electricity Act 1989. An EIA Scoping Report will be prepared and submitted to the Energy Consents Unit of the Scottish Government to agree which environmental elements should be taken into consideration as part of the assessment.

Ornithology

The OHL does not pass through any sites designated for ornithological interests. There are however likely to be breeding birds in the vicinity of the existing OHL, in particular lekking black grouse, raptors and upland waders. There will also be bird flight activity in proximity to, and across the line.

Mitigation measures will be required to avoid or minimise effects on these birds during the construction phase and a full suite of required bird surveys will be carried out and the scope agreed with NatureScot.

Water environment

The OHL passes over or near to a number of river catchments and watercourses. Several towers are located in areas of potential flood risk but with mitigation measures the project is not anticipated to increase flood risk or have a detrimental impact on water quality.

Private water supplies will be identified and assessed to determine potential risk to any supplies. Where required, measures will be put in place to ensure that the quality and quantity of water from these supplies would not be adversely affected.

Visual effects

There would be limited material change to the appearance of the OHL following the reinforcement works as the associated fittings will be visually similar to those present already, albeit the existing twin conductors would be replaced with triple conductors.

Some visual effects would result during the construction from temporary works as crew and machinery move along the line to replace the conductors and fittings and works and from tree felling associated with the creation of a 400kV operational corridor.

Terrestrial and aquatic ecology

The OHL crosses primarily agricultural land, utilised for arable crops and pasture, as well as areas of woodland, running and standing water.

Within the corridor there is a single Special Area of Conservation (SAC) (River Tay SAC - Dean Water and River Isla), and three Ancient Woodland Inventory (AWI) woodlands of Long-Established Plantation Origin (LEPO). There are no other designated sites, including Locally Designated Sites. A single area of peat is present.

Surveys identified a number of habitats which are listed on the Scottish Biodiversity List and are therefore considered to be of principal importance for biodiversity conservation in Scotland. Most are also Tayside Local Priority habitats.

Targeted surveys and species protection plans would be put in place to minimise potential effects to protected species during construction.

Cultural heritage

A limited number of non-designated assets have been recorded within 100m of the current OHL, although most are set some distance away from the existing towers.

As a result, physical impacts should be limited to the access tracks and other associated supporting works that might be required.

In addition, there is the potential for physical impacts on Cardean Roman Camp at the north end of the Scheme (SM4337) as one of the existing towers fall within the scheduled monument. Any works in this area will require careful consideration and potentially require Scheduled Monument Consent.

Further consultation will be required with Statutory Consultees with regards to any direct impacts and suitable mitigation that may be required.

A programme of archaeological works will be implemented, and recommendations provided to minimise the potential effects on assets during construction will be presented in the Construction Environmental Management Plan (CEMP), identifying known cultural heritage assets within close proximity to existing towers and proposed access routes.

Traffic and transport

A Construction Traffic Management Plan (CTMP) will be developed and used to specify construction traffic routes to suitable roads and appropriately signed diversions, where required during the construction phase of the works. This will be prepared in agreement with Perth and Kinross and Angus Councils.

Noise

Construction noise is considered to be short term and intermittent and will be controlled through the implementation of a Noise Management Plan.
An assessment of operational noise will be undertaken, in discussion with the Environmental Health Departments of Perth and Kinross and Angus Councils.

Electromagnetic fields

Electromagnetic Fields (EMF) arise from electric charges and current flow. Exceedance of EMF exposure limits are not expected, but an assessment of the change in EMF strengths due to the OHL operating at 400kV will be undertaken and the results will be presented alongside exposure limits.

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 are 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 Scottish Forestry (SF).

Finding common ground with landowners

We recognise that landowners and occupiers are key stakeholders in the development of our projects. At all levels, we will be transparent about our proposals and keep the conversation open and constructive when it comes to those affected and reaching effective compromise.

From the outset of the project, our land team have been identifying and contacting landowners and occupiers who may be affected by our proposals.

If you are a landowner who is affected by the proposals and have not yet had contact from us, please get in touch via the contact details for the dedicated project land managers found on the relevant webpages: https://bit.ly/42AUk4C

We work with landowners and occupiers to mitigate the effects of our infrastructure on their properties and our team of Land Managers will be on hand to answer queries and address concerns throughout this process.

As part of this, we need to carry out various engineering and environmental surveys to inform what we design and how we build it.

We will always seek consent from affected landowners and occupiers in advance for these surveys.

Once we have finalised the design, we will be required to secure the appropriate land rights from landowners and occupiers in order to secure planning consent.

Our land managers will endeavour to reach a voluntary agreement with landowners and occupiers, however, as a statutory undertaker, we might need to underpin voluntary discussions with an application to Scottish Ministers for a Necessary Wayleave or Compulsory Purchase Order.

Ultimately this is to ensure nationally significant infrastructure projects are delivered on time and in line with our licence obligations. We also have a duty to protect the interests of the UK bill payer.

Statutory powers are not used lightly as we aim to work with landowners and occupiers to secure the necessary land rights voluntarily.

All potentially affected landowners and occupiers have the opportunity to provide feedback at our in-person consultation events and by submitting a feedback form.

We would encourage all those with an interest to submit their views through this consultation.

Leaving things better than we found them

On every project we deliver, we always need to consider how we impact the environment in that area. As we enhance the transmission network in the East of Scotland, we have a responsibility to design and build our projects to protect and enhance the environment. We will always look to minimise the potential impacts from our activities and achieve Biodiversity Net Gain (BNG).

As the first developer to consult upon and implement an award-winning approach to deliver Biodiversity Net Gain (BNG) on all new sites, we're committed to delivering a "greener grid", focusing on habitat restoration and creating biodiversity growth as we invest in our network. We are committed to delivering 10% Biodiversity Net Gain on all sites gaining consent going forward. This ensures that we don't just restore our natural habitats but actively improve them for the benefit of local communities, wildlife, flora and fauna.

During the development, construction and operation of our projects, we will leave the environment in a measurably better state than before development started, ensuring a positive environmental legacy at all our sites. As this project progresses through the development process, we will actively seek ways to avoid and minimise impacts on biodiversity, through careful routeing and site design to avoid impacting areas of highest biodiversity value.

Where avoidance is not possible, we will offset this by introducing new habitats along with restoration efforts. These can be achieved within the boundary of the development site, or by providing support to local groups involved with habitat restoration or creation projects, within the locale of the development site.

If there are biodiversity improvement projects in your local area that SSEN Transmission could get involved with, please get in touch. Contact details for the Community Liaison Manager can be found on page 16).

Example projects

Argyll Coast and Countryside Trust (ACT)

Argyll's rainforest is a unique and rare habitat of ancient and native woodland. This collaboration with ACT will help deliver our compensatory tree planting and BNG commitments in Argyll. It also aligns with ACT's woodland planting ambitions, supporting its charitable objectives including biodiversity gain, health and wellbeing, improvement for local people, outdoor learning opportunities and climate change workshops.

Argyll Coast and Countryside Trust (ACT)

Thurso South substation and The Bumblebee Conservation Trust

We created approximately 10 hectares of bee-friendly habitat to support the pollination of the rare endemic great yellow bumblebee.

This contributed to wider conservation efforts for this bee species. A collaboration with The Bumblebee Conservation Trust facilitated research on food availability for bumblebees, identifying the need for a diverse seed mix containing key flowering species to enhance early, main and late food supply to support the full lifecycle of bumblebees.

Thurso South substation and The Bumblebee Conservation Trust

Project timeline

2022
- Project need and scope confirmed

2023
- Consultation 1 – Introducing reconductoring - May 2023
- Environmental and engineering surveys

2024
- Environmental Impact Assessment Scoping
- Environmental and engineering scoping continued
- Consultation 2 - OHL and substations
- Environmental Impact Assessment/EA report prep
- Section 37 Planning Application submitted

2025
- Section 37 Planning Decision Received
- If Planning Consent granted, complete discharge of Planning Conditions

2026
- Proposed construction start - 400kV Upgrade

2027
- Construction works ongoing

2028
- Main Construction works complete – awaiting energisation

2029
- Main Construction works complete – awaiting energisation

2030
- Scheme energistation

Notes

Notes

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

Previous consultation highlighted the need for an extended feedback period. In response to this, we will extend our usual 28 days feedback period.

We will accept feedback from now until 15 April 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: https://bit.ly/42AUk4C

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'll be actively looking to mitigate the impacts of the site 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.

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.

Recite me

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

Rhiannon Merritt
Community Liaison Manager

SSEN Transmission
10 Henderson Road,
Inverness, IV1 1SN

E: tkup@sse.com

Additional information

The best way to keep up to date is to sign up to project updates via the project webpage: https://bit.ly/42AUk4C

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 project information provided explained the need for the Alyth to Tealing 400kV Overhead Line Upgrade works?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. **Have we adequately explained the different parts of the overall project clearly?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. **Do you support our decision to upgrade the Alyth to Tealing Overhead Line?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q4. **Do you feel we have given enough consideration to potential impacts on the Environment that this project may have?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q5. **Are there any additional factors, issues or concerns which you wish to bring to the attention of the Project Team regarding our proposal?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q6. **Following your review of the information displayed today, how would you rate your knowledge of the Alyth to Tealing 400kV Overhead Line Upgrade Works?**

☐ Very well informed ☐ Know a lot ☐ Know a little

☐ Know very little ☐ Know nothing at all

Q7. **Do you have ideas for biodiversity improvement projects in your local area that SSEN Transmission could get involved with?**

☐ 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 **stakeholder.admin@sse.com** 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 **ssen-transmission.co.uk/privacy**

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: SSEN Transmission, 10 Henderson Road, Inverness, IV1 1SN **Email:** tkup@sse.com
Online: https://bit.ly/42AUk4C
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: **https://bit.ly/42AUk4C**

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.