



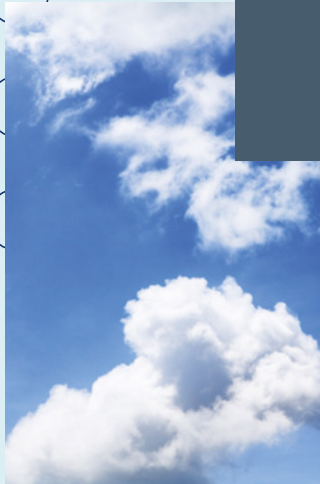
Scottish & Southern
Electricity Networks

TRANSMISSION

Carnaig (Loch Buidhe area) 400kV substation

Pre-Application Consultation

June 2024

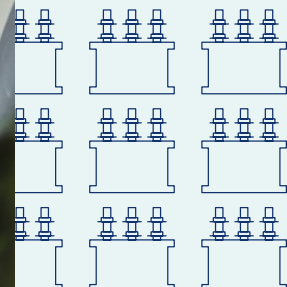


Contents

Powering change together	1	The story so far	8
The Pathway to 2030	2	Feedback	10
Project overview	4	Project timeline	12
3D Visualisations	5	Have your say	13
The substation site	6		

The consultation event will be taking place on:

Monday 10 June, 3:30pm – 8:30pm
Bonar Bridge Community Hall, IV24 3EA



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 50Giga Watts (GW) 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

More information about the policies and documents driving the need for the energy system for the future can be found here:

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 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. So, we're 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. 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 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 the North of Scotland?

The north of Scotland will play a key role in meeting these goals. The extensive studies that informed the ESO's Pathway to 2030 Holistic Network Design confirmed the requirement to reinforce the onshore corridor between Spittal and Beaully, and an offshore subsea cable link between Spittal and Peterhead.

Providing a 400kV overhead line and high voltage subsea cable (HVDC) connection between these sites provides the significant capacity required to take power from

large-scale onshore and offshore renewable generation (mainly wind farms), connecting into the north of Scotland before transporting power to areas of demand.

As part of these plans, we're proposing to build a new 400kV overhead line (OHL) between Spittal and Beaully via Loch Buidhe. This requires three new 400kV substations to be constructed at Spittal, Loch Buidhe and Beaully to enable future connections and export routes to areas of demand. In addition, high voltage converter stations are also required to convert AC electricity to DC (and vice versa), from the offshore subsea connection from between Spittal and Peterhead. These connections will also allow offshore and onshore renewable generation to connect to the reinforced electricity network.

As such, these projects have been highlighted as critical to enable the delivery of the UK and Scottish governments' 2030 net zero targets, with a requirement for accelerated development and delivery.

Future network investment requirements

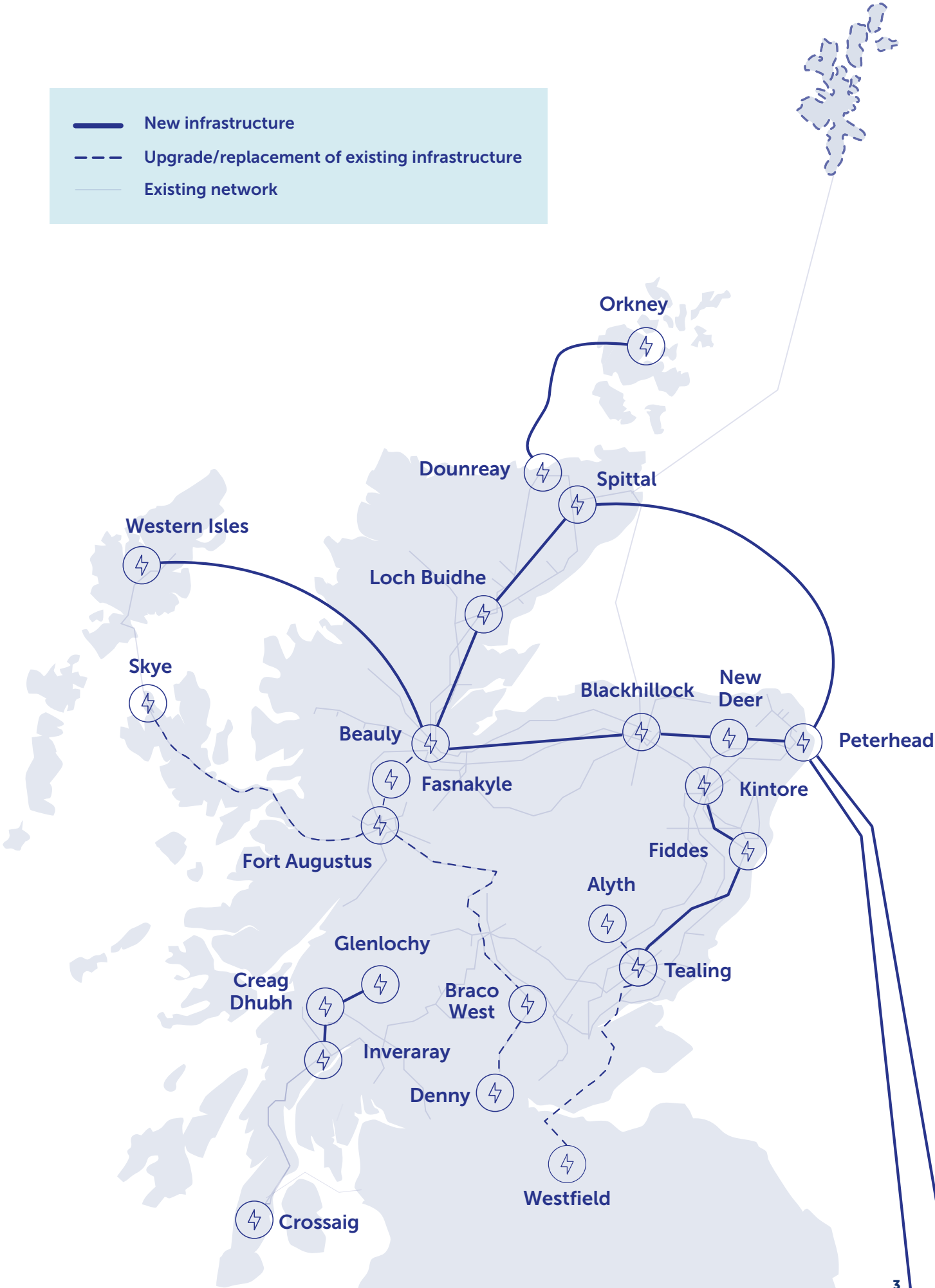
Our 2030 targets are the first step on the transition to net zero. The UK Government has a target to decarbonise our electricity system by 2035 and fully decarbonise our economy by becoming net zero by 2050, with the Scottish Government committing to net zero five years earlier, by 2045.

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 has now been outlined in the independent Electricity System Operator, National Grid ESO's, 'Beyond 2030' report, published in March this year. For the north of Scotland, the ESO's plan recommends several new and upgraded onshore and offshore reinforcements that the ESO has assessed are required to help deliver net zero targets. These projects, which will be subject to extensive public consultation, are at the very early stages of development and further details will be set out in due course.

Carnaig (Loch Buidhe area) 400kV substation

- New infrastructure
- - - Upgrade/replacement of existing infrastructure
- Existing network



Project overview

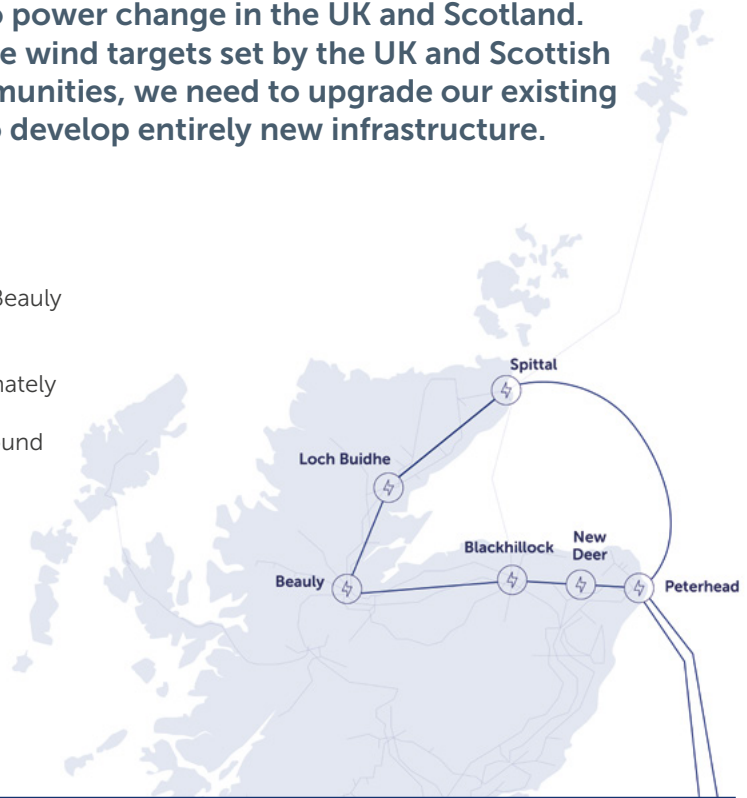
We're leading some exciting projects to power change in the UK and Scotland. To support the delivery of 2030 offshore wind targets set by the UK and Scottish Governments, and to power local communities, we need to upgrade our existing network. In some key areas, we need to develop entirely new infrastructure.

Spittal - Loch Buidhe - Beaulay 400kV overhead line (OHL)

Extensive studies have confirmed the need for a new 400kV transmission connection between Spittal and Beaulay connecting into a substation site near Loch Buidhe.

This connection will be provided via an OHL approximately 170km in length and consisting of steel lattice towers (commonly referred to as pylons) likely to average around 57m in height. The proposed 400kV OHL between Spittal - Loch Buidhe - Beaulay, forms part of the Accelerated Strategic Transmission Investment (ASTI) projects.

The new 400kV OHL will connect into the proposed new 400kV substations at Spittal, Loch Buidhe and Beaulay. Each substation will connect to the existing substations in each of the areas.



Carnaig 400kV substation

This consultation is related to our proposed Carnaig 400kV substation.

The project will involve construction of a new outdoor 400kV Air Insulated Switchgear (AIS) substation located northeast of Bonar Bridge, adjacent to the existing Loch Buidhe substation.

With provision to enable future renewable energy generation to connect to the transmission network, Carnaig 400kV substation will connect to the Spittal to Beaulay 400kV OHL and to the existing Loch Buidhe substation via approximately 600m of underground cable (UGC).



Indicative 3D model of Carnaig 400kV substation

3D visualisations

We understand that local stakeholders need to be able to visualise what the development may look like in their local area.

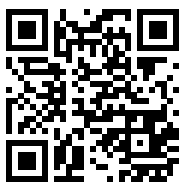
We've commissioned 3D visualisations which model the proposed substation into the local landscape to help the understanding of the proposals in terms of the visual impact, distance, and height.

The following are some images taken from the 3D model created for the Carnaig 400kV substation from a range of different topographies. To get a better sense of the proposals in full, a visualisation portal including flythrough video is also available to view from the project webpage and our consultants, 3D Webtech, will be assisting us at our consultation events with copies of the model that attendees can interact with during the events.

The layout and colour of our proposals may change based on feedback and further refinement of the design, if that happens, we'll update our model and video and share this on our webpage and with you at the next event.

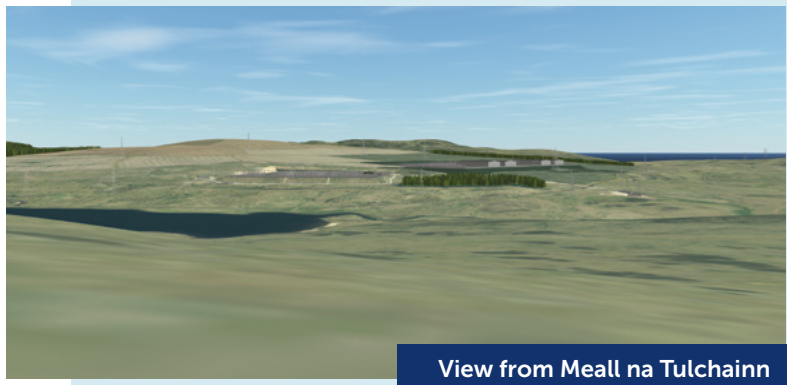
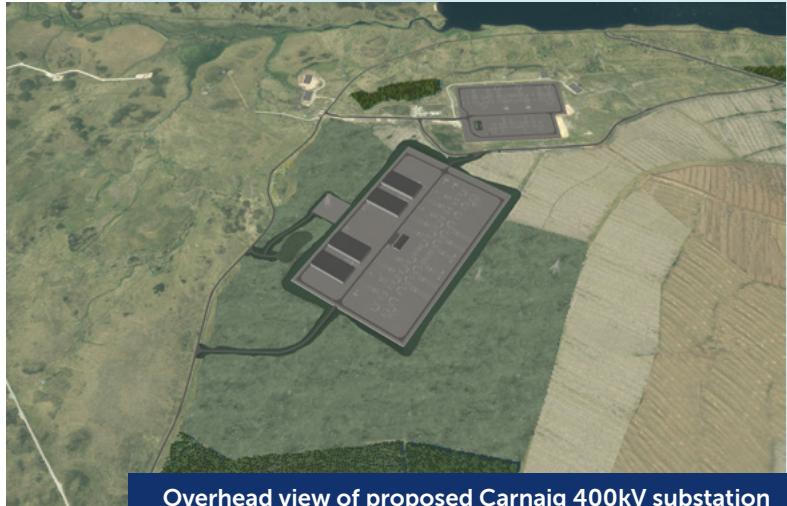
Photomontages

Photomontage visualisations will also be produced as part of the Environmental Impact Assessment (EIA). Once the EIA is completed and submitted as part of our planning application, we'll ensure these photomontages are available to view.



Find out more

Scan the QR code with your smartphone to view on the project website.



The substation site

About the site

Following site selection consultation, in February 2023, we advised within our Report on Consultation that site option 3 had been selected as our proposed site for the substation ahead of our first Pre-Application Consultation event earlier this year.

The site is located adjacent to the existing Loch Buidhe substation and is considered the environmentally and technically preferred option. Clustering development adjacent to the existing substation limits the potential for landscape and visual impact in the wider area. In addition, habitat is of lower value and the site is further from the proposed Gavary wind farm.

Although within the Strath Carnaig and Strath Fleet Moors SPA and SSSI, historical bird surveys suggest this area is not heavily favoured by nesting hen harrier due to the closed canopy location so this may not present a significant constraint. Bird surveys will be undertaken and a Habitat Regulations Appraisal undertaken to assess this risk.

This site would require the shortest connection to the existing substation and can make use of the access road for the existing Loch Buidhe substation.

What size is the site?

The substation footprint will be approximately 530 x 324 meters and will consist of:

- Construction of a new outdoor, AIS, 400kV substation complete with 400kV double busbar arrangement and all associated ancillary works
- Installation of new super grid transformers (SGT) and reactive compensation equipment
- A new substation control building

There will also be

- Access roads and areas for drainage, landscaping/screening and habitat enhancement
- Temporary areas will also be required during construction for laydown and welfare.

What else will the development consist of?

Drainage

The following hydrological aspects are being considered:

- Private water supplies
- Groundwater dependent terrestrial ecosystems (GWDTE's)
- Potential for flood risk

Key sensitive receptors are likely to be:

- All waterbodies downstream of and in hydrological connection to the Site and construction works
- Hydrologically connected statutory designated receptors including Strath Carnaig and Strath Fleet Moors SPA, Strath Carnaig and Strath Fleet Moors SSSI, Mound Alderwoods SAC and SSSI and Torboll Woods SSSI
- Potential hydrologically connected private and public water supplies
- Potential hydrologically connected GWDTEs
- Peat
- The Northern Highlands Groundwater Body.

Temporary compounds

Temporary construction compounds and laydown areas will be located in the vicinity to support the construction phase. Additional temporary construction compound and laydown areas, if needed, will be identified by the construction contractor prior to commencement of works.

Felling and re-planting

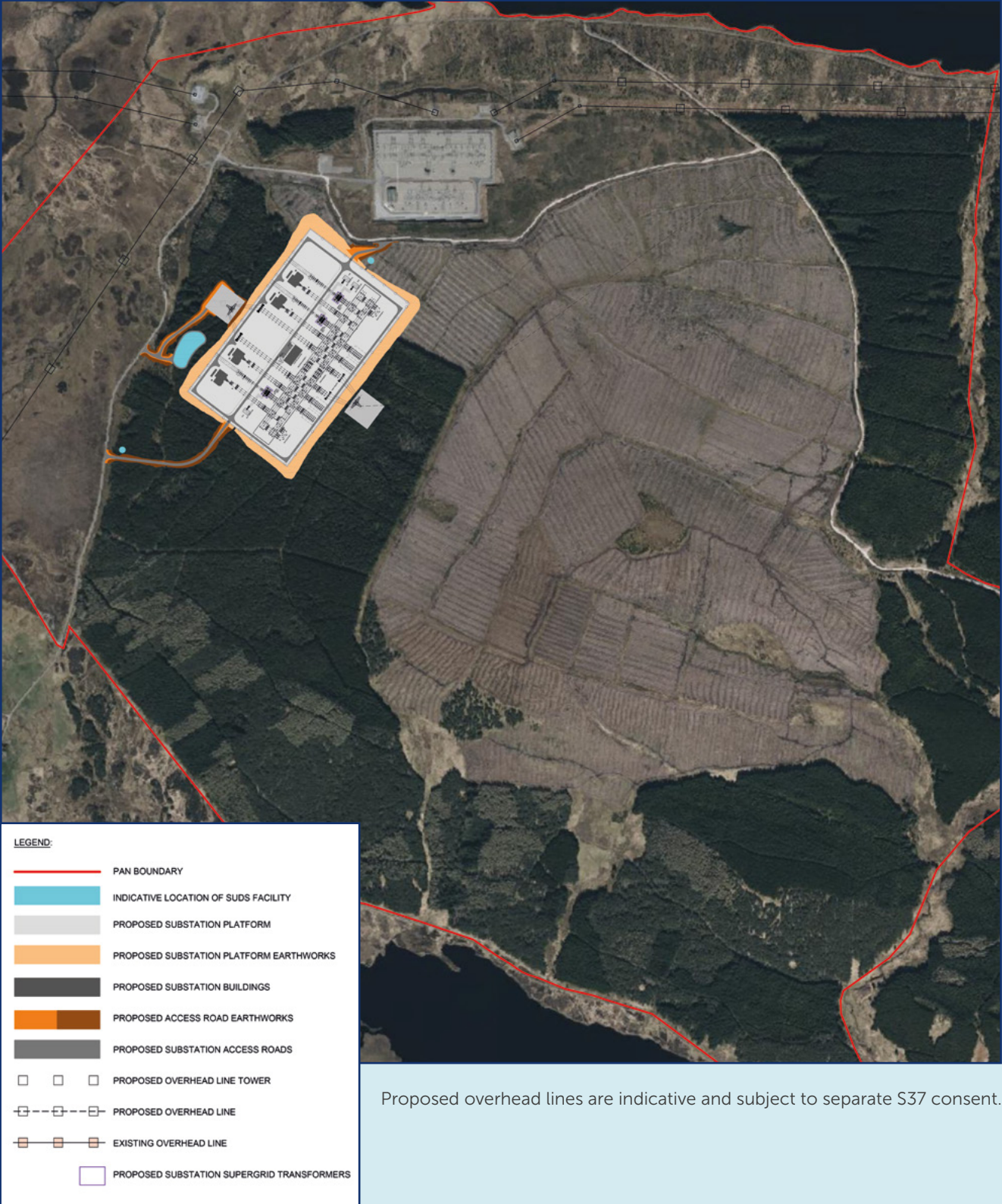
The proposed site lies within an area of commercial forestry plantation dominated by Sitka spruce and Lodgepole pine of variable quality. Areas of native pinewood of commercial plantation nature are found on the Southern boundary of the proposed site. There are no ancient or native woodland within the project boundaries.

Felling areas of commercial plantation will be required as part of the development, loss of this woodland will be compensated for by planting an equivalent area of new woodland. The replanting/compensatory planting proposal will comply with UKFS and associated guidelines which may apply, or any other such replacement standard applied by the planning (consenting) authority.

Planting will be supported by an approved replanting plan and shall identify, location, species and woodland design, timing, maintenance, monitoring, and reporting standards.

A woodland management plan will be produced to support the planning application.

Carnaig (Loch Buidhe area) 400kV substation



Proposed overhead lines are indicative and subject to separate S37 consent.

The story so far

Feb '23



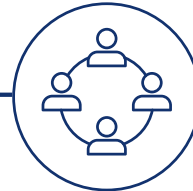
We introduced this project in February 2023, consulting on site selection options, as well as route options for the overhead line from Spittal to Beaully.

Apr '23



The consultation closed on 14 April 2023, with 96 written responses received referring to the Loch Buidhe area substation.

Mid '23



Throughout Spring and Summer, we carried out a range of stakeholder meetings, listening to localised concerns and ideas and answering any further questions.

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 and to allow you to see what the proposed substation will look like. These will all also be available to view and download from our project website.

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).



Dec '23



We published a Report on Consultation, confirming our proposed site location and showing how the option taken forward to the next stage has been informed by this process.

Early '24



We submitted our Proposal of Application Notice (PAN) to Highland Council on 26 January.

Mar '24



The first of two sequential public consultation events triggered by the submission of the (PAN) was held in Bonar Bridge.

What we are seeking views on

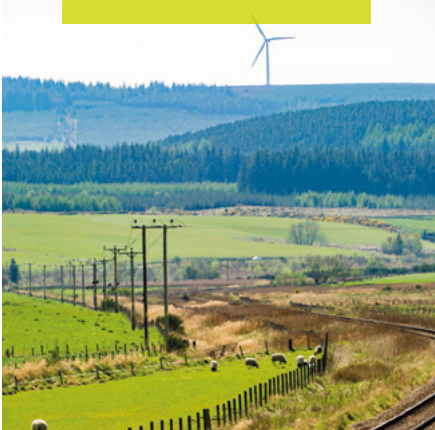
We want you to share your thoughts and opinions on our plans, where you think we can make improvements, concerns about the impact of our work and what you think of the refinements or changes we've made.

This event is the second of two planned, sequential, public consultation events following the submission of the Proposal of Application Notice (PAN). The PAN submission triggered the initial formal Town and Country Planning (major application) consultation process for this site, including the 12-week (minimum) pre-application consultation period.

Following the initial consultation event, the project team has sought to ensure that comments or concerns raised have informed, where possible, the primary considerations for the designs as they have progressed. This includes substation layout design, landscaping enhancement and screening. Outside of the formal consultation periods and events, we have continued to provide a dedicated webpage for the projects and liaise with a wide range of stakeholders to help inform the development and design.

We are therefore holding this feedback event to present our proposed substation design, which has been partly informed by stakeholder feedback, and have set out our responses to feedback received to date.

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



Feedback

Following submission of the PAN in January 2024, the first of two pre-application consultation events were held at Bonar Bridge Community Hall on 18 March 2024. The event had a total of 66 attendees.

During the 8 week feedback period which closed on 28 April 2024, 1 response was received specific to this project.

During the consultation event, community members posed some general questions covered in our Frequently Asked Questions (FAQ) page and additional handouts such as project need, why all infrastructure cannot be placed offshore, sustainability considerations and compensation. More information regarding these topics and other FAQs can be accessed at: ssen-transmission.co.uk/2030faqs

We have included event feedback through the PAN and pre-application process, as well as design feedback, within the following pages. They are:

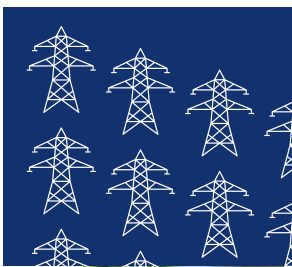
Event feedback	Response
<p>Holistic overview Requests were received for information on all developments indicating the full extent of developer proposals in the area.</p>	<p>A list of projects that hold contracts for Transmission Entry Capacity (TEC) with National Grid, the Electricity System Owner is available from their website: nationalgrideso.com/data-portal/transmission-entry-capacity-tec-register.</p> <p>We know that residents are keen to understand the full extent of renewable developments being proposed in the area.</p> <p>Applications to connect to the transmission network in our license area are made to National Grid ESO and undergo a lengthy process of assessment before we begin to develop a network connection for those developments.</p> <p>We aim to be transparent about the renewable developments looking to connect to our network but are not permitted to disclose any details of these developments until they are in the public domain.</p>
<p>Wildlife Breeding birds and loss of habitat.</p>	<p>Environmental Impact Assessment (EIA) survey work is currently underway. Where sensitive habitats and species are present, we will seek to avoid them wherever possible, but where unavoidable suitable mitigation measures will be identified and agreed in consultation with the Planning Authority and NatureScot.</p> <p>Where mitigation measures are agreed, these will be passed onto the contractor in the form of a Commitments Register, supported by our own Species Protection Plans and General Environmental Protection Plans, to ensure that the measures are implemented as required. These measures will also form part of the Construction Environmental Management Plan (CEMP) for the project.</p>



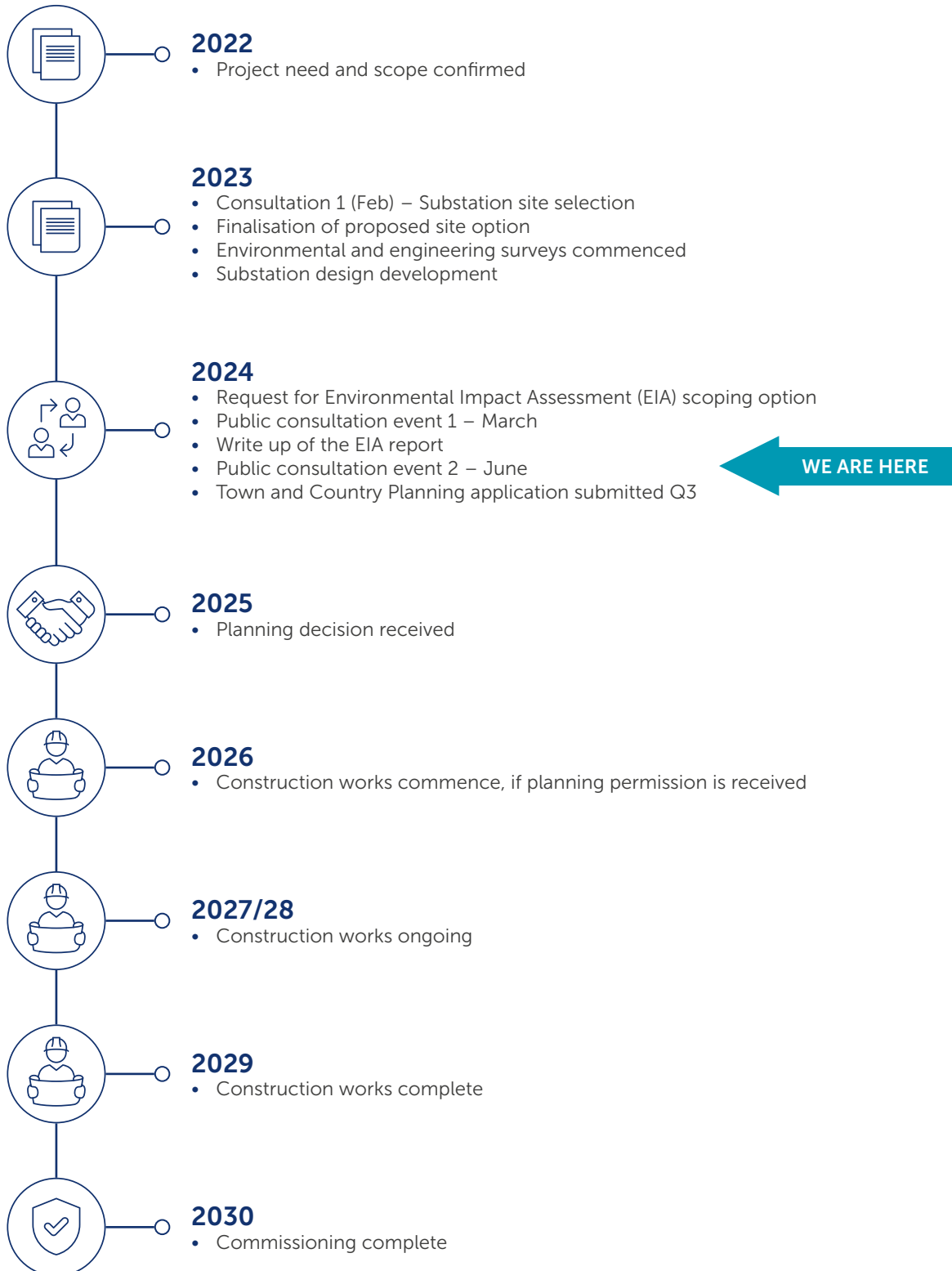
Find out more

Scan the QR code with your smartphone to access our FAQs.

Event feedback	Response
<p>Noise From the construction phase and operational substation was raised during the consultation event.</p>	<p>We recognise that noise impacts during construction and operation of our assets can be a concern to residents.</p> <p>A Noise Impact Assessment is currently being prepared to support our planning application, which will assess the potential impact from construction and operational noise and, where necessary propose appropriate mitigation measures that will be agreed with the Planning Authority.</p> <p>The Proposed Development would be required to meet noise limits set by the Planning Authority.</p> <p>Appropriate mitigation would be implemented to ensure these limits are met at all noise sensitive receptors. Noise emitting equipment such as Synchronous Compensators will be housed to ensure that noise emissions are at a minimum.</p> <p>The Environmental Impact Assessment (EIA) which will include details on the background noise monitoring will be publicly available when the application is submitted to the Planning Authority.</p> <p>A Construction Environmental Management Plan (CEMP) will be produced that will detail the mitigation and management measures required to minimise environmental impact from the construction phase of the development. The CEMP forms a framework within which the measures will be implemented throughout the project.</p>
<p>Environmental screening Comments were received during the consultation event regarding screening options.</p>	<p>The landscape strategy for the development is currently being finalised and will be informed by the Landscape and Visual Impact Assessment (LVIA) undertaken as part of the Environmental Impact Assessment that will be submitted with our Planning Application.</p>
<p>Roads Local residents raised concerns regarding road safety including volume and speed of traffic.</p>	<p>A Construction Traffic Management Plan (CTMP) is currently in development and will be included in the Planning Application. This will detail expected traffic volumes and will be utilised during detailed design to optimise vehicle routes to and from the site. One of the main aims of the CTMP is to identify site specific risks, and those associated with the movement of traffic and pedestrian's.</p>



Project timeline



Have your say

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

The feedback period

We intend to submit our planning application in Autumn.

Our formal feedback period will close on **22 July 2024** however we will welcome final comments from members of the public, statutory consultees and other key stakeholders regarding our proposals until we submit our planning application.

How to provide feedback

Submit your comments and feedback by emailing or writing to your Community Liaison Manager.

What we're seeking views on

During our last public consultation event in March, we wanted to know your thoughts on our project plans, where you thought we could make improvements, and any changes and refinements we'd made.

We are now asking for any final comments or feedback ahead of submitting planning applications for the Carnaig 400kV substation project. It would be helpful to share any opportunities to deliver a local community benefit you would like us to consider.

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 and if there are any opportunities to deliver a local community benefit you would like us to consider.



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

Martin Godwin

Community Liaison Manager

Scottish and Southern
Electricity Networks,
10 Henderson Road,
Inverness, IV1 1SN

E: slbb@sse.com
T: 07467 399 592



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/carnaig



You can also register for updates at our consultation events, just ask our staff at the welcome desk.

You can also follow us on social media

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