

Abernethy Substation Extension

July 2020

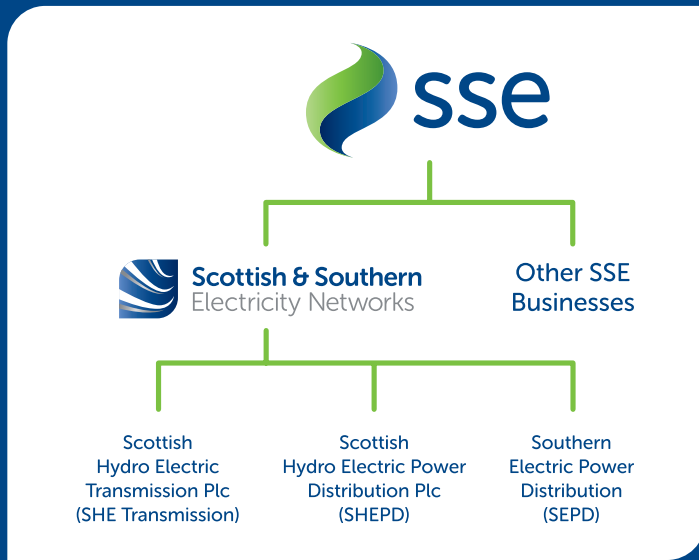


Scottish & Southern
Electricity Networks



Who we are

We are Scottish and Southern Electricity Networks, 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 plants.

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.

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.

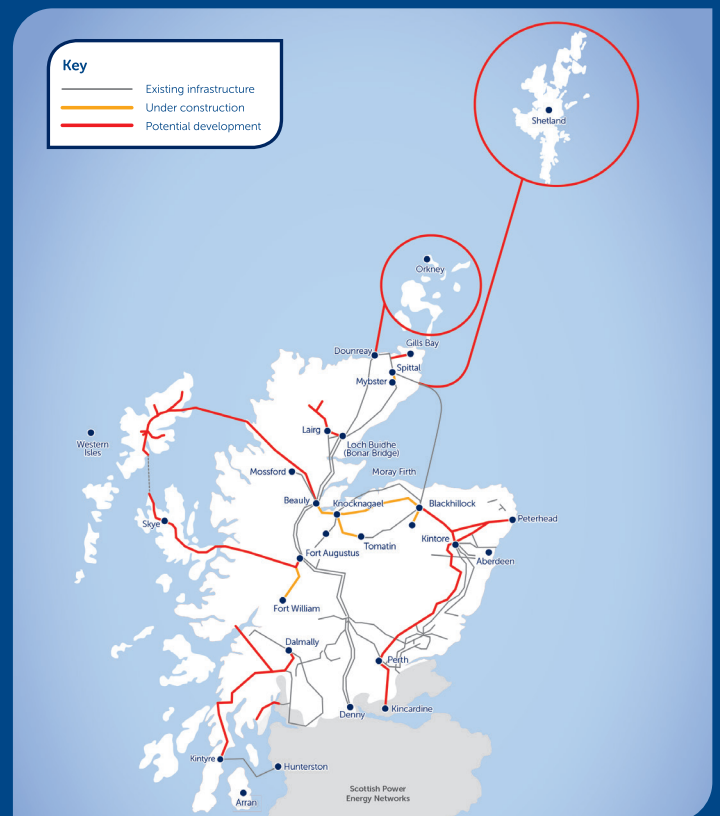
The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link 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.

Overview of Transmission Projects



Coronavirus: Covid-19 pandemic

As transmission network operator in the north of Scotland, we play a vital role in powering the country, providing a safe and reliable supply of electricity at local, regional and national level, on which the people and organisations whose work is critical to the Coronavirus response depend.

Our employees are working 24/7 to keep the network running, providing an essential service transporting energy to where it is needed. Working in some of the remotest parts of the UK, our employees and supporting contractors need to be able to move around the UK to ensure this work continues.

The Covid-19 outbreak and the necessary social measures introduced by government are unprecedented in recent times and we know that for the customers and the communities we serve, this may lead to concerns about the essential services we all rely on. Since the outbreak we have been collaborating daily with UK and Scottish Governments and local authorities across our network to ensure the continued safe and reliable supply of electricity.

In the absence of specific guidance and with companies understandably expected to use their judgement on what is critical, we are currently deeming critical activity to include

work that is essential to the safe and reliable supply of electricity in the medium term, which includes meeting our regulatory obligations until the end of the coming winter. In conducting this critical work, there will be the need to be active on certain construction sites. We will continue to engage constructively with all relevant authorities, adapting our advice in line with what is clearly an evolving situation.

Whilst we are still present at some sites, all staff that can work remotely are now working from home, actively reducing the number of staff onsite. We are mindful of the current environment and our numbers and activities are much reduced as a consequence of this. For those based at site, increased hygiene and social distancing measures are being adhered to as per Scottish Government guidelines.

We also deem it critical to ensure that we continue to submit planning applications for future developments which are deemed essential to operating the transmission network in a safe and secure manner for the future. It is for this reason that we are continuing with our current timescales regarding the proposed upgrade to the existing Abernethy Substation.

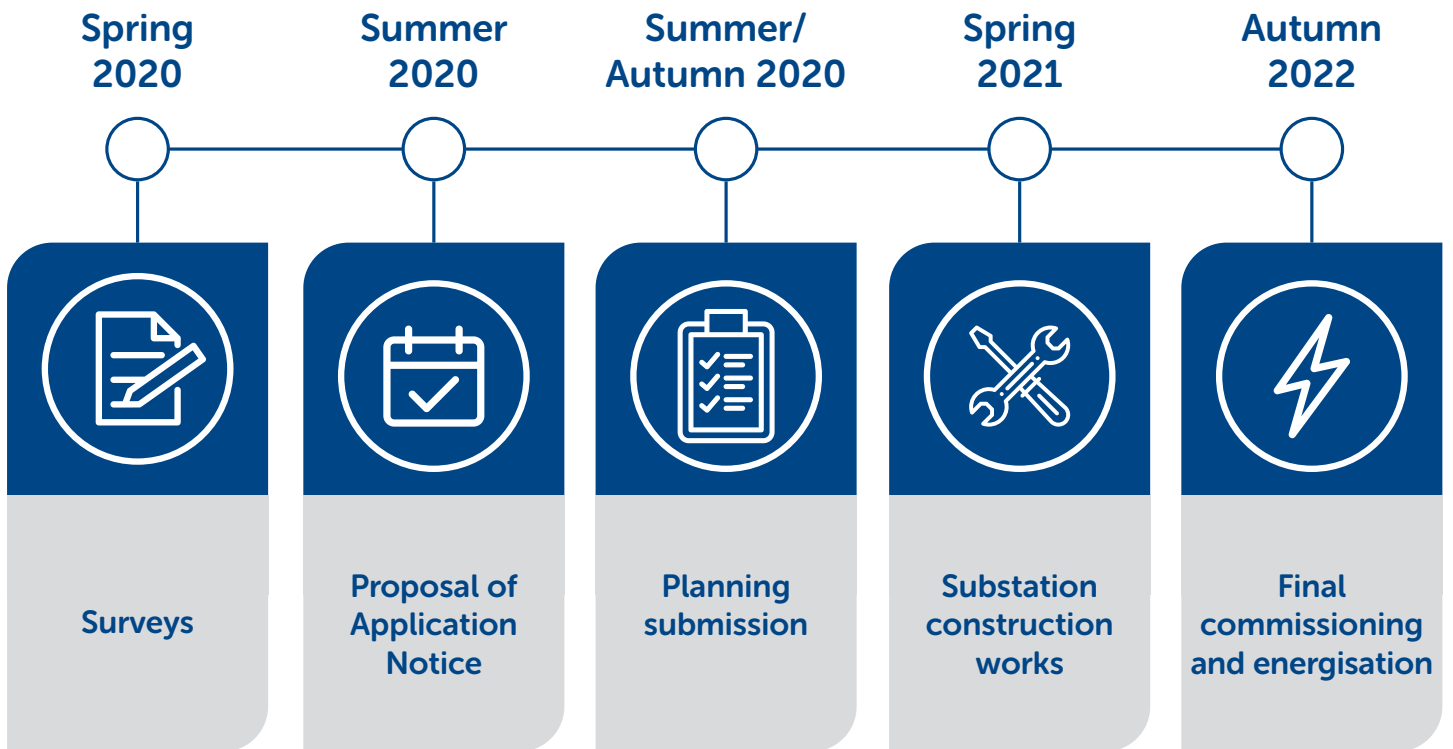
We are committed to continuing quality engagement with all our stakeholders as we all respond to the challenges facing us in the weeks and months ahead. You have our commitment that we will keep you up to date on what this means for our customers, communities and stakeholders.

Project overview

Scottish Hydro Electric Transmission plc (SHE Transmission) intends to submit an application for planning permission under the Town and Country Planning (Scotland) Act 1997 (as amended) to construct and operate a 132 kilovolts (kV) extension to the existing Abernethy substation.

There is insufficient head room capacity on the existing substation to enable the connection of 57 megawatt (MW) of new renewable generation by October 2022.

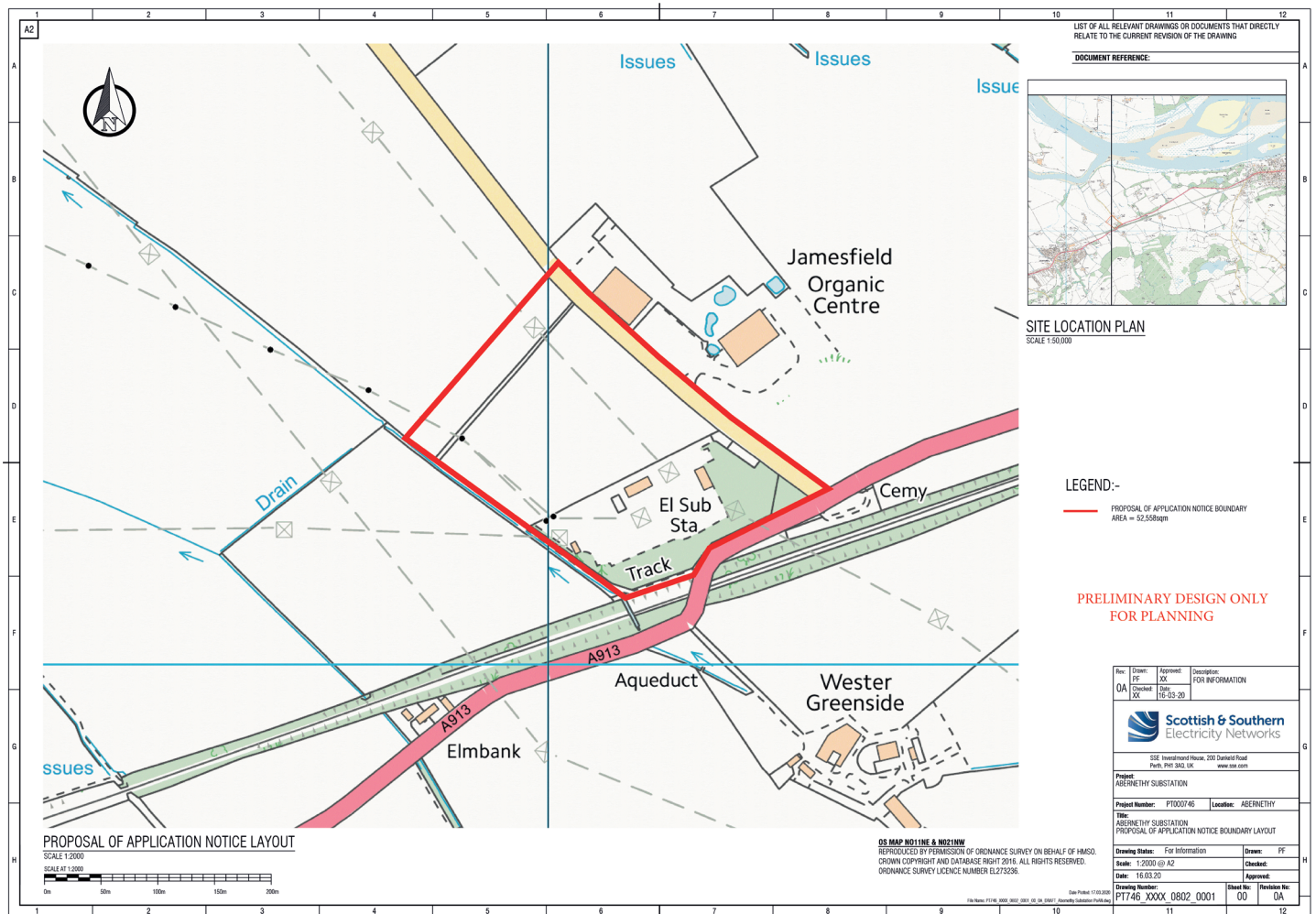
Therefore, SHE Transmission is seeking planning permission for the installation of a 132kV extension, comprising the replacement of the existing 60 mega volt amps (MVA) transformers with 120MVA transformers and associated electrical infrastructure.



Planning application

We are intending on submitting our Town and Country Planning (Scotland) Act 1997 application for consent in Summer/Autumn 2020. This will follow our review of the feedback we receive during the consultation period. A Proposal of Application Notice (PoAN) has been submitted to Perth & Kinross Council in June 2020. A period of 12 weeks must elapse prior to submitting the planning application, ensuring we consult with affected communities, and take views onboard during this period.

Proposal of Application Notice Redline Boundary



EIA Screening

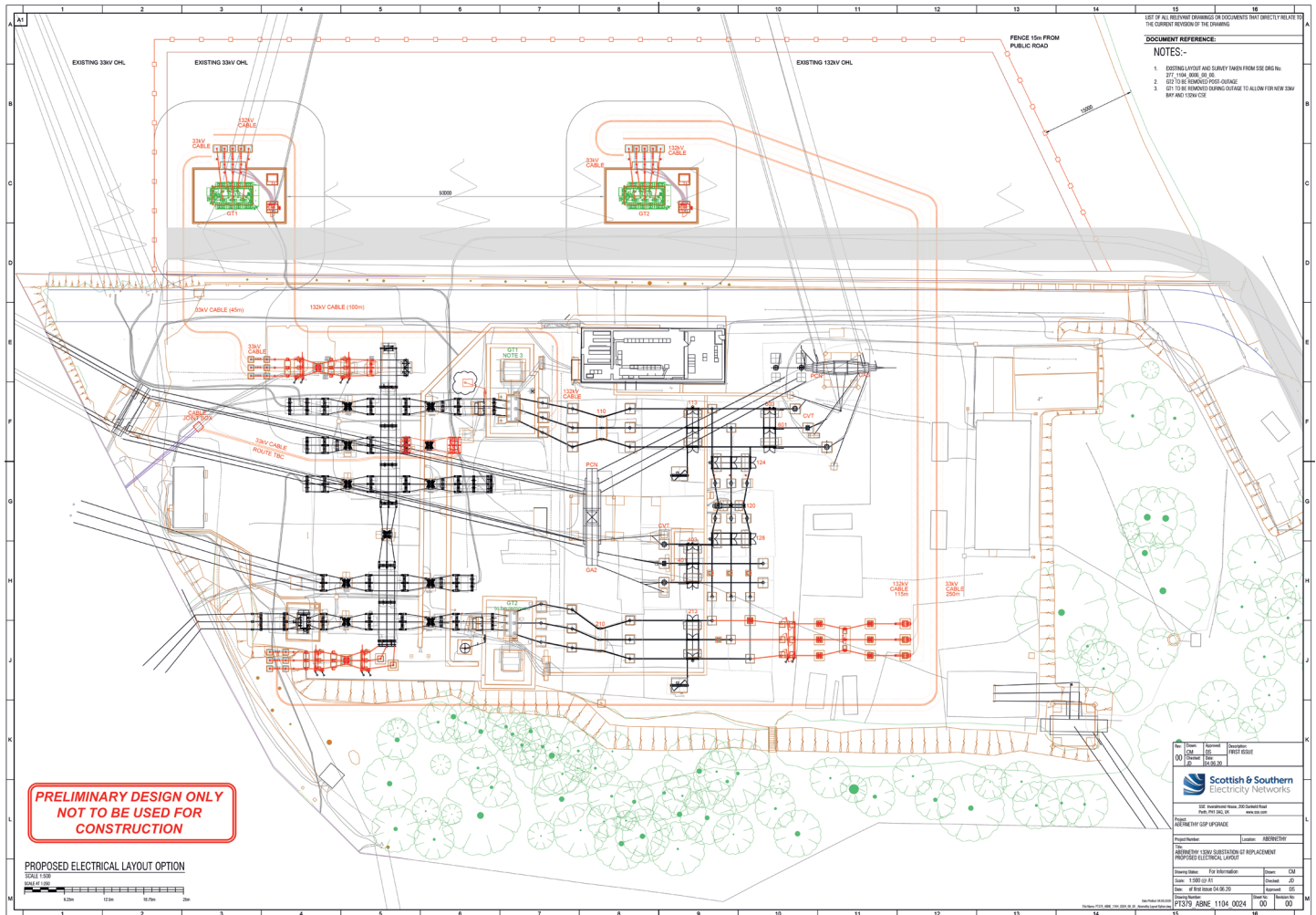
A Screening Opinion has been sought from Perth & Kinross Council under the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, to determine whether the anticipated likely environmental impacts of the proposed substation are significant to such an extent to warrant classification as 'Environmental Impact Assessment (EIA) Development'.

It is the decision of Perth & Kinross Council that an EIA will not be required as part of our planning application for the substation extension. Nevertheless, a full voluntary Environmental Appraisal (EA) is being undertaken to support the consent applications, including a number of specialist studies to consider the potential environmental effects of the proposed substation and associated works, such as impacts upon biodiversity, cultural heritage, drainage and the water environment, and impacts on amenity.

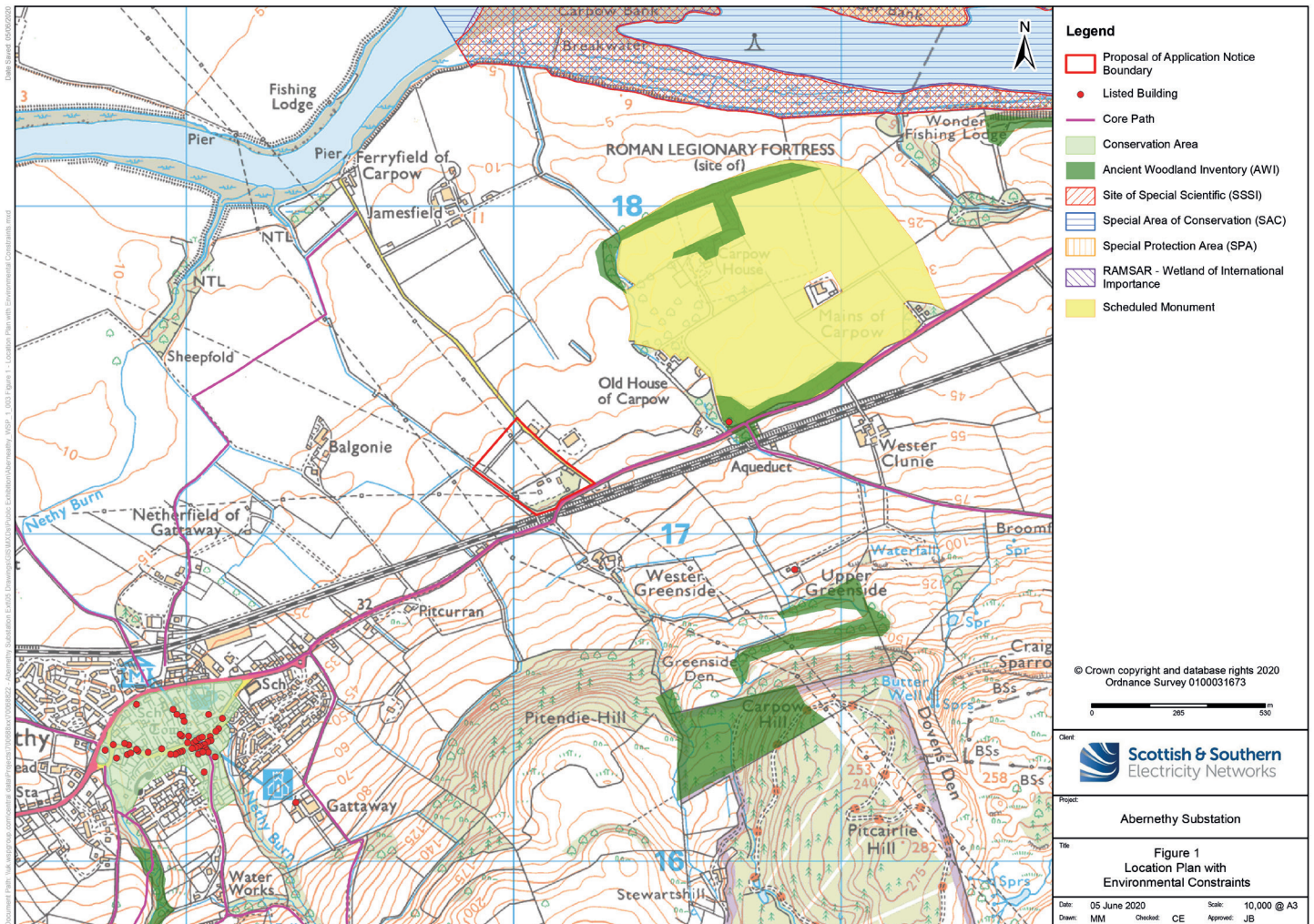
Project details

SHE Transmission are proposing the replacement of existing grid transformers (GTs) in the field to the North of Abernethy substation. This will comprise installing larger 120MVA transformers and associated 132kV outdoor switchgear which will connect to the existing 132kV equipment. Following the successful commissioning of the new substation extension, the old plant will be removed and recycled.

Abernethy 132kV Substation GT Replacement Proposed Electrical Layout



Project location plan with environmental constraints



Key considerations

Landscape and visual

A landscape and visual impact appraisal (LVIA) is currently being undertaken using design information. The LVIA will be one element that informs the final design, as well as ensuring appropriate mitigation is incorporated. Appropriate screening and bunding will be implemented to lessen the visual impact of the proposed development. The proposed measures are likely to include the use of the existing tree line and planting a variety of trees around the Proposed Development to help screen it from view.

SSEN Transmission have committed to delivering Biodiversity Net Gain for all projects by 2025 and 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards as one of our main sustainability goals. The planting and screening will be designed to take this into account utilising species rich grassland within the site and native species, hedgerows and tree planting to screen and enhance the Site.



Photo above shows Wildflower Meadow one year after seeding recently constructed substation in Caithness.

Transport, infrastructure and construction methods

Extension of the substation will require plant and machinery, along with vehicles to transport materials and workers to the site. We anticipate that normal construction traffic will utilise the existing road infrastructure. We have undertaken investigations to confirm that no improvements are required. A construction traffic management plan shall be produced to outline and manage vehicle movements associated with the development. The largest plant items to be delivered to the substation will be two 132kV grid transformers.

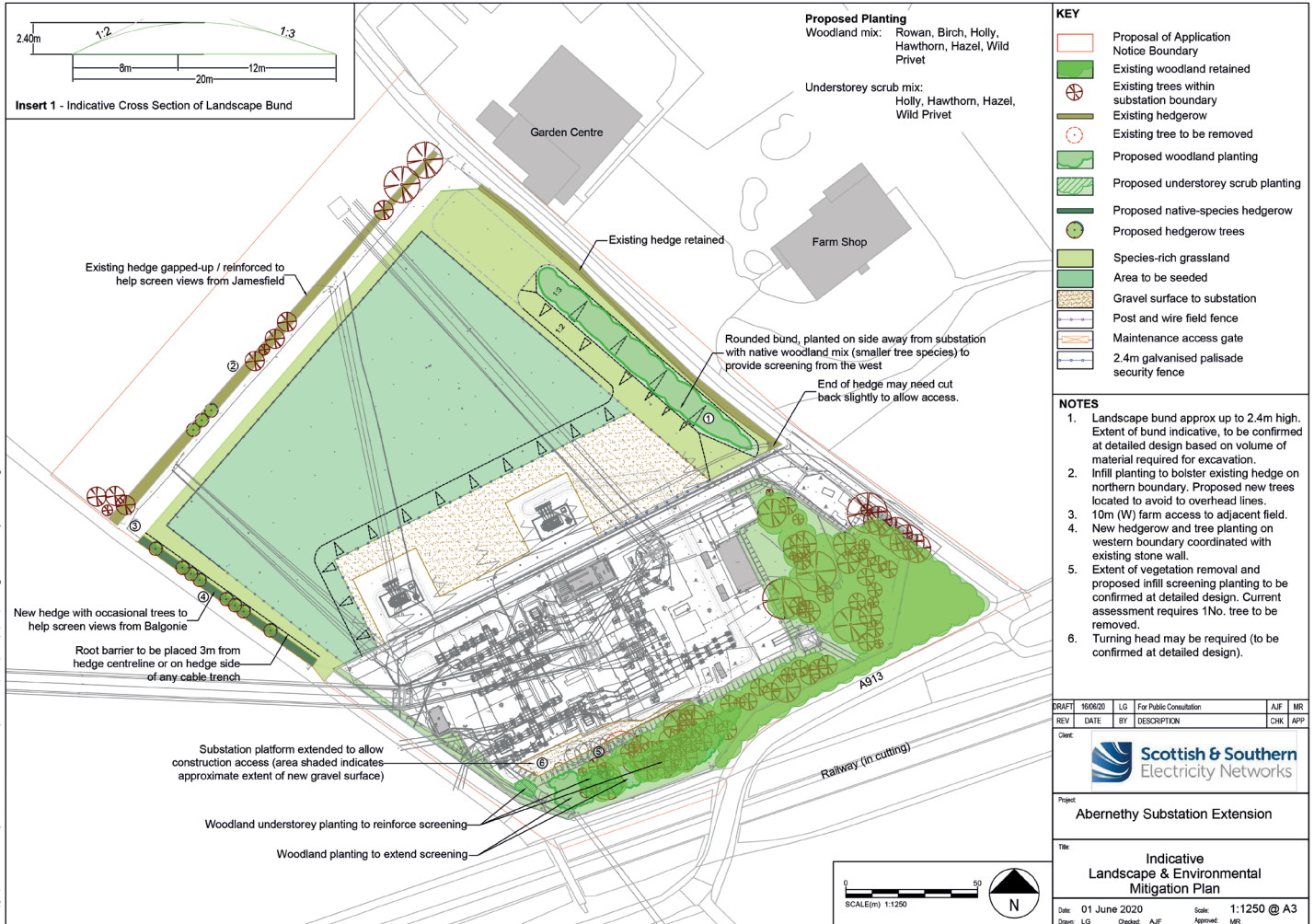


Earthworks

Building the extension to the substation platform for the two transformers will require a quantity of stone. Our intention is to retain as much material on site as possible. This would mean there would be a mass balance of material on site to minimise vehicle movements in the local area, however local sources of stone may be required as part of our development

works for the platform design. The volume of stone required and vehicle movement numbers will be established during the detailed design stage. Material removed from within the existing substation area will be utilised in creating landscape bunds to screen the new extension.

Landscape mitigation plan



Environmental impacts

The following potential environmental impacts will be assessed as part of the Environmental Appraisal (EA), which will be submitted as part of the planning application to Perth & Kinross Council in summer/autumn 2020. The EA will be available for members of the public to view and comment on as part of the planning application supporting information, following submission of the consent applications.



Landscape and visual

The appearance and character of the landscape is already influenced by transmission infrastructure including the existing Abernethy substation, steel lattice towers and overhead lines. The proposed development would be seen in relation to this.

Planting of shrubs, hedgerows and trees will be incorporated into the design to provide screening of the proposed development and to ensure the overall character of the area isn't diminished. Bunding will be introduced at the eastern boundary to reinforce screening from close-distance receptors.

A landscape and visual assessment will be carried out to understand how the proposed development will be viewed within the surrounding area, to identify any significant effects and propose recommendations to mitigate these effects.



Cultural heritage

An appraisal of the site and its surrounding area has been undertaken to understand the potential effects on the historic environment. There are no designated assets identified within the proposed development boundary. Carpow Roman Fortress scheduled monument and the category C historic listed building of Carpow Lodge Gatepiers are the nearest designated assets; located approximately 520m to the east of the proposed development.

There are no known undesignated heritage assets within the site, although 25 assets were identified within 500m surrounding the site which date from the prehistoric period through to the modern period. Consultation will be carried out with Perth & Kinross Heritage Trust to identify any on-site archaeological investigation that would be required before construction works commence and if required Written Scheme of Investigation would be prepared which would set out a strategy for archaeological mitigation in advance of the construction works.



Terrestrial, ecology & ornithology

The site has been surveyed to identify habitats, protected species and birds. The site is predominantly an arable field surrounded by species-poor hedgerows and the existing substation, the surrounding area is dominated by agricultural land. A biodiversity net gain condition assessment was also undertaken concurrently with the Phase 1 habitat survey which allows the biodiversity units of the site to be calculated.

The site is not located within any sites designated for their natural heritage. The Firth of Tay and Eden Estuary Special Area of Conservation (SAC), Firth of Tay and Eden Estuary Special Protection Area (SPA), Inner Tay Estuary Site of Special Scientific Interest (SSSI) and Firth of Tay and Eden Estuary Ramsar site are all located approximately 1.5km downstream of the site.

These sites are designated for supporting various breeding and non-breeding birds as well as for the estuary and intertidal mudflats and sandflats.

Brown hare was recorded on the site, with habitat present on site and the wider area providing the mosaic of habitats preferred by brown hare. No other protected or notable species were identified on site, however habitat suitable to support badger, otter, reptiles, amphibians, invertebrates and bats was identified on, or adjacent to site.

A preliminary roost assessment for bats (October 2019), identified three trees and three buildings with potential roost features.

Breeding bird surveys encompassing the site and a 200m survey buffer were undertaken between April and June 2020. Surveys indicate that the site and surrounding area support a range of breeding passerines typical of an agricultural environment.

The proposed development will seek to maintain and enhance such field edge habitats vital for supporting populations of these declining species.

Environmental impacts



Water, environment and soils

The Scottish Environment Protection Agency (SEPA) flood map does not identify the site as being within an area likely to experience flooding. The site does not fall within any designated sites however, the Firth of Tay and Eden Estuary SAC, Firth of Tay and Eden Estuary SPA, Inner Tay Estuary SSSI and the Firth of Tay and Eden Estuary Ramsar site are all approximately 1.5km downstream of the site. All sites are designated for supporting various breeding and non-breeding birds as well as for the estuary and intertidal mudflats and sandflats. In addition, the River Earn lies 1km downstream of the site, on the edge of the SAC, SPA, SSSI and Ramsar designations.

The site sits above the Strathearn Sand and Gravel Aquifer, which has a 'Good' overall status (2018). The proposed development does not require any crossing or culverting of existing watercourse channels.

A site water management plan will be developed to manage potential risks to the water environment during construction and sustainable urban drainage systems will be incorporated into the design to account for any increased surface water runoff resulting from the proposed development. No peat soils have been identified within the site. There will be a loss of agricultural soil, but it would re-used on site for landscape mitigation.

Eight private water supplies are located within 1km of the site; none have been identified as potentially at risk of adverse effects from the proposed development.



Land use and recreation

Currently the site appears to be utilised for arable purposes, similar to the land north and west of the site. There are no major tourist attractions in the immediate area. The existing substation is located along the southern boundary of the site with the Jamesfield Garden Centre, Organic Farm Shop and Restaurant and Silver Lining Hair Studio located approximately 10m east. The ABNY/120 core path runs along the A913 Abernethy Road adjacent to the south of the site.



Noise

The current daytime noise climate in this rural area is low, consisting primarily of agricultural noise with distant road traffic noise and occasional railway noise from the Perth to Edinburgh mainline. Construction noise is considered to be short term and intermittent and can be controlled through the implementation of a noise management plan, which would include working hours agreed with Perth & Kinross Council.

Baseline noise monitoring surveys have been undertaken at noise sensitive receptors within the vicinity of the substation site to inform an operational noise assessment. Appropriate mitigation measures will be considered dependent on the results of the assessment.



Traffic

The construction of the substation upgrade works will require vehicles to deliver plant, machinery and workers to the site. Access would use the same junction off the A913 as is used for the existing substation. An appropriate construction traffic management plan would be developed to ensure road safety for all other road users during the construction works for suitable management of all abnormal loads.



Electric magnetic fields

Electromagnetic Fields (EMF) arise from electric charges and current flow. Exposure guidelines have been developed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) to ensure protection of human health in different situations, occupational exposure and public exposure.

These guidelines are adopted in the UK. The substation will be designed to adhere to the ICNIRP guidance for EMF limits. Significant effects from EMF are not anticipated.

Notes

What happens now, 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:

- How would you rate the overall quality of information presented within this consultation brochure?
- How do you feel regarding our proposals to upgrade the existing substation?
- Has the requirement for the proposal to upgrade the existing substation been adequately explained?
- Do you feel the project team have given enough consideration to ensure environmental impacts associated with the project are minimised as much as possible?
- Do you have any further comments you would like the project team to consider?

Comments

Your views and comments can be provided to the project team by completing a feedback form or by writing to Louise Anderson, Community Liaison Manager.

We will be seeking feedback from the members of the public and Statutory Bodies until 24 July.

All received feedback will be assessed and the proposed options adapted where necessary.

Feedback can be submitted online via the project website or via the project Community Liaison Manager:

Louise Anderson
Community Liaison Manager



louise.anderson@sse.com

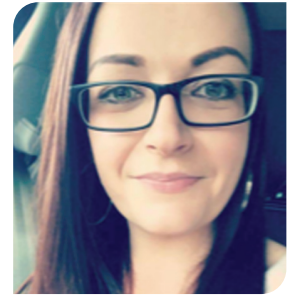


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Additional Information

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

Project Website:

www.ssen-transmission.co.uk/projects/abernethy-substation-extension

Find us on Facebook:

SSEN Community

Follow us on Twitter:

@ssencommunity



Your Comments

Thank you for taking the time to attend this consultation event. 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 How would you rate the overall quality of information presented within this consultation brochure?

Excellent Good Average Poor

Q2 How do you feel regarding our proposals to upgrade the existing Abernethy substation?

Support Neither support nor object Object

Q3 Has the requirement for the proposal to upgrade the existing Abernethy substation been adequately explained?

Yes No Unsure

Q4 Do you feel the project team have given enough consideration to ensure environmental impacts associated with the project are minimised as much as possible?

Yes No Unsure

Q5 Do you have any further comments you would like the project team to consider?



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:**

Email: louise.anderson@sse.com

Online: www.ssen-transmission.co.uk/projects/abernethy-substation-extension

Download: Comment forms and all the information from this consultation booklet will also be available to download from the project website.

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing this feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose.

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