

June 2023

Initial SSEN Transmission response to consultation feedback received for the proposed East Coast 400kV Phase 2 Scheme.

- **The Scheme is part of a major upgrade of the electricity transmission network across GB that is required to deliver UK and Scottish Government climate change and energy security targets**
- **It will help deliver net zero and secure the country's future energy independence**
- **In response to local feedback, we have extended the consultation period until 23 June**

We would like to thank all stakeholders who have taken the time to provide their feedback on our proposals to develop a new 400kV overhead electricity transmission line between Kintore and Tealing via Fiddes, which includes new substations in proximity to existing substations within both the Fiddes and Tealing areas.

Following an initial review of the feedback received so far, we wanted to take this opportunity to address some key themes which have been identified.

Consultation timescales

We understand that these proposals are significant and to acknowledge the extent of interest in the projects, and in response to calls for an extension to the consultation period, we have extended the consultation deadline until Friday 23 June. We hope this will allow all stakeholders with an interest in the project sufficient time to provide feedback.

The feedback received will help inform the refinement of route options and subsequent route alignments; and inform the proposed substation site locations, which we will further consult on later this year.

We acknowledge that these proposed projects will have an impact on local communities and feel that it is important to explain further why this infrastructure is required.

Need for the project

These projects, alongside several other major network upgrades planned in the north east and east coast of Scotland, are part of a GB wide programme of works that are required to meet UK and Scottish Government energy targets and there is a clear expectation from Government that these projects will be delivered by 2030.

More specifically, these projects are needed to deliver Government 2030 renewable targets and follow the publication in April 2022 of the UK Government's British Energy Security Strategy (BESS)¹.

The BESS set out the UK Government's plans to secure the country's future energy independence by removing the dependence on, and price exposure to, volatile global wholesale gas markets. This will be achieved by accelerating the deployment of homegrown and affordable low carbon electricity

¹ <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

generation, together with accelerating the enabling electricity network infrastructure required to connect and transport this power. The BESS included an increased ambition for offshore wind of 50GW by 2030, up from the previous target of 40GW.

To enable the connection of that 50GW of offshore wind by 2030 target, the GB Electricity System Operator (the ESO), working in collaboration with the three GB Transmission Owners, developed what is known as the 'Holistic Network Design' (the HND)². This sets out the onshore and electricity transmission infrastructure required across GB to deliver this UK Government target, which includes these projects.

Then in December 2022, the energy regulator, Ofgem, approved the need for these projects as part of its Accelerated Strategic Transmission Investment (ASTI)³ framework decision.

As well as helping achieve UK and Scottish Government 2030 targets, deliver a pathway to Net Zero and secure the country's future energy independence, these reinforcements will also collectively support the creation of significant numbers of jobs across Scotland and the UK, as well as providing significant economic value across the country.

Whilst delivering this critical national infrastructure by 2030 requires an acceleration of the project development and delivery phases, we remain fully committed to working closely with the local community and wider stakeholders to help inform its design. We would like to reassure stakeholders that no parts of our established project development process will be missed.

The electricity system need - and how the specific projects identified as required to satisfy that need have been established - can be found in established network planning processes for the GB electricity transmission network. This includes the proposed technology solution.

Network Planning Process

The process for GB electricity transmission network planning involves extensive analysis and power system studies to establish both the drivers for network investments and the identification of which network upgrades should be taken forward.

This first considers future electricity trends, as set out annually in the National Grid Electricity System Operator (NGESO) Future Energy Scenarios (FES)⁴. The FES sets out scenarios for future electricity generation and demand, broken down at a regional level across GB, including the north of Scotland; and considers all energy technologies.

The outputs from the FES are then considered against the existing electricity network, including planned reinforcements, to identify both generation and demand constraints on pre-defined transmission system boundaries. This process, the Electricity Ten Year Statement (ETYS)⁵, is important to identify where there are 'bottlenecks' on the transmission system requiring intervention to address those constraints that would otherwise prevent the transportation of electricity generation to meet local demands.

² <https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design/hnd>

³ <https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment>

⁴ <https://www.nationalgrideso.com/future-energy/future-energy-scenarios>

⁵ <https://www.nationalgrideso.com/research-and-publications/electricity-ten-year-statement-etys>

To address those bottlenecks, the three GB electricity transmission owners (SSEN Transmission, Scottish Power Transmission and National Grid Electricity Transmission) submit a range of potential network reinforcements designed to alleviate such constraints to the NGEESO. This involves multiple options, often to address the same network constraints, which are then analysed and assessed on a GB wide basis to establish which investments are deemed economical and required. This process, known as the Networks Options Assessment (NOA)⁶, makes recommendations as to which investments Transmission Owners should take forward to alleviate current and forecast constraints across those pre-defined transmission system boundaries.

As part of last year's Pathway to 2030 Holistic Network Design, which set out the onshore and offshore electricity transmission infrastructure required to deliver the UK Government's 50GW by 2030 offshore wind target, the NGEESO also refreshed its 2022 NOA report. The main change to this from previous NOA reports was a change in terminology from what was previously assessed as an 'earliest in service date' for all recommended reinforcements, to a 'required in service date' for all those reinforcements identified by the NGEESO as 'required' and 'essential' to meet the Government's 2030 offshore wind target. This included the East Coast 400kV phase 2 projects.

Project status

The East Coast 400kV phase 2 projects remain in the early stages of development and no specific overhead line alignments have been identified. We are currently seeking feedback on potential corridor and route options and potential substation locations.

To support the development of this project, we have adopted sophisticated software to help narrow down potential viable routes, allowing us to consider a wide range of factors, based on publicly available data sets. This includes the proximity to homes, villages, and towns; historical landmarks, features and landscapes; and the many environmental designations along its route. The outcome of this analysis was further assessed and validated by desk and field-based studies, which established a shortlist of the most viable options, as presented in our consultation events and materials. This ongoing analysis will continue throughout the development phase.

We have to date also consulted on our substation sites based on short lists of options, which have been narrowed down following environmental and technical engineering assessments.

Timeline for overhead line route and alignment decisions and substation site selection

The development of a preferred route for the new overhead line is challenging, given the range of constraints between Kintore and Tealing. The project team will consider all the feedback received at the end of the consultation period. They will review feedback against the corridor and route options and substation sites that were presented and will use that information to scrutinize the routing and site selection that has been undertaken. This process considers if there are alternatives that require further investigation. Once the review has been completed a Proposed Route is identified to be taken forward to the next stage of developing a route alignment. It will also identify substation sites that would be taken forward to detailed design. The outcomes of the consultation review are reported publicly in a Report on Consultation.

⁶ <https://www.nationalgrideso.com/research-and-publications/network-options-assessment-noa>

We would anticipate holding an alignment options consultation towards the end of 2023. For the substations we would seek to start the first of the Pre-application Consultations around the same time.

Alternative design options Undergrounding and Offshore

There are several environmental, technical, and operational constraints associated with undergrounding at extra high voltages, particularly at 400kV, which make this option extremely challenging to deliver in many areas of Scotland.

Due to the extra high voltage and capacity required of these circuits, there are significant technical and environmental challenges associated with the installation, maintenance and operation of cables and associated equipment. In addition, restoring power in the event of a fault can take much longer than for an overhead line.

Furthermore, the cost of investing in the electricity transmission network is ultimately paid for by GB electricity consumers and it is therefore important that cost is a key consideration. It is acknowledged that undergrounding is considerably more expensive, both to install and maintain, the costs of which will be borne by GB consumers.

We do consider reasonable alternatives as part of our development process and despite these collective challenges associated with undergrounding, where there is a clear evidence base to justify undergrounding, this will be considered. However, to consider undergrounding over a significant length of or the entirety of a project would be unreasonable on the grounds that it would be contrary to SSEN Transmission licence obligations in respect of additional cost to the end consumer and additional risk to the electricity transmission network in the event of cable failure and consequent outages.

Alongside this onshore reinforcement there are also a number of new offshore cables being proposed as part of the "Pathway to 2030" scheme and there are several reasons why overhead lines are required alongside subsea cables. The assessment to establish both the onshore and offshore requirements was lead by NGESO as part of the HND process and does not form part of this consultation, we are consulting on the output of that process. We are also working on producing an information bulletin on the challenges of delivering offshore infrastructure and aim to release this in due course.

Furthermore, onshore reinforcements present opportunities to accommodate onshore electricity generation and demand connections, including to support local and community decarbonisation ambitions. It will also enhance the resilience and security of supply of local electricity networks across the north of Scotland.

Finally, cost is clearly an important consideration, particularly given the cost of investing in the electricity transmission network is ultimately recovered by electricity bill payers and that is one of the key factors in the NGESO's assessment of proposed reinforcements.

When considering new substation sites Fetteresso was initially considered but ruled out for several reasons when considering feasibility of expansion, topography, future connectivity and when considered in conjunction with the wider network requirements.

The terrain surrounding the existing Fetteresso substation would be characterised as steep and undulating. It would be challenging and costly to create a level platform of the footprint required to deliver the requirements of the site in the Fiddes area. It would likely result in a much larger area

On future connectivity, there is a current known requirement for two overhead line connections, two separate offshore underground cable connections and additional connections back to the existing Fiddes substation. There would be a number of challenges in bringing these connections into a site located near

Fetteresso. The elevated position would require the offshore cable connections to be constructed on a steep hillside. The offshore cable connections would require much more significant infrastructure crossings which would include transmission gas/oil and gas pipelines, the A90 and the railway line. Each of these crossings would be extremely complex to design and construct. There would be similar concerns for the OHL connections into a site at Fetteresso, however the constraints are more easily navigated when using OHL.

Following on from the technical challenges and costs, there is a health and safety concern about the construction activities required in having the site located at Fetteresso. The creation of the substation platform and the incoming cable connections are significant, and we can remove a significant risk by locating the substation in lower ground that does not require an extensive number of complex infrastructure crossings. Additionally, the area to the south of Fetteresso has known landslip issues.

Balfour Beatty – Edzell Compound (part of the [East Coast 400kV Phase 1 project](#))

The existing 275kV overhead line that runs from Kintore via Fetteresso and Alyth, down to Scottish Power Transmission's network area is currently being upgraded to 400kV. Consent for this project was granted in September 2022 with work commencing in February 2023 in the Fetteresso area and working north towards Kintore, this project is due to complete in 2026.

Balfour Beatty have been engaged as Principal Contractor for these works by SSEN-T. Balfour Beatty have established a site compound and welfare area near Edzell/Fettercairn. These works are named East Coast 400kV Phase 1 and are completely unrelated to the proposals currently being consulted on.

Upgrading existing infrastructure

We would like to take this opportunity to respond to feedback received regarding upgrading of the existing 275kV lines and 132kV line in the east coast.

The towers on the easterly 275kV overhead line that runs from Kintore to Tealing are unfortunately not suitable to be upgraded to 400kV. These lines will not be removed, and both are still needed along with the 132kV line to connect large quantities of smaller scale renewable generation (such as onshore windfarms, hydro schemes, and battery/solar PV energy parks) and to also transfer power to local demand centres.

In 2021 we were developing proposals to replace the 132kV between the Craigiebuckler/Tarland overhead line Tee point (west of Aberdeen) and the Tealing substation with a new [132kV line](#), however following technical assessment and analysis there was no longer a requirement for this project to be advanced. The generation background in this area is continually subject to change and, whilst a driver to move this project forward is not currently in place, should this change, we will be required to review our plans for this part of the network and take forward upgrade works as required.

Managing and mitigating environmental impacts

As a responsible developer, we would like to reassure stakeholders that we take our environmental responsibilities extremely seriously and follow a mitigation hierarchy of 'avoid, minimise, mitigate and restore'.

We are committed to deliver Biodiversity Net Gain (BNG) on all our projects; as well as compensatory planting for any trees felled during the construction phase, where possible with native species. Robust policies are also in place to manage and mitigate any impacts on irreplaceable habitats, like peatland and ancient woodland.

All consent applications will be accompanied by a detailed Environmental Impact Assessment (EIA) Report which will consider impacts on a wide range of environmental topics, together with providing mitigation requirements.

LiDAR and Drone Surveys

We can confirm we have commenced LiDAR flights and drone surveys to undertake aerial surveys on potential overhead line routes, alongside other assessments, to help inform the ongoing development of this project. These initial surveys have prioritised those routes which based on our initial assessment of key environmental, technical, and economic factors were identified, on balance, as performing the best. However, we would like to reassure stakeholders that no decisions have been taken on potential overhead line routes or substation locations.

Assessing Feedback and Considering Options

Our teams continue to assess and consider the feedback received via our ongoing consultation and are committed to consider other potential substation locations and overhead line routes. Should we establish viable alternatives that warrant more detailed investigations, they will also be surveyed accordingly.

Tower Heights

In response to concerns about towers being 75m high we would like to clarify that the towers will be on average 57m high.

Stakeholder Engagement

We remain committed to an open and inclusive approach to stakeholder engagement throughout the development and delivery of all our critical national infrastructure projects and will consider all feedback from those who are seeking to constructively engage in the process.

Whilst we fully accept that our proposals will have an impact on the landscape and local communities and understand not everyone will be accepting of this, we are committed to work constructively with all stakeholders to help minimise and mitigate impacts where possible.

Raising awareness of the project

In advance of the public consultation on the East Coast 400kV Phase 2 project, we undertook pre-consultation meetings with Community Councils and Ward Councilors, and promoted the consultation events via postal adverts, newspaper adverts, social media posts and direct emails.

We distributed 11,000 leaflets to homes and businesses along all routeing options, sought press coverage in local papers and advertised the events on our social media channels, placing adverts in the Press and Journal and The Courier over three weeks, and the Angus County Press for two consecutive weeks, ahead of the consultations.

We are aware of reports from some residents that our leaflets were not received which we have raised with our distribution company directly to try and establish why this may have been the case. We're currently exploring ways in which we can improve leaflet drop processes for future consultation events for the project.

Next steps

We expect alignment options to be ready to present towards the end of the year, with further formal public and statutory consultation planned at this stage. Information received between now and that

time will continue to inform the design of those alignment options.

A detailed Report on Consultation will be published, following the consultation period, to explain how feedback has been considered to inform the more detailed network design. Where we are unable to respond positively to feedback received, we will ensure we explain the reasons why that is the case.

The next round of formal consultation is planned towards the end of 2023, but we will continue to engage with stakeholders between now and then as we further refine our plans.

For more information, please visit the dedicated project webpages:

<https://www.ssen-transmission.co.uk/projects/project-map/kintore-fiddes-tealing-400kv-ohl-connection/>

<https://www.ssen-transmission.co.uk/projects/project-map/fiddes-400kv-substation/>

<https://www.ssen-transmission.co.uk/projects/project-map/tealing-400kv-substation/>

<https://www.ssen-transmission.co.uk/projects/project-map/alyth---tealing-ohl-re-conductor/>

<https://www.ssen-transmission.co.uk/projects/project-map/tealing---westfield-ohl-re-conductor/>

