Scottish & Southern Electricity Networks

TRANSMISSION

Future works: Hurlie and Fetteresso substations

Supplementary hand out

June 2024

We know that local stakeholders are keen to understand the full extent of renewable developments being proposed in their local area.

Applications from the likes of wind farms to connect to the transmission network are made to National Grid ESO and undergo a lengthy process before we begin to develop a network connection for developments applying in our license area.

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. 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**

SSEN Transmission and commercial developer projects (the latter over which SSEN Transmission has no influence) are at various stages of feasibility testing and development. Figure 1 shows indicative corridors reflecting the wide areas of study within which these possible projects may be routed or located. These areas of study will be subject to refinement through individual project development processes. The ultimate land requirements will be determined through an iterative process of environmental and technical analysis taking into account factors such as proximity to properties, the potential for impacting views and amenity, wider landscape character, habitats and species, and the presence of features of historic interest, and the eventual project requirements such as the number of circuits, capacity and technology, which could be subject to change depending on individual developer activity in the area. In all cases, the development process will include—and in some cases is already including—consultation with the community and other stakeholders. Each project would be subject to separate consentingb processes at the appropriate stage.

The area highlighted orange in Figure 1 as a Potential Area for Offshore Connections is very much indicative. The two possible offshore connection projects, offshore grids which would be taken forward by SSEN Transmission and Bowdun Offshore Wind Farm which is a commercial development, are at very early stages of development. The area highlighted is intended to show where future infrastructure could be located, but this is subject to further development activities. Connection route and site selection studies are on-going and unlikely to be concluded before we submit our planning application. Both offshore projects would require connections from the coast. It is likely that these will be underground, but the possible routes they may follow are yet to be determined and will be subject to separate route selection processes, on which the offshore grids project team and Bowdun Offshore Wind Farm Project will consult in the future.

We are aware, as a result of our relationship in the area, of a number of possible projects being promoted by commercial developers, although we are not aware of any connection applications. Communities should note that land rights, development consent and a connection agreement are not inter-dependant. A developer can have one or all three, depending on the stage of their project. In addition, SSEN Transmission, as the high voltage (132kV and above) operator, is not automatically notified of potential developments seeking connections at the lower distribution voltage (33kV or below and/or less than 50MW).

Works in construction: east coast 400kV upgrade and Fetteresso 400kV upgrade

The east coast 400kV upgrade project is the second part of the phased onshore reinforcement on the east coast.

This project involves installing uprated conductors between Kintore, Fetteresso, Alyth and Kincardine (in Scottish Power Transmission's area) increasing the voltages these existing overhead lines are carrying from 275kV to 400kV. These works are programmed to complete in 2026.

Part of these works includes the Fetteresso substation 400kV upgrade project. The work consists of upgrading existing equipment, installing new equipment, such as a larger Super Grid Transformer and installing associated protection and control upgrades to facilitate the increase in voltage from 275kV to 400kV.

This project is due to commence in the summer of 2024 and be completed by 2026.

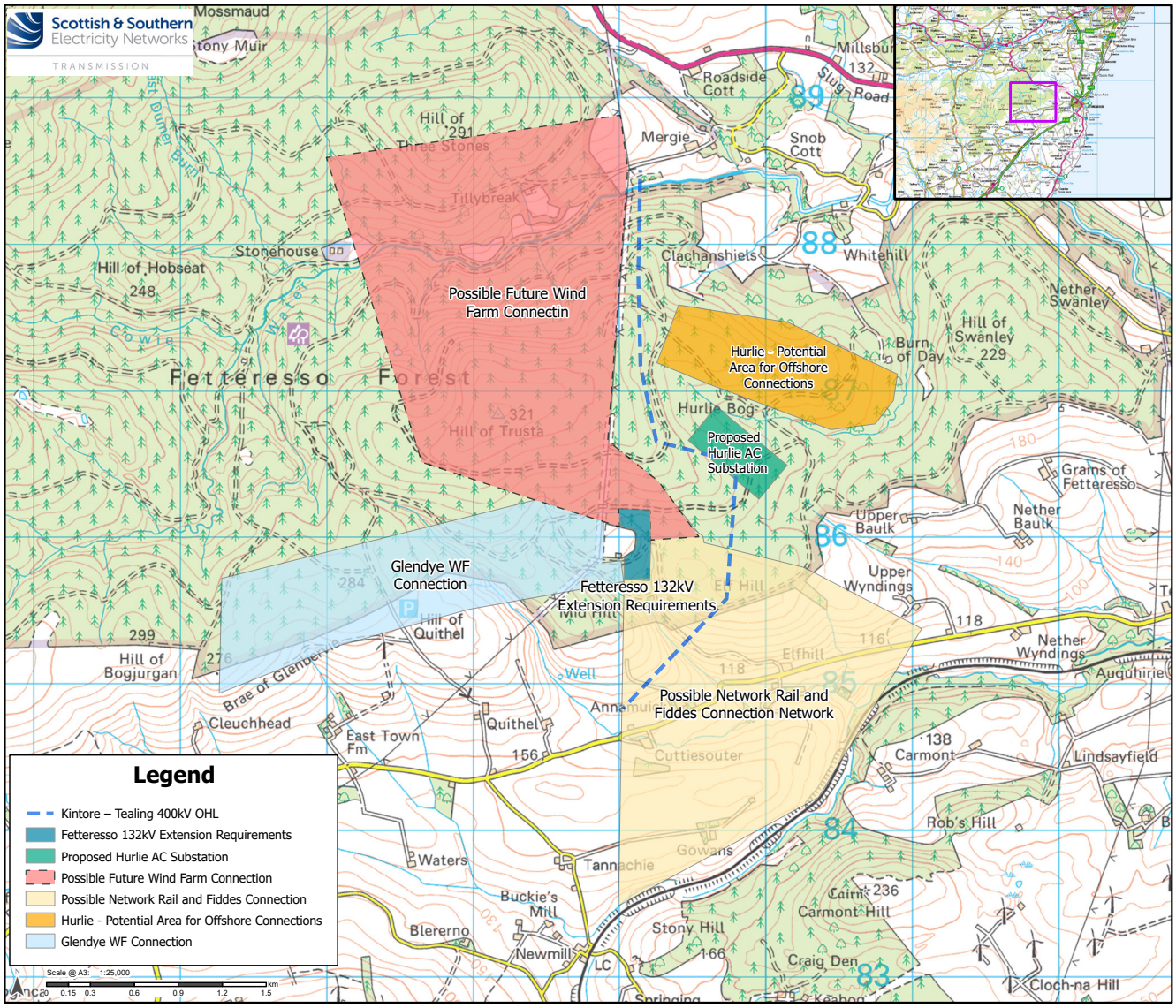
In addition, both these projects will require the creation of new access tracks and upgrade of existing accesses to facilitate the works.

You can find out more at the dedicated project websites:

ssen-transmission.co.uk/fetteresso-upgrade

ssen-transmission.co.uk/ec400-upgrade

Figure 1. Future possible projects in Fetteresso Forest



Scope and key dates

Project name	Scope	Driver	Key dates
Glendye wind farm connection	In order to meet the connection requirements of the commercial wind farm, SSEN Transmission is seeking to develop a new 132kV overhead line. The new line, which is approximately 20km and would comprise a new 132kV single circuit supported by steel trident poles would connect into the existing Fetteresso substation from the south west. The final 1km would be installed underground to avoid existing infrastructure. The line and cable route would require the permanent removal of an 80m wide strip of existing woodland along its length. The transition from OHL to underground cable will require a cable sealing end which is a multipole structure of similar height to the trident poles, 14–18m, in an area of hardstanding.	Developer connection for 156MW wind farm	Consent submission: Q4 2024/Q1 2025 Construction start: Q3/4 2026 Construction finish: Q4 2028
Fetteresso 132kV substation extension	The project involves extending the eastern end of the existing substation platform to the north and/or south, by approximately 45m, to accommodate a new 132kV double busbar. The project will involve earthworks to form the platform extension, new 400kV and 132kV transformers, additional bays to facilitate all required connections and all associated protection and control upgrades.	Network reinforcements due to an increased number of developer connections including Glendye, Network Rail and possible local connections triggering transmission upgrades. Also required to provide security to the Network Rail connection to ensure secure, reliable supply for the electrified train network.	Consent submission: Q4 2024/Q1 2025 Construction start: Q3/4 2026 Construction finish: Q4 2028 Some works ongoing to 2029
Network Rail Drumlithie	The project involves installing two new transformers on the newly extended platform at Fetteresso substation, which would be dedicated to Network Rail. It also requires two cable connections to rail feeder stations near the railway line. Likely connection will go towards the railway in a south east direction. It may require a small building to be erected within the substation compound to house the protection equipment.	Developer connection. Part of the Network Rail east coast main line electrification. This is a demand connection and draws power from the grid.	Consent submission: Q4 2025/Q1 2026 Construction start: Q3/4 2027 Construction finish: Q1 2029

Project name	Scope	Driver	Key dates
Future wind farm connection	We are aware of a new proposed wind farm to the north of Fetteresso. If this results in a connection agreement to Fetteresso, it is likely that the connection would be similar to Glendye, comprising a single circuit 132KV overhead line with a short section of underground cable at the approach to the substation. This connection is not contracted, however.	Developer connection	TBC
Fiddes 132kV replacement	There is a possible requirement to install a new double circuit 132KV connection from the existing Fiddes substation to the existing/ upgraded Fetteresso substation. This would also require new higher capacity transformers to be installed, possibly at or near the existing Fiddes substation. This would also result in the partial decommissioning and removal of some equipment at the existing Fiddes substation.	This project is still subject to OFGEM approval and is one of several potential options to provide a replacement for the existing Fiddes substation which is at capacity and approaching the end of its operating capabilities.	TBC
SSEN Transmission offshore grids project	The aim of this project is to create an offshore grid network. At present, the onshore element of electrical infrastructure, is likely to include: • An onshore HVDC converter station, which may connect to the proposed Hurlie substation via underground cables to be situated within the vicinity of Hurlie substation • Approximate converter dimensions - 360m x 290m x 29m (LxWxH) • Underground cables from the coast to the HVDC Converter station	Wider 2030 ASTI upgrades	TBC

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