Scottish & Southern Electricity Networks

Fanellan Hub 400 kV Substation and Converter Station

Environmental Impact Assessment Report

Volume 2 | EIA Report

Chapter 2 – Project Need

February 2025

CONTENTS

OTHER VOLUMES

2. PROJECT NEED

2.1 Overview

2.1.1 This Chapter explains the need for the Fanellan Hub in the context of materially relevant National Policy within National Planning Framework 4 (NPF4) [1], the National Grid Electricity System Operator's (NGESO) Pathway to 2030 Holistic Network Design [2], the British Energy Security Strategy[3] and the Accelerated Strategic Transmission Investment (ASTI) framework [4].

2.2 National Significance

2.2.1 In July 2022, National Grid ESO,[5] (as of 1st October 2024 now known as the National Energy System Operator (NESO)) published the Pathway to 2030 Holistic Network Design, detailing the onshore and offshore electricity transmission network infrastructure required to enable the forecasted growth in renewable electricity across Great Britain, specifically the UK and Scottish Government's 2030 offshore wind allocations of 50 gigawatts (GW) and 11 GW (through the Crown Estate and ScotWind leasing rounds) which are the main driver for these upgrades. This confirmed the need for a significant and strategic increase in the capacity of onshore and offshore electricity transmission infrastructure to deliver 2030 targets and support the pathway to net zero across Great Britain and Scotland and both the UK and Scottish Governments commitments to meet legally binding net zero targets by 2050 and 2045 respectively. The requirements for grid upgrades in SSEN Transmission's area, including Fanellan Hub, are driven by the 11 GW of ScotWind Offshore Wind development allocated across the North of Scotland.

2.2.2 To enable the delivery of the required transmission infrastructure for 2030, Ofgem established a new regulatory framework for the Transmission Operators, including SSEN Transmission, to provide regulatory approval for the delivery and funding of the required transmission system infrastructure known as the Accelerated Strategic Transmission Investment (ASTI) framework. For SSEN Transmission, the ASTI Framework gives regulatory approval for the delivery of the network infrastructure identified in the Pathway to 2030 Holistic Network Design, enabling the connection of 11 GW of ScotWind generation identified in the Holistic Network Design. Ofgem and the Department for Business, Energy and Industrial Strategy (BEIS), now the Department for Energy Security and Net Zero (DESNZ), have supported and endorsed the Pathway to 2030 Holistic Network Design through the establishment of the Offshore Transmission Network Review (OTNR) and Central Design Group (CDG). This makes clear that all of the reinforcements identified in the Holistic Network Design are required and essential if the UK and Scottish Government's offshore wind targets are to be met.

2.2.3 National Grid ESO was clear that an integrated design for the electricity transmission network is needed to connect the new, large-scale renewable sources of energy. It is crucial that this investment, including the proposed substation and converter station at Fanellan Hub, is delivered in full along with the other elements of the transmission system reinforcement required. Failing to progress any part of this holistic design will lead to 2030 targets being missed.

2.2.4 The Fanellan Hub will be a key node on the proposed new 400 kV overhead line network between proposed hubs at Spittal and Peterhead, in addition to new substations at various locations along the new OHL routes. The Fanellan Hub also provides a point of connection for the HVDC link from the Western Isles and facilitates

1 The Scottish Government, (2023). National Planning Framework 4. [Online] Available at: https://www.gov.scot/publications/national-planning-framework-4/ [Accessed: June 2024].

2 National Grid Electrical System Operator (ESO), 2022. Pathway to 2030 – A holistic network design to support offshore wind deployment for net zero. [Online] Available at: https://www.nationalgrideso.com/document/262676/download [Accessed: June 2024].

3 UK Government, (2022). Policy paper – British energy security strategy. [Online] Available at: https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy [Accessed: June 2024].

4 Ofgem, (December 2022). Decision on accelerating onshore electricity transmission investment. [Online] Available at: https://www.ofgem.gov.uk/sites/default/files/2022-12/ASTI%20decision%20doc%20-%20Final_Published.pdf [Accessed: June 2024].

5 The responsibilities of National Grid ESO transferred to the independent system planner and operator known as the National Energy System Operator (NESO) as of 1st October 2024.

the uprating of the existing Beauly – Denny overhead line to enable both circuits to operate at 400 kV. The projects set out within the Holistic Network Design that will connect to the Fanellan Hub are:

- Beauly – Spittal 400 kV Project, comprising proposed new 400 kV substation developments at Carnaig and Banniskirk, with a proposed new 400 kV overhead line linking the Fanellan Hub to these new substations.
- Beauly – Peterhead 400 kV Scheme, comprising proposed new 400 kV substation developments at Longside, Greens and Coachford with a proposed new 400 kV overhead line linking the Fanellan Hub to these new substations.
- Beauly – Denny 400 kV Upgrade, comprising proposed new 400 kV substations at Cambushinnie and Bingally, with a proposed upgraded 400 kV overhead line linking the Fanellan Hub to these new substations.
- Western Isles HVDC Project, comprising proposed new HVDC Converter Stations located near Stornoway and at the Fanellan Hub site, linked by proposed HVDC cable between the Converter Stations.

2.2.5 All schemes identified under the Holistic Network Design are required to provide for the export of the 11 GW generated by ScotWind, however the Fanellan Hub is required to allow connection for any one of the schemes listed above. In the event of a delay to any one of these schemes the Fanellan Hub would still be required for the other connecting projects and would be delivered to facilitate this connection onto the wider transmission network.

2.2.6 In April 2024, the Scottish Government announced that an interim target of a 75 % reduction on the baseline 1990 national greenhouse gas levels by 2030 would not be achievable. New legislation is now set to be introduced with regard to the ongoing management and monitoring of emissions to 2045, but at present the net zero 2045 target remains in place. The fact that the interim 2030 targets will not be reached emphasises that while progress has been made with respect to greenhouse gas emissions being reduced, and the deployment of renewable energy in Scotland, there is still a way to go in reaching overall targets. Therefore, there is a requirement to deploy additional clean energy resource to meet Scotland's energy and climate change objectives.

2.2.7 The need for these reinforcements is also underlined within the British Energy Security Strategy [6], which recognised the significant impact on the cost of living from rising gas prices and sets out a plan to increase the supply of electricity from zero-carbon British sources to deliver affordable, clean, and secure power in the long term.

2.2.8 In addition, that increase in the capacity will reinforce the transmission network locally, supporting the ability to decarbonise heating systems as set out in the Scottish Government Energy Efficient Scotland Roadmap. In terms of Net Zero and long-term energy use, this will support a reduction in the use of non-renewable generation sources to power homes and businesses, as well as support forecast increases in electricity consumption driven by the electrification of homes, businesses and vehicles.

2.2.9 The proposed Fanellan Hub would have capacity for further connections from other generation sources, such as onshore wind and Battery Energy Storage Systems (BESS). Whilst these are developed by third party developers and not SSEN Transmission, it is deemed economic and efficient for SSEN Transmission to provide

6 UK Government, (2022) British Energy Security Strategy. Available at https://www.gov.uk/government/publications/british-energy-security-strategy [Accessed October 2024].

for capacity to permit connections from such developments beyond those connections which are currently contracted.

2.3 National Development

2.3.1 The Fanellan Hub is classed as National Development under Section 3A of the 1997 Act and is of a type that would fall within National Development 3 – Strategic Renewable Electricity Generation and Transmission Infrastructure in Scotland's National Planning Framework (NPF4) adopted in February 2023.

2.3.2 NPF4 identifies 18 National Developments (ND) described as: "*significant developments of national importance that will help to deliver the spatial strategy*". Developments proposed as National Developments are acknowledged as projects expected to provide substantive support to the economy of Scotland in terms of direct and indirect employment and business investment, with wider economic benefits. It adds that: "*Their designation means that the principle for development does not need to be agreed in later consenting processes, providing more certainty for communities, businesses and investors*".

2.3.3 In relation to National Development 3 (ND3) "Strategic Renewable Electricity Generation and Transmission Infrastructure", the Statement of Need provides:

"This national development supports renewable electricity generation, repowering, and expansion of the electricity grid.

A large and rapid increase in electricity generation from renewable sources will be essential for Scotland to meet its net zero emissions targets. Certain types of renewable electricity generation will also be required, which will include energy storage technology and capacity, to provide the vital services, including flexible response, that a zero-carbon network will require. Generation is for domestic consumption as well as for export to the UK and beyond, with new capacity helping to decarbonise heat, transport and industrial energy demand."

The electricity transmission grid will need substantial reinforcement including the addition of new infrastructure to connect and transmit the output from new on and offshore capacity to consumers in Scotland, the rest of the UK and beyond. Delivery of this national development will be informed by market, policy and regulatory developments and decisions."

2.4 Designation and Classification

2.4.1 The location for ND3 is set out as being all of Scotland and in terms of need it is described as: "*Additional electricity generation from renewables and electricity transmission capacity of scale is fundamental to achieving a net zero economy and supports improved network resilience in rural and island areas*."

2.4.2 The designation and classes of development which would qualify as ND3, are: "*A development contributing to 'Strategic Renewable Electricity Generation and Transmission' in the location described, within one or more of the Classes of Development described below and that is of a scale or type that would otherwise have been*

classified as 'major' by 'The Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009', is designated a national development:

(a) on and offshore electricity generation, including electricity storage, from renewables exceeding 50 megawatts capacity;

(b) new and/or replacement upgraded on and offshore high voltage electricity transmission lines, cables and interconnectors of 132 kV or more; and

(c) new and/or upgraded Infrastructure directly supporting on and offshore high voltage electricity lines, cables and interconnectors including converter stations, switching stations and substations."

2.4.3 The Proposed Development, as a hub for transmission infrastructure, therefore, qualifies as class 3 (c) National Development.

2.5 Conclusion

2.5.1 The Proposed Development is a National Development that is explicitly supported by national planning policy, the electricity system operator, and the energy regulator. It would contribute significantly towards the delivery of the UK and Scottish Government's Net Zero Targets and help reduce the UK's dependence on imported oil and gas.