VOLUME 2: CHAPTER 2 – PROJECT NEED

Figures and Visualisations (Volume 3a and 3b of this EIA Report)

There are no figures or visualisations associated with this chapter.

Appendices (Volume 4 of this EIA Report)

There are no appendices associated with this chapter.

2. PROJECT NEED

2.1 Overview

This Chapter explains the need for the Proposed Development and the process of designing the optimal solution to meet the electrical transmission infrastructure requirements that are the drivers for the Proposed Development while minimising environmental effects. It sets out the needs case in the context of materially relevant National Policy within National Planning Framework 4 (NPF4) [1], the Electricity System Operator's (ESO) Pathway to 2030 Holistic Network Design [2], the British Energy Security Strategy[3] and the Accelerated Strategic Transmission Investment (ASTI) framework [4].

The site selection process and the detailed consideration of alternatives that have been undertaken is provided in **Chapter 4 - The Site Selection Process and Alternatives**. The work in relation to the consideration of alternatives for the Proposed Development has followed on from the consideration of viable strategic options that was carried out as part of the preparation of the Initial Needs Case (as set out by Office of Gas and Electricity Markets (OFGEM)).

2.2 National Significance

In July 2022, National Grid ESO, published the Pathway to 2030 Holistic Network Design, setting out the blueprint for the onshore and offshore electricity transmission network infrastructure required to enable the forecasted growth in renewable electricity across Great Britain, including the UK and Scottish Government's 2030 offshore wind targets of 50 GW and 11 GW. This confirms the need for a significant and strategic increase in the capacity of the onshore electricity transmission infrastructure to deliver 2030 targets and a pathway to net zero. The need for these reinforcements is underlined within the British Energy Security Strategy, 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.

SSEN Transmission holds a licence under the 1989 Act for the transmission of electricity in Scotland and has a statutory duty under section 9 of the Act to develop and maintain an efficient, co-ordinated, and economical electrical transmission system in its licence area. Where there is a requirement to extend, upgrade or reinforce its transmission network, SSEN Transmission's aim is to provide an environmentally aware, technically feasible and economically viable solution which would cause the least disturbance to the environment and to people who use it.

2.3 National Developments

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*".

National Development 3[5] (ND3) states "*Strategic Renewable Electricity Generation and Transmission Infrastructure…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*

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

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

The location for ND3 is "All Scotland" and the description of Need is that: "*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.*"

The designation and classes of development which would qualify as ND3 are: *"(a) on and off shore 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."*

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

2.5 Statement of Need

In addition to being designated as a National Development under NPF4, the Proposed Development is supported by NPF4 under the provisions set out in Policy 11(a)(ii) (Energy).

The ESO's Pathway to 2030 Holistic Network Design identified the requirement to reinforce the onshore corridors between Beauly and Spittal in Caithness and provide an offshore subsea cable between Spittal and Peterhead in Aberdeenshire. It outlined that a 400 kV overhead line and high voltage subsea cable connection between these sites would provide the capacity required to take power from large-scale onshore and offshore renewable generation (mainly wind farms) to the north-east mainland of Scotland. From there, it could be transported to demand centres in England via a subsea cable. The Proposed Development is an integral component to in delivery these requirements.

The independent Great Britain energy regulator, the Office of Gas and Electricity Markets (Ofgem), approved the need for these projects as part of its Accelerated Strategic Transmission Investment (ASTI) framework as a Great Britain wide programme of investments. Ofgem's decision approved all of SSEN Transmission's Pathway to 2030 projects, including the Spittal – Loch Buidhe – Beauly 400 kV reinforcement. SSEN Transmission's Pathway to 2030 Projects (including Proposed Development) are illustrated in **Plate 2.1 SSEN Transmission's Pathway to 2030 Projects**.

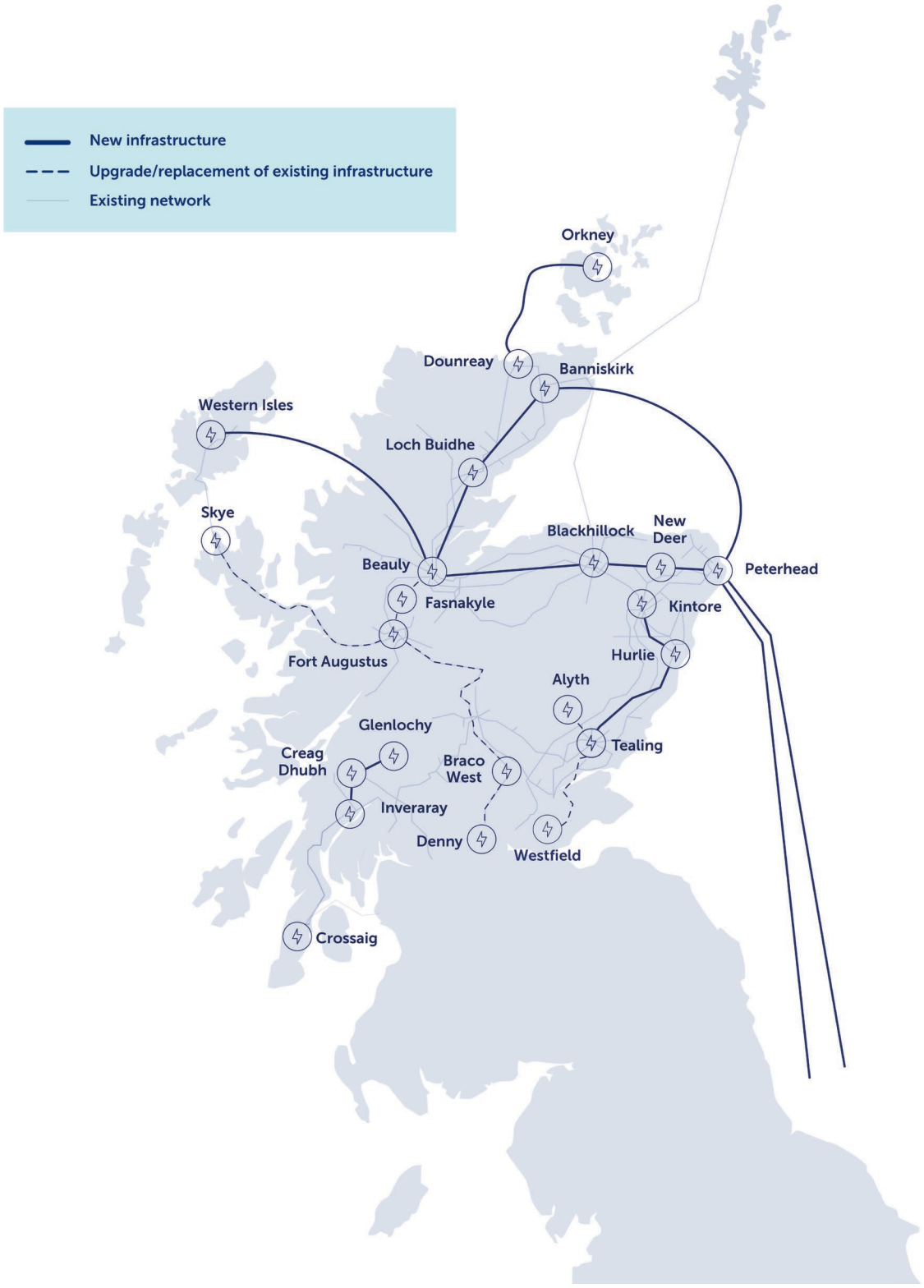

Plate 2.1 SSEN Transmission's Pathway to 2030 Projects

A strategic hub at Banniskirk (Banniskirk Hub) is required for the purpose of establishing a co-located approach to development for the future network reinforcements as identified in the Pathway to 2030 Holistic Network Design to meet the UK's 2030 net zero targets.

A holistic approach to project planning and development was considered necessary to maximise the potential efficiencies which comes from a single co-ordinated development site for both AC and DC transmission infrastructure in the region.

The Proposed Development will substantially strengthen the local transmission network and support new onshore and offshore connections.

The Proposed Development will further help facilitate the export of future renewable generation from the North of Scotland to demand centres throughout the UK. This includes an expected 2 GW HVDC south through the Spittal to Peterhead HVDC Underground Cable.

2.6 Strategic Options

A strategic hub at Banniskirk is required for the purpose of establishing a co-located approach to development for the future network reinforcements as identified in the Pathway to 2030 Holistic Network Design to meet the UK's 2030 net zero targets. Therefore the 'Do Nothing' scenario would result in insufficient capacity in the network and a failure to meet the generation and supply demands.

The adoption of a strategic hub was determined through a Strategic Options assessment that aimed to identify a viable site or sites with the shortest connections, considering relevant technical, environmental and economic factors, as described in the Holford Rules.

Three configuration options were identified that were considered feasible for the baseline footprint of the Hub in Spittal (to consist of a new 400 kV Spittal substation and a new Spittal-Peterhead HVDC Converter station):

- Single site sized sufficiently to accommodate all agreed future infrastructure;
- Cluster of sites within proximity to be considered co-located from a connection perspective (close being no more than 1 km away); and
- Individual or part shared sites but dispersed in and around the Spittal area (no further apart than 5 km).

A single hub site for all future AC and DC works was considered to have the advantage of minimising the interconnecting cable between the AC network and the AC/DC converters. Greater AC cable lengths prior to conversion to DC would result in greater system losses. It was also considered that construction and operational efficiencies can also be realised more effectively for a single location. However, this needs to be weighed against the impact within the local environment of creating one large site within the landscape against multiple sites within the landscape.

A cluster of sites would have separated consents for AC and DC and potentially provide more ability to expand the footprint in the future. However, opportunities to amalgamate work packages such as earthworks would have been lost. This arrangement would have also increased interconnecting cable complexity.

Dispersed individual sites presents potentially less challenging site optioneering given the smaller area required for a single site. However, dispersed sites leave little option for realising any of the advantages of co-location and efficiency of shorter cable lengths.

Taking account of the summary pros and cons, co-locating was the project preference. Alternative technical options considered as part of the design development are discussed in detail in **Chapter 4 - The Site Selection Process and Alternatives**.

2.7 Conclusion

The Proposed Development is a National Development that is supported by national 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.