APPENDIX 13.1 – SSEN TRANSMISSION OVERVIEW

13. SSEN TRANSMISSION OVERVIEW

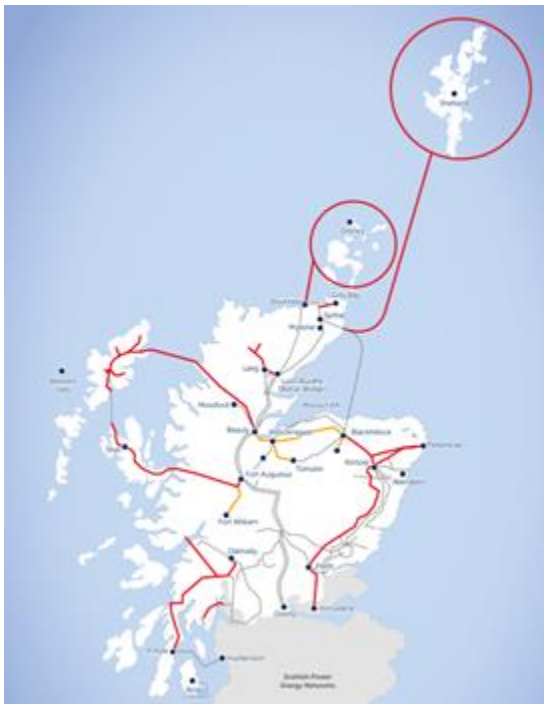
13.1.1 SSEN Transmission maintain and invest in the high voltage electricity transmission network in the north of Scotland. The network consists of underground and subsea cables, overhead lines on wooden poles and steel towers, and electricity substations, extending over a quarter of the UK's land mass crossing some of its most challenging terrain.

13.1.2 SSEN Transmission power communities by providing a safe and reliable supply of electricity. This is achieved by taking the electricity from generators and transporting it at high voltages over long distances through the transmission network for onwards distribution to homes and businesses in villages, towns and cities

13.1.3 The total generation capacity connected to the north of Scotland transmission system is doubled during the RIIO-T1[1] period (2013 – 2021) to 8.1 Gigawatts (GW) by 31 March 2021. The SSEN Transmission operating area and network in the north of Scotland is illustrated in **Plate 13.1**.

Plate 13.1: SSEN Transmission Operating Area and Network in North Scotland

Source: SSEN Transmission



13.1.4 As part of RIIO-T2[2] (2021 to 2026), SSEN Transmission has Five Clear Goals[3], these being:

- Transport the renewable electricity that powers 10 million homes;
- Aim for 100% transmission network reliability for homes and businesses;
- Every connection delivered on time;
- One third reduction in our greenhouse gas emissions; and
- £100 million in efficiency savings from innovation.

13.1.5 In delivering these goals, SSEN Transmission will:

- Protect customers from uncertainty;
- Involve our customers and stakeholders; and

[1] The RIIO-T1 network price control set out what the gas and electricity transmission network companies were expected to deliver for energy consumers from 2013-2021.
[2] The RIIO-T2 transmission price control came into effect from April 2021 and will run until 2026.
[3] SSEN (2021) You Plan Our Future

- Be open and transparent.

13.1.6 It is forecasted that over the period to 2026, this will cost:

- Total expenditure of between £470 million and £750 million each year; and
- Around £7 for the average Great Britain (GB) household each year.

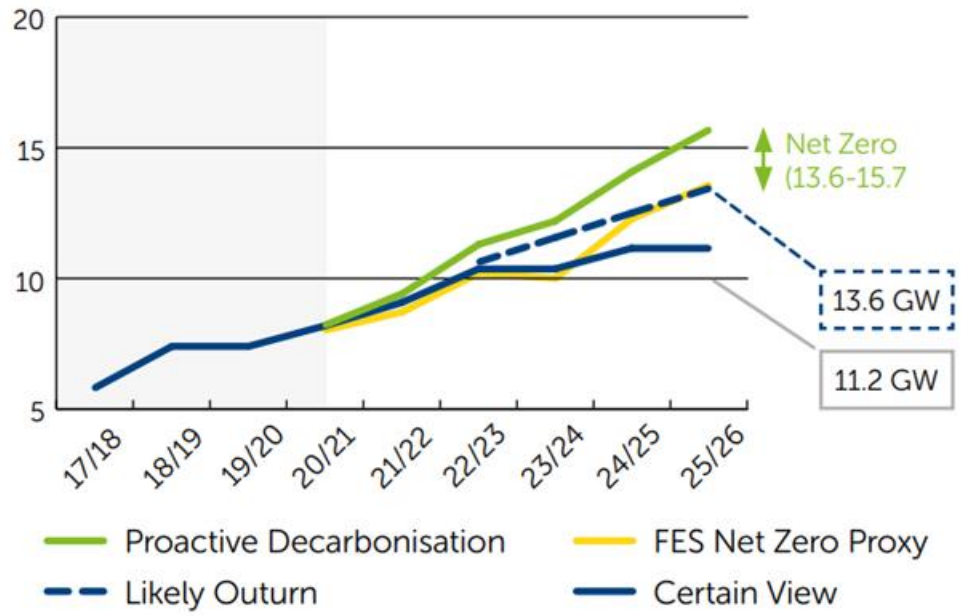
13.1.7 Importantly this investment will directly support the Scottish and UK government's plans for a just transition to net zero in the period to 2050. The largest role SSEN Transmission play in combating climate change is through their part in the GB power sector. Considerable progress has been made in the decarbonisation of electricity generation over the past decade. While this change has been rapid and profound, more remains to be done.

13.1.8 Clean electrification has an important role to play in removing greenhouse gas (GHG) emissions from heat and transport. Smart, flexible grid networks will be an essential part of that transition.

13.1.9 For that reason, the Committee on Climate Change[4] argue that *'A relatively large expansion in [grid] capacity is likely to have low regrets' and consideration should be given to future proofing to achieve net zero emissions targets.'*

13.1.10 The north of Scotland and its islands have a significant renewable energy resource from onshore and offshore wind, hydro and (potentially) marine and tidal. At the end of 2018, 15% of the UK's installed renewable generation capacity was located in the north of Scotland. By the end of the RIIO-T2 period, SSEN Transmission expect 8.1 GW of generation to be connected to the north of Scotland transmission system. SSEN Transmission modelling of the requirements to meet net zero emissions targets indicates that connected generation will increase to between 13.6 GW and 15.7 GW by 31 March 2026 (see **Plate 13.1**).

Plate 13.1: Net zero emissions pathways for generation connected in the north of Scotland (MW)



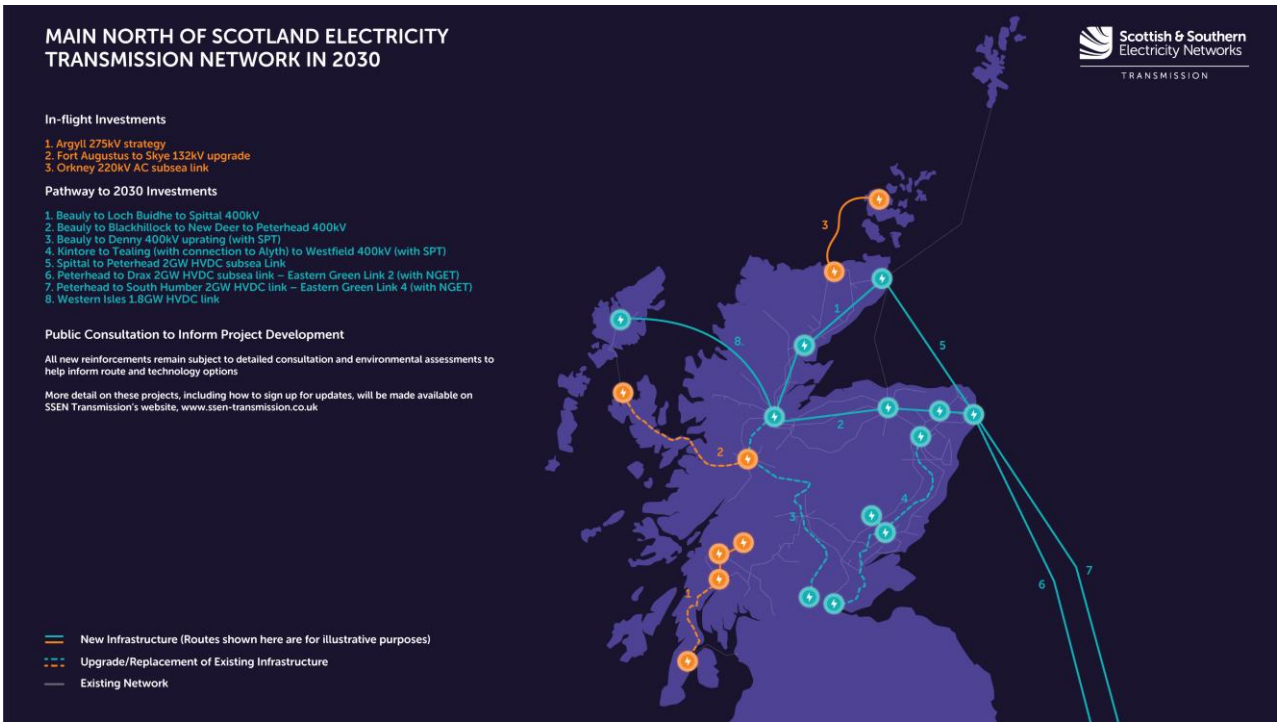
Source: SSEN Transmission

13.1.11 SSEN Transmission investments are part of the wider 'UK Pathway to 2030' strategy[5]. The 'Pathway to 2030' sets the blueprint for the electricity transmission network infrastructure required to enable the forecast growth in renewable electricity across Great Britain. This includes delivering the UK and Scottish Government's 2030 offshore wind targets of 50GW and 11GW respectively, making tangible progress towards net zero

[4] Committee on Climate Change (2019) Net Zero – The UK's Contribution to Stopping Global Warming
[5] ESO (2022) Pathway to 2030

commitments. For the north of Scotland this include a suite of new investments in the period to 2030 (see **Plate 13.2**), also available online[6].

Plate 13.2: Main North of Scotland Electricity Transmission Network, 2030



Source: SSE Transmission

13.1.12 SSEN Transmission directly employ around 1,200 people across the north of Scotland and is significant employer in its own right. Furthermore, the investment plans for the transmission network result in many contracts and further employment benefits. For example, a study of the economic contribution made by the Caithness-Moray transmission project[7] has found that it is supporting the equivalent of over 10,000 years of employment in the UK, around half of which are in Scotland.

13.1.13 Economic modelling found that:

- *Of the £1.1 billion total investment, almost two thirds (£643.5m) will be spent with UK-based suppliers and contractors;*
- *Over a quarter of a billion pounds (£265.5m) in GVA will be contributed to the Scottish economy; and*
- *The Caithness-Moray transmission project will support the equivalent of 10,971 years of employment in the UK, of which 4,975 are in Scotland.*

13.1.14 This position is recreated, in different scales, across all SSEN Transmission investments, and the benefits to local, regional and national economies is significant. In addition, following extensive stakeholder consultation exercise in 2023, SSEN Transmission launched its first Community Benefit Fund on 1st September 2024 aimed at funding a range of projects across the north of Scotland.

13.1.15 Given the huge amount of investment planned as part of the 'Pathway to 2030' network improvements, it is expected that community benefits funds associated with new planned infrastructure will be in excess of £100m; this is subject to the final UK Government guidance and approval from the industry regulator Ofgem.

[6] https://www.ssen-transmission.co.uk/information-centre/pathway-to-2030--delivering-2030-government-targets-and-the-transition-to-net-zero/

[7] SSE (2017) Caithness-Moray Transmission Project – Delivering Economic and Social Benefits