

**Dumfries & Galloway
Strategic Reinforcement
Project**

Conclusions Report

Executive Summary

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EXECUTIVE SUMMARY

This is the summary of SP Transmission’s (SPT) submission to Ofgem our regulator on the conclusion of the analysis work undertaken in conjunction with the System Operator National Grid Electricity transmission (NGET), regarding the need to upgrade the network in the Dumfries and Galloway region of the south west of Scotland as shown in *Figure 1*.

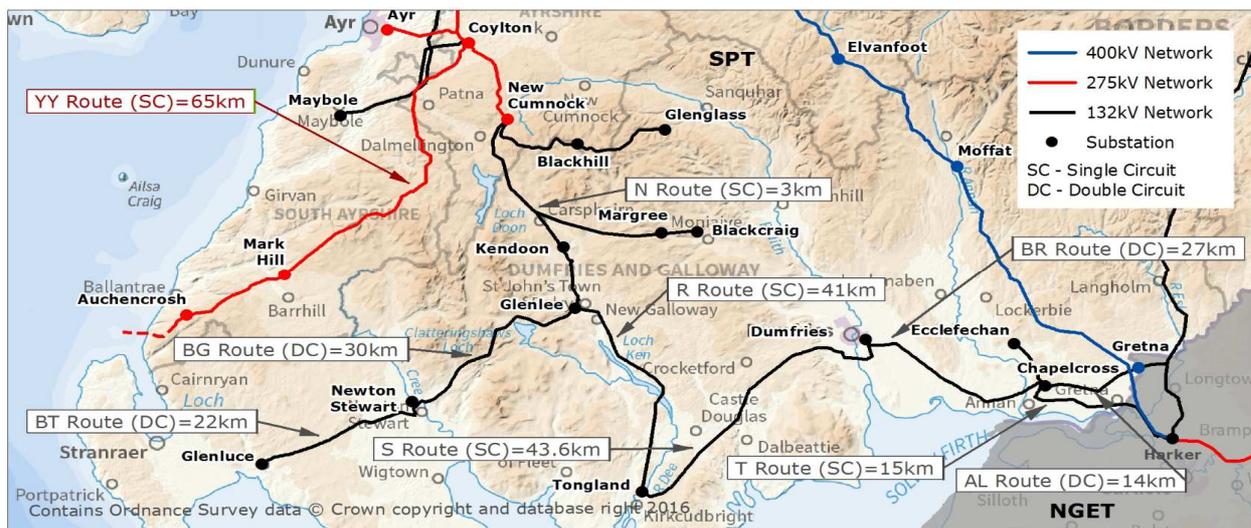


Figure 1: The existing transmission network in Dumfries and Galloway

An initial outline proposal to construct, in full compliance with the National Electricity Transmission System Security and Quality Standards of Service (NETS SQSS), one hundred and seventy five kilometres of 275/400kV overhead line from Harker to Auchencrosh as well as to commission four new substations addressed all of the project drivers, namely the modernisation of the existing ageing 132kV network, provision of capacity for onshore renewable generation and full Transmission Entry Capacity of 500 MW for the Moyle interconnector. Currently there is in excess of 2500MW that is either connected or contracted to connect to the system in south west Scotland over the next eight years. A considerable number of these developments are in the Dumfries and Galloway area, currently in excess of 339MW of embedded renewable generation is connected to the system in Dumfries and Galloway with another 205MW contracted to connect in the future.

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The development of this outline proposal over the last three years has involved extensive stakeholder engagement, detailed technical assessment, optioneering and economic modelling carried out by the System Operator National Grid and supported by SP Transmission.

The outcome of this work is the identification of a recommended solution which is significantly reduced in scope, scale and only partially meets the original project drivers. The scheme now falls below the Strategic Wider Works threshold of one hundred million pounds and will be progressed under a different set of regulatory mechanisms at a future date.

The infrastructure solution we now propose comprises a 132kV double circuit overhead line from Kendoon to Tongland (see *Figure 2*). The existing substation at Glenlee will be extended, a new transformer installed at New Cumnock substation and a future uprating of the overhead line from Glenlee to Newton Stewart may be required depending on the uptake of new generation. Following energisation of the new lines the existing 132kV lines from Dumfries to Tongland and Tongland to Glenlee will be removed.

This 132kV infrastructure will ensure security of supply to existing demand and connected generation customers, and provide sufficient capacity to meet approximately 60% of the contracted new generation in accordance with NETS SQSS. Furthermore, cost benefit analysis carried out with the System Operator (NGET) using their Electricity Scenario Illustrator (ELSI) forecasts that under particular scenarios, and including updated key assumptions for the GB electricity energy market, that in excess 95% of the energy required will be able to flow unconstrained out of the area most of the time.

There are three main factors influencing the substantial change in scope:

1. The proposed construction of an offshore Eastern HVDC link completing in 2023,
2. The anticipated energy flows across the Moyle interconnector that are expected to be almost exclusively from Scotland to Ireland,
3. The expected volume of onshore wind that will connect and the load factor that it will achieve.

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The impact of these factors means that only a reduced investment passes the required economic tests (by comparing the proposed investment costs against the cost of constraining generation further). The investment required to construct an infrastructure solution that would achieve a fully compliant (against the NETS SQSS design standard) is not economically justified. Instead a proposal that modernises the network supported by innovative operational and commercial solutions has been identified as the appropriate option to develop.

Based on the extensive information from National Grid which our team has analysed, we believe this scheme, which we are calling the “Reduced” Scheme, is in the best interests of consumers and is the most economic, co-ordinated and efficient solution for us to develop at this time. However, there are significant dependencies that will need to be achieved if this scheme is to meet customer needs. These dependencies include:

- The development of innovative Regional Active Network Management schemes to allow contracted generation to connect on a non-firm or restricted access basis and be constrained off, if required by the System Operator on a commercial basis
- The approval by Ofgem of derogations against the NETS SQSS standard
- The approval by Ofgem of funding for the GB System Operator to provide balancing services

We are aware that this decision may well impact the investment case for embedded distribution connected renewable energy developers. These solutions will now need to be developed efficiently, effectively and quickly on behalf of our customer base by the System Operator, who has committed to doing so. This innovation will also have implications for embedded generation throughout the United Kingdom where parties are affected by the need for upstream transmission reinforcement and we would encourage our customers to engage proactively and constructively with National Grid in this process, as will SP Transmission on your behalf.

We are already engaging with key parties to develop solutions to meet these requirements and will engage with all stakeholders impacted by these issues. For example, there is a forum for developers and interested stakeholders in Glasgow on the 29th July.

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The Reduced Scheme no longer meets Ofgem’s eligibility criteria specified for Strategic Wider Works (SWW) projects. This submission does not therefore constitute an Initial Needs case submission as the project does not qualify for funding under the SWW mechanism and does not need to be assessed by Ofgem under that process. However, the project raises significant issues of stakeholder interest and we invite Ofgem to consider this submission and express their views on whether or not the preferred solution can be delivered with their support against the funding arrangements we are intending to apply. We do not believe Ofgem requires to approve the progress of the Reduced Scheme but should its assessment highlight concerns or issues, we will address these accordingly.

We intend now to progress this Reduced Scheme, with the next phase of stakeholder consultation taking place this autumn. The scope of works that comprise the Reduced Scheme are shown in *Figure 2* below.

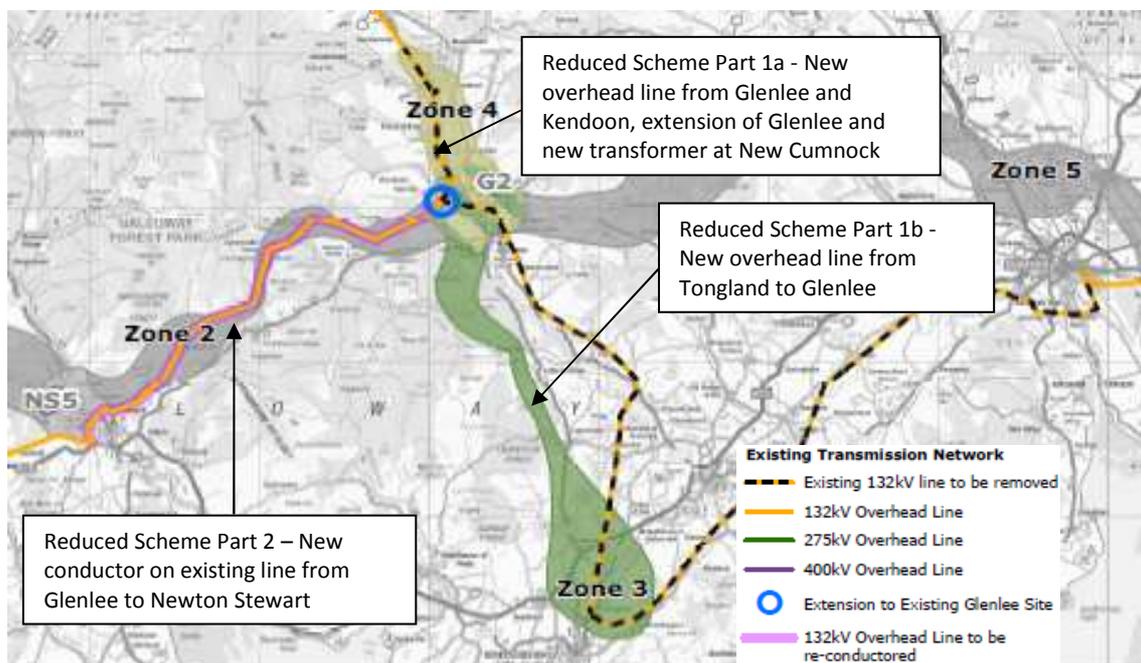


Figure 2: Scope of Proposed Works

Our next steps will be to continue to progress the development of this scheme, engage with key stakeholders and publish the Stage 1 consultation report with responses to feedback received on the route corridors associated with the Reduced Scheme.