

SUBMISSION FROM SCOTTISH HYDRO-ELECTRIC TRANSMISSION LTD

1. Key points

- Scottish and Southern Energy welcomes the inclusion of strengthening the electricity transmission system in the new National Planning Framework (NPF2), and recommends that the Scottish Parliament strongly supports this particular Candidate National Development.
- Upgrading the electricity grid system is vital to facilitate renewable energy and to reduce carbon emissions, as recently highlighted in Scotland's Sustainable Development Commission report on Scottish Government progress towards sustainable development in its consideration of the National Planning Framework¹.
- The bulk of the electricity grid upgrades covered by the NPF2 would be similar in environmental impact to routine maintenance activity, with some substation works and no new major overhead routes.
- Additional grid capacity is not only needed for larger scale renewable projects – it is also essential for small-scale and community level projects from being able to feed electricity into the grid.
- It is important to recognise that the NPF does not remove any project from local planning or consultation processes. What it does do is recognise the broad need for the development as nationally significant.

2. Introduction

Scottish Hydro Electric Transmission Limited (SHETL), part of the Scottish and Southern Energy plc group, is the regulated transmission business which owns and maintains the transmission system in the north of Scotland. Pursuant to both its statutory and licence obligations, it is responsible for the development of that system to accommodate generation customers and the transfer of power from generators to demand-side customers.

The Scottish Government has set a target of generating 50% of the electricity requirement from renewable sources by 2020. Furthermore it is also committed to working towards deriving 20% of all energy use from renewable resources by 2020, in line with EU objectives.

Taking this into account, some of the key elements of the National Planning Framework (NPF2) spatial strategy include:

¹http://www.sd-commission.org.uk/publications/downloads/SDC_Scottish_Second_Assessment.pdf

- To support strong, sustainable growth for the benefit of all parts of Scotland,
- To promote development which helps to reduce Scotland's carbon footprint and facilitates adaptation to climate change,
- To support sustainable growth in the rural economy, and
- To realise the potential of Scotland's renewable energy resources and facilitate the generation of power and heat from all clean, low-carbon sources.

In order to harness Scotland's significant renewable resources, the electricity grid system requires upgrading. Without this, Scotland's renewable energy development potential will falter. NPF2 correctly identifies the need for substantial upgrading of the electricity transmission network if the aspirations of Government and renewable energy generators are to be met.

More specifically, the NPF2 recognises that *'These strategic grid reinforcements are essential to providing the transmission capacity necessary to realise the potential of Scotland's renewable energy resources, maintain long-term security of electricity supply and support sustainable economic growth'*.

The NPF2 also recognises the need for delivering these transmission system upgrades quickly so that significant renewable energy developments can be accommodated onto the system, such that the transmission system does not act as a barrier.

The lack of grid capacity is not only affecting larger scale renewable projects – it is also threatening small-scale and community level projects from being able to feed electricity into the grid.

The proposed Beaulieu-Denny rebuild, currently awaiting the outcome of a public inquiry process, is important in developing a transmission system in the north of Scotland of sufficient capacity to accommodate renewable generation developments. With the upgrade of Beaulieu Denny it will be possible for the further capacity improvements on the north of Scotland transmission system, identified in the NPF2, to be achieved making maximum use of the existing infrastructure and overhead line routes through relatively uncontentious re-conductoring and re-insulation work similar in impact to routine maintenance activity. The Candidate National Development upgrades and reinforcements identified in the NPF2 will all be required if Scotland is to deliver its 50% renewable electricity target by 2020. These projects need to be started very soon in order to be in place by the target date.

Beyond these reinforcements, and to accommodate potential further volumes of renewables, consideration is being given to subsea cabling for point to point transfer of power from coastal hubs for export to England and to link in with the European Grid directly from Scotland.

3. Role and licence obligations of SHETL as a Transmission Owner

There are three transmission licensees in GB: SHETL, SP Transmission Limited (SPT) and National Grid Electricity Transmission plc (NGET). All three licensees are Transmission Owners that own and maintain transmission systems. NGET is also the GB System Operator, responsible for co-ordinating and directing the flow of electricity onto and over the GB transmission system.

All three GB transmission licensees have a duty under the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system for the transmission of electricity. They also have a duty to facilitate competition in the generation and supply of electricity.

The GB transmission licence obliges Transmission Owners to make their transmission systems available for the purposes of conveying electricity. When new users (generation or demand) apply for connection to the GB transmission system, the Transmission Owners are obliged to offer to enter into an agreement for connection that includes details of the work required on the licensee's transmission system.

4. Identification of Reinforcement requirements

Proposals to reinforce the transmission system are developed largely in response to customer requirements, together with an ongoing work programme to maintain and replace existing assets. Since 2000, the dominant driver of work on the Scottish transmission system has been applications for connection by new renewable generation projects.

In 2002, the three transmission licensees undertook a detailed study of how the GB transmission system could be developed to accommodate significant increases in the volume of renewable generation in Scotland. The resulting report proposed options for transmission network development to provide grid capability for new volumes of renewable generation in Scotland.

There was a significant upsurge in applications from renewable generation developers in 2004, in response to which the upgrade proposals were refined to align with the volumes and geographical location of contracted generation.

SHETL has identified grid projects that would provide capacity for around 5GW of new renewable generation in the north of Scotland. These projects include the proposed Beauty-Denny rebuild (currently awaiting a planning decision) and the Inverarnan substation reinforcement in Argyll & Bute (currently under construction). The further projects are currently under design and pre-consenting works.

These reinforcements, included in NPF2, have been identified to meet the needs of contracted generation developments, and to meet the Scottish Government target to deliver 50% of electricity demand to be provided by renewable energy by 2020.

Design and consenting work is currently being undertaken on these projects. The main factors that will determine the timing of construction work are the

granting of necessary planning consents (for both generator and network developments) and the outcome of economic appraisal necessary to secure regulatory funding approval. Planned completion dates extend from 2010 to 2015.

A further study is currently underway to identify the GB transmission requirements that would be required to meet the UK target of 20% of all energy to be met from renewable sources by 2020.

5. SHETL input to ENSG Transmission Investment Options study

The overall approach of industry, OFGEM and the Whitehall and Scottish governments seeking to work in an integrated way to outline necessary infrastructure is a positive and necessary approach to co-ordinating government targets, developer aspirations, market requirements and integrated and funded transmission development.

In 2008, the UK Government asked the three transmission licensees to undertake a study of the development of the GB transmission that would be required to accommodate the UK target of 20% of all energy to be met from renewable sources by 2020. This study builds on the co-ordinated work of the licensees in planning for renewables that was begun in 2000. The licensees' report is due to be completed in early 2009.

The initial conclusions of this study confirm that the necessary projects included in NPF2 for transmission upgrades in Scotland form the basis for meeting and accommodating current and future renewable generation requirements. The NPF2 projects will give Scotland a solid foundation upon which to build for the future. In the immediate term, the included schemes in the north of Scotland allow for around 5GW of renewable generation to connect in the north of Scotland. In the longer term, further renewable generation, whether onshore or offshore/marine technology, can be developed and connected in the area by the use of either offshore subsea cables or by continuing the upgrading of the mainland system.

Appendix The Role of the Regulator And Transmission Upgrades

The electricity and gas industries in GB are regulated by the Gas and Electricity Markets Authority (GEMA), which is supported by the Office of the Gas and Electricity Markets (Ofgem).

GEMA's powers and duties are largely provided for in statute; those relating to electricity are set out in the Electricity Act 1989. The regulator's principle objective when carrying out its functions is to protect the interests of present and future customers.

The Electricity Act 1989 sets out a number of factors which the regulator has a duty to consider when carrying out its functions. The primary duties of the regulator include: the need to secure that all reasonable demands for electricity are met; and the need to secure that licence holders can finance their functions. Further duties relate to economy and efficiency by licence holders, the achievement of sustainable development and long-term energy security.

It is with respect to these factors that Ofgem assesses proposals to develop the GB transmission system. If Ofgem determines that a licence holder's proposals are justified then it will allow the licence holder to recover its costs from its customers.

The three transmission licensees have made two submissions to Ofgem with proposals to develop the GB transmission system to accommodate new renewable generation in Scotland: the Transmission Investment for Renewable Generation (TIRG) review in 2004, and the Transmission Price Control Review (TPCR) in 2005-06.

As a result of the TIRG review, Ofgem determined that SHETL's proposals for Inverarnan substation and the Beaully-Denny upgrade were justified. In 2005, SHETL's transmission licence was modified to include specific funding for the two investment projects.

Further modifications were made to SHETL's licence following the TPCR. These allow SHETL to recover its expenditure on the pre-construction (design and consent) of network reinforcements during 2007-12. In addition, a mechanism was put in place to allow SHETL to recover the cost of network reinforcement. This mechanism (the revenue driver) is triggered when the volume of generation connected in a geographic area exceeds a given level.

In summary, SHETL's transmission licence currently allows funding for the Inverarnan substation project, the Beaully-Denny upgrade project and pre-construction of further network reinforcements included in NPF2. There is also a mechanism to allow recovery of the construction costs of further network reinforcements when trigger conditions are met.

Following the Review of Transmission Access co-ordinated by the UK Government and Ofgem in 2007, Ofgem concluded that it was appropriate to review the current approach to regulatory funding of reinforcements to the GB transmission system. The intention of this review is to put in place enhanced financial incentives on transmission licensees to encourage them to anticipate future demand from generators and invest efficiently to meet that demand. Ofgem published its initial consultation in December 2008, and expects this review to conclude in winter 2009.