SUBMISSION BY NATIONAL GRID PLC

Introduction

National Grid welcomes the opportunity to submit our views on this report. The subject areas addressed in this submission would make it best suited for the Rural Affairs, Climate Change and Environment Committee, Economy, Energy and Tourism Committee and the Infrastructure and Capital Investment Committee.

This submission covers the following areas:

- Decarbonisation of the Electricity Sector
- Reducing Energy Demand and Emissions
- Interconnection and Grid Upgrades
- Transmission Charges
- Fuel Prices and Fuel Poverty

National Grid welcomes the Scottish Government’s commitment to its decarbonisation targets. As the System Operator in Scotland we work closely with both Scottish Transmission Owners and others to facilitate the connection of low carbon electricity generation and to maintain security of supply.

1. About National Grid

National Grid owns and operates the high voltage electricity transmission system in England and Wales and, as National Electricity Transmission System Operator (NETSO), operates the Scottish high voltage transmission system. National Grid also owns and operates the gas transmission system throughout Great Britain and through the low pressure gas distribution business, distributes gas in the heart of England to approximately eleven million offices, schools and homes.

In the UK, National Grid’s primary duties under the Electricity and Gas Acts are to develop and maintain efficient networks and also to facilitate competition in the generation and supply of electricity and the supply of gas.

Through its subsidiaries, National Grid also own and maintain around 18 million domestic and commercial meters, the electricity interconnector between England and France, and a Liquid Natural Gas importation terminal. In addition, the wholly owned subsidiary National Grid Carbon Limited has advanced the transportation and storage elements of the Carbon Capture and Storage (CCS) supply chain.

2. Decarbonisation of the Electricity Sector

National Grid is committed to helping the UK to meet its 2050 targets. We are playing our part in looking at ways to reduce carbon use and addressing the opportunities and challenges of meeting carbon targets in an affordable and secure way.

National Grid has developed a number of different scenarios based on extensive stakeholder feedback that present pathways to meet various environmental targets
to 2020 and beyond. These scenarios are detailed in our UK Future Energy Scenarios published September 2012; Slow Progression, Gone Green and Accelerated Growth. The scenarios were developed in 2012 with considerable stakeholder consultation and input.

Scotland has a far higher proportion of renewable energy generation capacity than England and Wales - 40% in Scotland compared to 4% in England and Wales. In our ‘Gone Green’ scenario we predict the proportions will rise to 67% in Scotland and 23% in England and Wales by 2020 and 79% and 36% by 2030.

To achieve the target for Scotland, set out in the report, of at least 100% of gross electricity consumption coming from renewables by 2020, the ‘Routemap for Renewable Energy in Scotland’ mentioned in section 4.6 of the Report forecasts that 16 GW of renewable capacity will be needed. This is significantly more than the 12.3 GW that National Grid has included in the ‘Gone Green’ scenario.

The Report’s target to demonstrate carbon capture and storage at commercial scale in Scotland by 2020 is slightly more ambitious than National Grid’s ‘Gone Green’ scenario which has a pilot project by 2020 and fully commercial operation of CCS by 2030.

3. Reducing Energy Demand and Emissions

National Grid has undertaken recent analysis looking at the cost optimal routes to meet the UK’s renewable and carbon targets considering the impact on consumers.

For existing properties National Grid believes that the focus from now to meeting the 2020 target should be on energy efficiency and continuing energy consumption reductions through loft and wall insulation, as 40% of properties with lofts still do not have adequate insulation. For gas properties we believe the priority should be to continue converting from conventional to condensing boilers which reduce both gas demand and carbon emissions. These measures could reduce the UK annual domestic gas demand by up to 25%.

As electricity decarbonisation progresses some properties may become suitable for conversion to hybrid heat pumps or gas heat pumps as the technology matures. These heat pumps are beneficial as they produce renewable heat and minimise the need for upstream infrastructure investment on the electricity network. With high rates of fuel poverty in Scotland National Grid believes that this transition to heat pumps will have a valuable impact for consumers and will lower the cost of energy bills.

Off-gas properties should look to replace resistive electric heating, currently in use in 2 million properties, with electric heat pumps once the property is sufficiently insulated to enable the heat pump to perform effectively. For new build properties National Grid believes the focus should be on high thermal efficiency standards and to seek to use electric air source heat pumps and potentially heat networks utilising recovered heat.

A key finding in National Grid’s analysis was that for existing properties, any switch from current heating appliances to renewable heating will require government intervention and incentives (such as the Renewable Heat Incentive) as low carbon
heating technologies are typically more expensive to buy and run than existing appliances and are forecast to remain so in the long term.

4. Interconnection and Grid Upgrades

4.1 Interconnection: we believe that interconnection has many benefits to security of supply, economic operation and the integration of intermittent renewable generation onto the system. These benefits of interconnection include trading of power between sharing reserves and are particularly beneficial when considering increasingly intermittent generation and the ability to move power between countries and markets.

Increased interconnectivity between European regions is essential for connecting the areas of high RES capability to the areas of demand and facilitating the management of generation variability and also in maximising the efficiency of the internal market. Increased interconnectivity also enables the development of regional and pan-European Markets in ancillary services – reserve energy can be optimised by being held on cheaper sources thus driving down costs to end consumers. National Grid is involved in projects to connect GB to Belgium, France and Norway, and we also have connection agreements for third party projects to Norway and France, and also to connect Irish renewable generation to the GB grid.

In order to progress these projects, it is important that there is a regulatory regime in the UK that is compatible with the approach to developing interconnectors in other European countries

4.2 Grid Upgrades: Renewable energy projects and the grid infrastructure necessary to connect them can evoke a great deal of passion within society. It is crucial that stakeholders and affected communities are able to participate in the decision-making process, and understand the balance which needs to be struck between affordability and managing visual impact.

In the Western Isles, National Grid is a key member of the Outer Hebridean Renewable Energy Group (chaired by the Western Isles Council) and, in Orkney, has a timetable of regular meetings with the Orkney Island Council. For both islands, engagement is with the council, developers and other key stakeholders providing guidance on the prospective Grid upgrades, changes in the commercial regime and taking the time to talk to individual project developers and understand the key issues that are affecting them.

4.3 Transmission Upgrades in Northern Scotland Scottish Hydro Electricity Transmission (SHE T) provided notification on 20 December 2012 of their review into a number of transmission upgrades along with the associated programme for delivery. National Grid is working closely with SHE Transmission and each of the affected developers and we will be working together on a number of the options to enable earlier connections wherever possible. The SHE T delays are typically between 2-4 years and National Grid believes that the impact on the vast majority of project developers will be minimal.

The delays identified are to the contracted generation background, which includes all sites which are going through consent, finance, procurement and construction. As a
result there is significant risk of delays or terminations of some of the contracted generation projects.

SHE T have confirmed to National Grid that all transmission projects have been reviewed and that any future review where possible will include seeking to advance the reinforcements where the programmes have been put back. We have engaged with our customers and have issued an initial letter to those that may see an impact on their contracted connection date, confirming that we will be working with them and SHE T to facilitate the earliest possible connection.

5. Transmission Charges

Ofgem’s independent review of transmission charging (Project TransmiT) published proposals for reform in December 2011, including an improved version of location-based charging. Improvements will be made to the formula to take account of the type of generator and how often they are using the network to transmit power, as well as to the treatment of HVDC links (e.g. to Scottish islands). We are leading an industry working group to develop the detail of these improvements, and are on track to submit them to Ofgem in April 2013 for implementation in 2014.

Ofgem sets policy on this and can review the charging regime in a way that National Grid cannot. We must develop charges against the framework that they set. We have been reviewing elements of the charging regime but Ofgem’s review is the only way to bring a more holistic approach.

6. Fuel Prices and Fuel Poverty

In Scotland, National Grid is an established member of Energy Action Scotland Business Supporters Group. Through this network National Grid is a regular sponsor and supporter of “Keeping Scotland Warm” which aims to bring the issue of fuel poverty before the Scottish parliament and highlight solutions. National Grid also sponsor the annual SCARF (Save Cash and Reduce Fuel) school calendar campaign, which aims to encourage pupils to demonstrate ways to save energy at home and their awareness of gas safety.

We also work with a number of other organisations across the UK National to contribute to the policy debate on fuel poverty and we are actively involved in supporting energy efficiency initiatives. In 2009, as part of Ofgem’s publicly stated objective of connecting 20,000 fuel poor households to the gas network by 2013, National Grid agreed a target with Ofgem of providing new gas connections to 5,000 qualifying homes. Having met that target some three years ahead of schedule we have now reset the ‘bar’ and are now aiming for 17,150 fuel poor connections by April 2013. This remains a challenging target but we are confident that with the continued support of our strategic partners we will deliver on our commitment and provide an efficient and economic solution to these energy inefficient and vulnerable homes.

Finally, as part of our price control process for gas distribution (RIIO GD-1) the majority of our customers and stakeholders told us to continue to focus on supporting Government’s targets with respect to reducing fuel poverty. To help remove homes from fuel poverty and particularly rural fuel poverty we believe it is
vitally important that fuel poor schemes are aligned with other Government initiatives in this area.

National Grid
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