

SUBMISSION FROM SSE

SSE welcomes the opportunity to provide written evidence to the Committee.

SSE is a UK-listed utility and the broadest-based energy company in the UK. SSE's core purpose is to provide the energy people need in a reliable and sustainable way.

In Scotland SSE is one of the largest generators of electricity with around 3,300MW of installed capacity made up predominately of 935MW of onshore wind; 1150 MW of hydro; 300MW of pumped storage; and 1,180MW of thermal capacity at its gas fired power station at Peterhead, at which it is also developing, in partnership with Shell, a UK Government sponsored Carbon Capture and Storage (CCS) project.

SSE's subsidiaries Scottish Hydro Electric Transmission (SHE Transmission) and Scottish Hydro Electric Power Distribution (SHEPD) own and maintain the economically-regulated electricity networks serving around 750,000 customers in the north of Scotland and the Scottish islands.

This evidence considers security of supply in Scotland, recommendations to provide stability in the policy framework for the electricity market and an outlook on the transmission network.

Executive summary

1. Scotland is part of an integrated GB wide energy market and security of supply in Scotland should be considered in the context of security of supply across GB. Security of supply across GB is the responsibility of the UK Government and is administered by the System Operator, National Grid. Whilst it is widely recognised that capacity margins have reduced in recent years, the UK Government has designed and introduced policies to maintain a secure electricity system.
2. The GB energy market is at a critical juncture as it seeks to balance the sometimes competing challenges of delivering electricity and gas at a price that remains affordable to consumers and businesses whilst at the same time ensuring secure energy supplies and providing investors with the certainty they require to commit to the required low-carbon investments. Having undergone a period of significant change and uncertainty over the past five years whilst the Electricity Market Reform policies have been developed and implemented, it is now important for industry to enter a period of regulatory certainty and stability. SSE makes four recommendations intended to provide stability and certainty to the policy framework.
 - a. *Ensuring security of supply through the Capacity Market*
 - b. *Setting the Levy Control Framework Budget beyond 2020/21*
 - c. *Stability in the UK carbon price*
 - d. *Equitable transmission charging arrangements*

3. As we move towards a largely decarbonised energy mix the electricity transmission system is going through a fundamental change to accommodate the growth in renewables and alleviate existing constraints on the network. Ongoing and future projects will further enhance market integration across GB and with the rest of the EU, contributing to security of supply.

A VIEW ON SECURITY OF SUPPLY

1. Security of supply across the GB electricity market is the responsibility of the UK Government and is administered by the System Operator, National Grid. These organisations, along with Ofgem, have full visibility of the market; and therefore design, implement and operate the mechanisms through which a secure electricity system is maintained. It is important to note that Scotland sits within a single GB electricity market with a single system operator and it is in this context that security of supply should be considered.
2. Ofgem has noted that capacity margins have reduced in recent years, a trend which is likely to continue until 2018. This is as a result of several factors, including weak market economics and the impacts of EU and UK regulations closing down plant.
3. In recognition of this the UK Government, together with National Grid (as the System Operator), and Ofgem has designed and implemented two mechanisms, the aim of which is to ensure that there is sufficient capacity to maintain a secure electricity system; i.e. keep the lights on. These are the Contingency Balancing Reserve (comprising the Supplementary Balancing Reserve (SBR) and the Demand Side Balancing Reserve) and the Capacity Market. In addition to these mechanisms National Grid already has the ability to manage moments when demand outstrips supply through a range of different balancing and optimisation tools.
4. In the short-term, the SBR is intended to ensure that there is sufficient generation capacity available to meet the Government's Reliability Standard set at a Loss of Load Expectation (LOLE) of 3 hours per year.
5. In the medium to longer-term, the first Capacity Market auction held in December 2014 enabled the UK Government to procure the volume of capacity the GB system needs for 2018-19. Subsequent annual auctions will enable the UK Government to continue to procure the capacity required to meet its Reliability Standard, providing an enduring solution to keeping the lights on across GB.
6. Under both mechanisms DECC and National Grid determines how much capacity is required to ensure the Reliability Standard is met. Once this volume has been set they signal this to the market, and then procure the necessary capacity through a competitive auction/tender process.
7. SSE supports both the Capacity Market and the Contingency Balancing Reserve and believes, if they are implemented correctly, they will make a significant contribution to maintaining secure electricity supplies across GB.

Security of supply in Shetland

8. The Shetland isles are not connected to the GB mainland but they are operated as part of the wider GB market arrangements. SSE plc's subsidiary SHEPD currently carries out the function of System Operator on the island distribution network, although this is outside the formal role of a Distribution Network Operator. As the main generating plant that currently provides reliable capacity in Shetland is nearing the end of its operational life, SHEPD is currently working with Ofgem to deliver an open competitive process to identify the most economic and efficient future arrangements to provide a secure and reliable electricity supply to customers on the islands.
9. SHEPD is also working with Ofgem to determine the best approach in considering the timing and potential impact of the installation of a transmission cable link connecting the islands to the GB mainland, recognising that the island network would need to be capable of operating during planned or unplanned outages on a single circuit cable.
10. The historic Reliability Standard on Shetland has provided a slightly better standard of security than the 3 hours LOLE on the GB mainland. If a cable is installed connecting the islands to the GB mainland, the Reliability Standard will default to that of the rest of GB. Therefore, for the purposes of the competitive process for the new generation solution for the islands, SSE believes it is appropriate and has proposed that the GB standard of 3 hours LOLE is used.

THE ELECTRICITY MARKET

11. The GB electricity market has recently undergone the most extensive reforms since privatisation, which have fundamentally changed the policy climate to support the transition to low carbon energy and ensure security of supply, at a cost affordable to consumers. SSE makes the following recommendations in terms of the future of the electricity market.

a) Ensuring security of supply through the Capacity Market

In order to provide the necessary confidence to investors it is crucial that there is a period of relative stability in energy policy to enable the necessary investments to meet future energy needs. In particular, it is crucial that the Capacity Market is maintained as an enduring policy to ensure the UK Government can procure sufficient capacity to meet demand from 2018 onwards. Changes to this mechanism must be considered and proportionate, given the importance it has in maintaining existing plant and, in time, supporting new investments. At its core, the Capacity Market should continue to take a technology neutral approach to competitively procuring capacity at the lowest cost to the consumer.

In the preceding years before 2018/19 the SBR has been introduced to ensure sufficient capacity before the introduction of the Capacity Market. Whilst SSE strongly supports the continuation of the SBR as an interim measure, SSE does have some concerns about the inability of the SBR to procure truly additional plant and is supportive of current modifications being progressed to ensure the SBR procures genuinely additional plant.

b) Setting the Levy Control Framework Budget beyond 2020/21

Renewable energy will play an increasing role in meeting the energy needs across Scotland and GB, and the need for policy certainty and stability applies equally to the transition to low carbon generation. However, there remains an element of uncertainty regarding future budgets to support the transition to low carbon and there are two recommendations SSE believes should be progressed to provide low carbon investors the certainty they need to take forward future investments:

A principal concern is that there is no sight of the Levy Control Framework budget beyond 2020/21. For low-carbon investors this makes it challenging to commit to any projects which are due to commission in the next decade as there is no certainty about the level of support available. SSE therefore recommends that the next UK Government should commit to providing visibility of future allocation round budgets for both the established and less established technology pots. At a minimum, the UK Government should provide a budget for two allocation rounds in advance on a rolling basis.

c) Stability in the UK carbon price

Finally, SSE believes that market-based carbon trading is the most efficient way to encourage low-carbon generation and reduce carbon emissions from the energy sector. However, at present the mechanisms to set the carbon price at the EU and UK levels have not delivered a robust and stable carbon price and action is needed.

Whilst reform of the EU Emissions Trading System is due to take place in 2019 with the introduction of the Market Stability Reserve, in the interim period SSE suggests that the next Government introduces a stable and consistent carbon price by setting the Carbon Price Floor over a five year time-frame, not subject to any change in that period. This will reduce the potential for political intervention, provide long-term certainty to the carbon price paid by consumers, businesses and generators; and help to encourage low-carbon investment.

d) Equitable transmission charging arrangements

As we move towards greater market integration across the European Union it is important that GB generators can operate on a level playing field with their European counterparts and one area that SSE believes needs to be addressed is that of transmission charging.

Whilst historically it may have made sense to incentivise generation to be located closer to areas of demand, as we continue to progress towards a market with greater deployment of renewable generation and associated network infrastructure build, the transmission system will increasingly take electricity from areas with the greatest renewable resource to the areas that need it.

Electricity generators in GB pay on average up to €2.5/MWh per annum to access the transmission system, however, the majority of European Member States do not charge their generators to access the transmission system and of those that do, charges are set at a far lower price (€0.5/MWh per annum or less) than that paid by GB generators. The variance in capacity related transmission

charges paid by generators can be seen in Figure 1 below. In fact GB is one of only three markets in the EU that levy these charges.

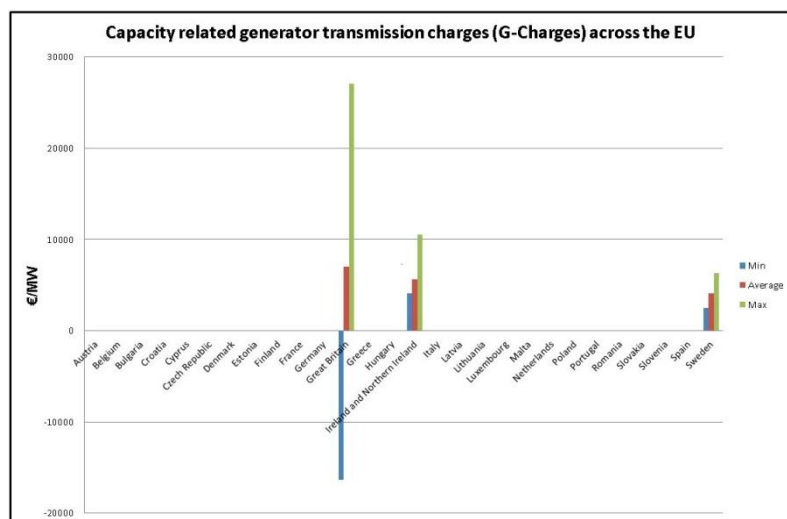


Figure 1. Capacity related transmission charges across the EU (ACER 2014)¹

As can be seen in Figure 1, the GB overall €2.5/MW per annum average figure masks the wide differences in the charges paid by generators in Scotland (up to £25,540 per MW per annum) and those in West Devon and Cornwall who, rather than paying to use the transmission system, actually receive £5,804 per MW per annum for using the transmission system. This creates a real market distortion for GB and will ultimately encourage developers to locate where they do not pay to use the transmission system.

Whilst the changes to transmission charging proposed through Project TransmiT (legal challenge notwithstanding), will result in more cost reflective charging for all generators, including those in Scotland, the changes proposed still fall short of equalising transmission charges across GB (and across Europe).

In line with the direction of travel within the European Union, SSE supports the harmonisation of the structure of the transmission charging regimes across all the 28 European Member States and, ultimately, the alignment of transmission charges between GB and the other Member States across the single electricity market. This will ensure the cost efficient deployment of generation assets, lowering the overall system cost for consumers over the long term by maximising the renewables resources available across Europe.

THE TRANSMISSION NETWORK

12. The lack of capacity on the electricity transmission network can mean that not all the electricity generated in Scotland can be transported to centres of demand. The significant investments therefore that are currently being made in the transmission network, including the Beaulieu-Denny, Caithness-Moray and Western HVDC projects, will help to alleviate this pressure. These projects will

¹ Agency for the Cooperation of Energy Regulators (2014) – Opinion on the appropriate range of transmission charges paid by electricity producers

provide significant additional capacity to allow power to flow both north and south across the border, helping further secure Scotland and GB's energy requirements.

13. Scottish Hydro Electric Transmission (SHE Transmission) is the licensed electricity Transmission Owner in the north of Scotland and over the next few years will be investing around £2bn, with the potential to increase this significantly in response to the needs of large scale electricity generators. Transmission network investment is directed in response to demand from electricity generators to connect to the transmission network and the need to either upgrade existing transmission network infrastructure or, in some cases, construct new transmission assets.
14. A total of 3800MW of renewable generation has been connected to SSE's transmission and distribution networks in the north of Scotland with a further 800MW-1000MW expected to connect by 2017. Another 8GW-9GW of renewable generation is currently contracted to connect to SHE Transmission's network over the next decade with the final connected levels dependent on progression of schemes across a range of technologies – onshore wind, Island wind, offshore wind, hydro, wave and tidal. Overall, this represents a substantial contribution to meeting Scotland's and GB's energy needs and Government targets.
15. In response to demand from onshore renewable generators to connect on the Scottish islands, SHE Transmission is also developing proposals to construct new transmission links to both the Western Isles and Shetland. To ensure development of these links the prospective contracted generators require certainty regarding the CfD strike price and EU state aid clearance before SHE Transmission can prepare robust 'Needs Cases' for submission to Ofgem.
16. Significant work has already been carried out by SHE Transmission to develop the cable solutions for connecting the Western Isles and Shetland to the GB mainland for prospective commissioning dates in 2020/21 to suit the wind farm developers. However, SHE Transmission is concerned that Ofgem's recent proposals for Integrated Transmission Planning and Regulation (ITPR) may interfere with the planned delivery of the works for the prospective generator commissioning dates.
17. As an active participant and member of the Scottish Islands Renewables Delivery Forum, SHE Transmission is working with all relevant parties to progress both island connections and, providing policy certainty on CfDs and ITPR is resolved this summer coupled with continued developer commitment, SHE Transmission stands ready to submit 'Needs Case' applications to Ofgem later this year.

THE ROLE OF PUMPED STORAGE

18. Traditionally, UK pumped storage facilities have been used to bridge relatively short term variations in demand. As they were designed mainly to cope with brief imbalances in the grid, none of the existing schemes has sufficient storage volume to generate at full capacity for an extended period.

19. However, as we move to a largely decarbonised energy mix and the quantity of variable renewable generation increases (e.g. wind, wave and tidal), it is forecast that pumped storage plants will need to move towards longer running cycles to store and release the energy generated during frontal weather events and to take energy from the grid during periods of over-supply and generation.
20. SSE's Coire Glas project has been developed a site which allows storage to be maximised, with flexibility to pump and generate at the right times to make the best use of the available renewable generation. The scheme has been developed with an installed capacity of up to 600MW and a storage volume of up to 30GWh which would allow the station to run at full capacity for up to 50 hours.
21. However, there is currently no clear route to market for new pumped storage facilities and SSE therefore backs calls from Scottish Renewables² to establish an intergovernmental panel to consider how the technology should be supported.

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² http://www.scottishrenewables.com/media/uploads/140529_scottish_renewables_pumped_storage_position_paper.pdf