

SUBMISSION FROM ABB

Question 1: What role will new generation that is under construction, or has been consented play? The Scottish Government aims to have a “largely decarbonised electricity system by 2030.” What does this mean in practice, and are there sufficient tools in place to bridge the move from fossil fuels to renewables?

With around a quarter of the UK's existing generation capacity – mainly coal and nuclear power stations – scheduled to close during the next decade, new generation that is either under construction, or has been consented will have an important role within the wider energy system. Maintaining adequate generating capacity is a critical element in maintaining secure energy supplies.

In Scotland, the power generation mix will be made up by more intermittent generation such as wind. This raises additional challenges in terms of meeting demand at all times, for example when the wind does not blow. Although renewable sources, in general, offer a more responsive generation network, as they can be dialled up and down according to need, it is important that Scotland can continue to access flexible sources of power generation, such as more conventional sources power generation from the wider UK energy system to maximise energy security.

ABB recognises the Scottish Government's aim for a largely decarbonised electricity system by 2030. However, industry requires long term certainty and stability to foster investment . While such an ambition would likely support some investment towards supply chains and skills, ABB believe that there also needs to be more detailed plans setting out hard and fast, tangible proposals to achieve this objective.

Projections suggest that there are sufficient projects within the Scottish pipeline to bridge the move from fossil fuels to renewables. However, power generation is only one aspect of the debate. Transmission networks and energy demand side response methods also have an equally important role to play in securing Scotland's energy security.

Question 2: How predictable peak demand is at present, and how is this likely to change in the coming decade. In particular, what impact will the development of demand side response have? What could be done to improve developments in this area?

Energy demand side response is critical to the delivery of a sustainable long-term energy system. ABB believes it is vital that both the UK and Scottish Government's continue to support the development of viable storage systems as the costs of energy storage continues to fall. Research by Imperial College suggest that at a whole system level, the benefit of several emerging energy storage systems now outweighs the typical cost. Nevertheless, energy storage systems are not being developed. Market rules and regulations make it very difficult for developers to secure value from across the supply chain to make the necessary financial return to justify the investment.

The value of energy storage is typically maximised when located close to demand. The Scottish Government might therefore consider developing, in conjunction with

industry, a commercial energy storage strategy for Scotland. This strategy should outline the government's long-term commitment to energy storage mechanisms, including the identification of potential strategic storage locations.

ABB has a considerable track record and project data on the cost-effectiveness of energy-efficiency measures in both industrial and building contexts. ABB believes that the scale of the opportunity for implementing SMART energy solutions remains very significant in Scotland. We can provide an introduction to real customer implementation on a confidential basis if further evidence of our success is required.

Question 3: A number of new transmission network projects are currently under construction or being planned. What role will these have in securing electricity supplies, and where should future investment be directed? What role might the distribution network, and a single European electricity market play in securing supplies?

A reliable and resilient transmission network will enable more power generation, whether renewable or fossil, to be connected to the system improving power flow and thus security of supply. ABB has considerable experience in supplying transmission network solutions. For example we will be delivering nearly 160km of transmission cabling and a series of HVDC converter stations as part of the Caithness Moray link, which will connect the electricity grid on either side of the Moray Firth.

However, the lack of a strategic investment plan for critical grid infrastructure will potentially undermine investment in much needed power generation plants because of perceived risk and competing investment requirements. Already we are seeing bankable renewable projects facing delays due to lack of access to the grid or alternatively having secured access but not the required subsidy support to deliver a viable project. Grid delays can also have an adverse impact on businesses where reinforcement requirements can have a significant barrier to new connections. We are therefore keen to see a system that enables reasonably justified anticipatory investments across the transmission and distribution network.

The uncertainty in project pipelines, has a potential impact on supply chain investments. Investment in supply chains, resources and skills required to deliver major infrastructure has a long lead time. Strong local markets will generally impact on the location of where investments are made. With other European countries having already started to adopt long term grid investment plans, ABB is concerned that Scotland and the UK may fall behind.

Question 4: A number of significant changes to the electricity market have recently been finalised and are being put in place to ensure competition and cost reflective prices for consumers. Are policies such as the Capacity Mechanism under Electricity Market Reform adequate, and what other long term signals might be necessary to ensure security of supply?

Yes. ABB believes that the underlining principles of the Capacity Mechanism under Electricity Market Reform are adequate and the results of the first auction suggest that the overall mechanism should deliver value for money in the long run. However, the first auction also demonstrated that the mechanism is suffering some teething

problems, notably in the bidding process. ABB believes that this process will become more robust in subsequent auctions.

Question 5: Any other matters concerning security of supply that you would like to bring to the Committee's attention.

Although Scotland operates successfully within the UK Single Market, the issue of security of supply is fundamentally a regional issue. The risk of potential black or brown outs are generally localised and a result of a failure in transmission network and/or a lack of secure indigenous power generation. However, National Grid has continually stated that there is enough power generation in the network and there is no evidence to suggest otherwise.

For Scotland, interconnectors play an important role in balancing the power network. Looking forward, strengthened interconnectors may be required if Scotland's power generation and storage capacity continues to become more distributed.

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