

SUBMISSION FROM ENERGY UK

6 May 2015

About Energy UK

Energy UK is the trade association for the energy industry. We represent over 80 members made up of generators and gas and electricity suppliers of all kinds and sizes as well as other businesses operating in the energy industry across the whole of the UK.¹ Together our members generate more than 90 per cent of the UK's total electricity output, supplying more than 26 million homes and investing in 2012 more than £11 billion in the British economy.

Energy UK covers a diverse range of issues within the energy industry via its various committees and working groups. This includes affordability and vulnerability; energy efficiency; environmental issues; European policy; health and safety; smart metering; wholesale markets and trading; energy industry codes; planning; microbusinesses; connections and charging.

Energy UK also runs a number of nationwide campaigns on behalf of our members. These campaigns include the Home Heat Helpline which offers free, confidential and independent advice to people struggling with their energy bills; CO Be Alarmed! which aims to reduce the number of deaths and injuries caused by carbon monoxide; and My Energy Credit which seeks to raise awareness amongst energy consumers of credit which may have been left behind with a previous supplier.

Energy UK has a range of members which are either based or have operations in Scotland (a full list is included in the annex). We hold a series of committee meetings in Scotland throughout the year (Generation; Electricity Markets and Trading; Renewables; and Electricity Codes) and engage with the Scottish Government, Parliament and other stakeholders including Scottish Renewables. We will also be reconvening the Scottish Committee over the coming months which will provide further opportunity to engage on key issues relevant to Scotland.

Security of supply is at the heart of what Energy UK's members deliver for their customers via the investment they make in network and electricity generation infrastructure. We therefore welcome the opportunity to submit a response to this inquiry.

Executive Summary

- Security of supply must be assessed in relation to the level of interconnectedness between different parts of the whole GB electricity system, rather than just in terms of generation and demand within any specific geographical region. As the GB system is further interconnected with the rest of Europe and the internal energy market is completed, security of supply, for example in terms of capacity adequacy, is likely to be further assessed at a European level.
- Security of supply is managed via a whole system approach with a single System Operator who is responsible for managing the constraints and system operability

¹ This response was developed by the Energy UK's Generation Committee which does not include National Grid or any network businesses.

challenges faced in different parts of the country including Scotland. The ability to call on resources across the Grid ensures that demand and generation can be balanced across the whole of GB.

- This role will be enhanced to a more strategic role following the conclusion of Ofgem's Integrated Transmission and Planning Regulation project. Under the changes, the System Operator will be required to assess options for meeting the future needs of the network and for new interconnection, and support joint decision-making process with other TOs on system needs. This will benefit the management of the whole GB system.
- Capacity margins, in GB as a whole and in Scotland, have been tightening in the last few years. However, it is worth noting that we have one of the most secure systems in the EU with no regional or countrywide blackouts in recent history due to insufficient capacity. Furthermore, we believe that the right policy measures have been put in place via Electricity Market Reform, primarily the Capacity Market, to set the investment framework needed to maintain long term security of electricity supply. It is important that EMR is kept broadly in the same format following the UK general election to ensure investor confidence.
- In the long term, the UK needs a combination of flexible generation, demand side response measures and electricity storage. The Government must ensure that the right holistic policy and regulatory framework is in place to enable new technologies to compete in the market on an equal footing.
- There are a number of system challenges presented by the transition to a lower carbon energy mix, particularly with high penetration of variable renewables, such as the need to maintain safe frequency and voltage levels. A number of services are required by the System Operator including reactive power, frequency response, voltage control and inertia to manage these challenges. These are currently being procured by the System Operator with attention being given to regional needs, as well as the GB system as a whole.
- The transmission network projects under way (Western HVDC Link and Beaulieu-Denny reinforcement) will provide relief to the current constraints on existing transmission between England and Scotland. There could also be potential for future interconnection between Scotland and other markets, such as Norway, but these must be cost-effective. There are a number of impacts arising from greater interconnection between the UK and other markets which need to be understood.

Inquiry questions

Supply and whether there is sufficient generation to meet demand, in particular to the end of the decade. 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?

- 1.1 There are a number of aspects to security of supply, one of which is the amount and type of capacity on the system. However, this needs to be assessed on a system-wide basis along with an assessment of the level of interconnectedness between various regions of the UK. Capacity and network requirements cannot be assessed on a purely isolated basis. The UK Government has ultimate

responsibility for GB security of supply and sets the Reliability Standard (i.e. level of electricity security of supply that consumers are willing to pay for) and the amount of capacity required to meet that standard.

1.2 Capacity margins, in GB as a whole and in Scotland, have been tightening in the last few years due to a number of fossil fuel power stations closing or mothballing. However, the right policy measures have been put in place via Electricity Market Reform, primarily the Capacity Market, to set the right investment framework needed to maintain long term security of electricity supply. This should ensure the right blend of existing and new investments. As EMR has only been in place for less than a year, we believe that it is important to maintain stability so that investment decisions can be made. Therefore we welcome that proposed changes to the CfD and Capacity Market schemes have been limited by DECC. It is also important that the EMR framework is maintained without major changes following the UK general election to ensure investor confidence.

1.3 Scotland's ambition to have a largely decarbonised electricity system by 2030 is not inconsistent with the ambitions of the UK government, albeit a specific 2030 target has not been agreed. The key difference is the Scottish government's preference for achieving this ambition largely through the deployment of renewable technologies, primarily wind and marine but also with a role for CCS, whereas the UK as a whole is aiming to develop a mix of low carbon technologies, including nuclear.

1.4A DECC report from August 2012 sets out the challenges for the electricity system up to 2050 in order to meet carbon reduction targets.² It sets out that a number of 'balancing technologies', namely demand side response, storage, interconnection and smarter networks will need to start being widely deployed in the 2020s.

1.5 Energy UK agrees that there will be new challenges to security of supply throughout the 2020s as further thermal power stations close. There will need to be sufficient baseload and peaking capacity available to support and operate beside the variable generation on the system. This should be provided by a combination of flexible generation, demand side response measures and electricity storage. The UK government must ensure that the right holistic policy and regulatory framework is in place to enable new technologies to compete in the market on an equal footing.

*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?*

2.1 Peak demand is becoming increasingly more difficult to predict and is shifting, due to the number of factors that now impact it, including weather, energy efficiency, embedded generation and demand side response measures. TV pickup also varies with availability of download and watch when ready capabilities. Managing these challenges is the responsibility of the System Operator.

² Electricity System: Assessment of Future Challenges (DECC, August 2012):
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48549/6098-electricity-system-assessment-future-chall.pdf

2.2 There are a number of policies being rolled out to improve demand side response, including full and transitional Capacity Market participation; National Grids' Demand Side Response Balancing Reserve. This is in addition to the ancillary services and TRIAD avoidance opportunities. Government needs to monitor how successful these policies are in increasing participation of demand side response in the electricity market.

2.3 As identified in a recent DECC review, more strategic consideration and integrated supply and demand side approach needs to be given to realising the potential benefits of demand side, storage and decentralised generation.³

2.4 The rollout of smart meters, for example, will facilitate greater public engagement with energy consumption and in combination with innovative supplier tariffs, such as time of use, should help increase demand side response so that peaks in demand can be flattened out. Smart grids will take this a step further by bringing increased automation to this process.

*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?*

3.1 The transmission network projects under way (Western HVDC Link and Beaulieu-Denny reinforcement) will provide relief to the current constraints on existing transmission between England and Scotland. Over the longer term it is important that only cost-effective transmission and distribution assets are built.

3.2 In addition to the existing Moyle interconnector between Ireland and Scotland, there is potential for an interconnector between Norway and Scotland, which would enable Scotland to import cheaper hydroelectricity. However, any interconnection needs to be cost effective and we note that the NSN link being developed by National Grid and Statnett is going ahead which connects into Blythe so a system-wide case for a further interconnector to Norway would be needed.

3.3 A single European electricity market should ensure that interconnector flows to and from GB are efficient and flow according to where the price is highest. However, there are a number of impacts arising from greater interconnection between the UK and other markets which need to be understood. Energy UK has been undertaking work to look at the various GB and EU developments, such as the EU network codes and Ofgem's Cap and Floor regulatory approach, which impact on interconnector investment; and the security of supply and decarbonisation impacts. We would be happy to share the output of this work with the Committee when completed.

3.4 Following the conclusions of its Integrated Transmission and Planning Regulation project, Ofgem has decided to enhance the role of the System Operator so that it plays a greater role in identifying the network needs of the whole GB system, providing information to and closer cooperation with the

³ DECC Review of demand side policy landscape and modelling:
<https://www.gov.uk/government/publications/review-of-demand-side-policy-landscape-and-modelling--2>

Transmission Operators, and also assessing the best places for interconnection. Energy UK believes that there would be benefits to an enhanced system operator but given National Grid's commercial interests in interconnection, Ofgem must ensure that there is protection from any perceived conflicts of interest.

*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?*

4.1 Energy UK believes that the right policy measures have been put in place via Electricity Market Reform, primarily the Capacity Market, to set the right investment framework needed to maintain long term security of electricity supply.

4.2 We note that there are other policy and regulatory changes which impact investability and therefore impacting on security of supply. These include Ofgem's reforms to 'cashout', which aim to incentivise more efficient balancing; Ofgem's new cap and floor regulatory model for new interconnector development under which up to 5 new interconnectors to GB could be built.

4.3 National Grid is tendering for last resort balancing services via the Supplemental Balancing Reserve and Demand Side Balancing Reserve for the period up until the Capacity Market starts delivering in 2018. Whilst this can provide a means of retaining plant that is mothballed or is danger of doing so, Ofgem and National Grid must ensure that procurement and operation of SBR does not distort the energy market. Ofgem and Government should also make sure that SBR is withdrawn following winter 2017/18 as the Capacity Market is expected to deliver capacity thereafter.

Annex: list of Energy UK members with an interest in Scotland

Centrica

CRF Hydro Power

DONG Energy

E.ON

EDF

First Utility

Flow Energy

GDF Suez

Good Energy

Haven Power

Intergen

National Grid

Natural Power

Opus Energy

RES

RWE npower

Scottish Power

Smartest Energy

Spark Energy

SSE

Stag Energy

Utilita

Utility Warehouse