

## SUBMISSION FROM VATTENFALL

**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?**

Scotland is on track to achieve 50% of its target of 100% renewable electricity by 2020 in 2015. There is approximately 4GW of offshore wind consented, 4GW onshore wind consented or in construction and 4GW in planning (September 2014, Scottish Renewables). Wind energy, particularly onshore given the shorter lead times and more mature industry, is the low cost, homegrown and clean solution to securing Scotland’s energy supply in the short to medium term. This new generation is central to achieving Scotland’s aim of a decarbonized electricity system by 2030 and right framework must be in place to bring these projects forward. Vattenfall alone has an onshore development pipeline that could deliver 500MW by 2021.

Increasing interconnected wind power across the UK as coal plants come offline will deliver improved security of supply and minimize price rises for the consumer – a scenario where wind replaces end of life coal and nuclear, prices rise by 4% vs a 8% rise where gas replaces old plants.<sup>1</sup>

1 <http://www.renewableuk.com/en/publications/reports.cfm/Impact-of-Wind-Energy-on-UK-Energy-Dependence-and-Resilience>

The CfD framework, under EMR, is the principal tool – for the long term - to bring forward renewable generation. As well as encouraging more mature technologies like onshore, solar and offshore wind, the right development of the framework will support the development of ocean energy which will have a role to play in decarbonizing Scotland’s electricity system into the 2020s.

Key adjustments to the framework for future auction rounds to ensure a continued pipeline of renewables to replace fossil fuels are:

- Clarity around available budgets, auction timings beyond 2015 and post-2020 strike prices is required as soon as possible post-election
- Extension to period between CfD award and Milestone Delivery Date
- Better signaling of available budget and impact of revisions to forward price curves
- Clarity on DECC’s post 2020 vision for the CfD framework, in particular the timing of move to technology neutral auctions

More formal, coordinated and transparent involvement by the Scottish Government in setting the direction of travel for UK energy policy and designing renewables incentives, as outlined in the draft Scotland Bill (Clause 40), should help to ensure both policy and the CfD framework better support the achievement of Scotland’s objectives.

However, care must be taken not to solely focus on deployment levels to meet targets and the framework required to support and deliver this. Increased deployment of renewables needs to be supported by efforts to better integrate them into the market and to design the market to accommodate increasing amounts of variable renewables.

In the medium term, increased interconnection between Scotland and the rest of the UK and between Scotland and Europe, is an essential complement to a low carbon, indigenous energy mix. Delivering increased interconnection to Europe, in particular to pumped storage hydro in the Nordic countries, is a significant opportunity to develop storage and flexibility at scale in the medium term as well as more effectively balancing European renewables and smoothing price spikes for the consumer.. Vattenfall is a partner in the NorthConnect project, the proposed 1400MW interconnector between Peterhead and Norway which is crucial in increasing Scotland's interconnected capacity in the medium term. Evidence suggests that there is a clear socio-economic case for all parties for more than one Nordic/UK interconnector. A clear commitment from the Norwegian Government to allow private ('merchant') cables must be made in 2015 to allow NorthConnect to move forward.

In the UK, the West Coast bootstrap scheduled for 2016 will better support Scotland's ability to export and balance renewables with the rest of the UK.

It is worth noting that the shift to decarbonised energy supplies is likely to (or at least should) lead to a reduction in energy demand but *increased* demand for electricity within that as more heat and transport services are powered by electricity. The widespread adoption of electric cars and increased electrification of heat are crucial to the achievement of the emissions targets set out by Scotland's Climate Change Act although the Committee on Climate Change recognizes that significant progress is still to be made in these areas<sup>2</sup>.

2 <http://www.theccc.org.uk/publication/reducing-emissions-in-scotland-2015-progress-report/>

So, in the longer term and as a complement to DSR across power, heat and transport, storage in its many forms, will be a key tool in integrating renewables to the grid and will help provide supply at peak times. Vattenfall is currently piloting a 1.6MW battery connected to a solar plant in Brandenburg. As well as supporting DSR to come forward under future Capacity Market auctions, Scottish Government should continue to support the development of storage projects to ensure they are commercially viable, particularly at scale, in the 2020s and support Scotland's move to a reliable decarbonised electricity system.

**How predictable is peak demand 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?**

An increased supply of variable energy sources to the grid will need to be matched with Demand Side Response (DSR) measures to match demand with generation and to reduce overall demand. Increased DSR will reduce the need for investment in

peak generation and reduce the need to curtail renewables. A successful smart grid roll out will lay the foundations for a smarter UK grid that integrates renewables cost effectively. These measures will also help to manage an increasingly decentralised energy system.

**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?**

Vattenfall welcomes moves by the new European Commission to strengthen the European Energy Union and continue the journey towards completion of the Internal Energy Market (IEM). This will play a key role in reducing the EU's dependence on non-EU supply. A crucial part of this is ensuring the strengthening of EU ETS with the early implementation of the Market Stability Reserve to address the short term imbalance in the market caused by oversupply of allowances. A properly functioning ETS can efficiently deliver deep cuts in CO<sub>2</sub> emissions and should be the principal instrument to promote low-carbon measures towards the Scotland, the UK's and the EU's decarbonisation objectives.

As more renewables come onto the grid, it will need to be increasingly flexible to manage the higher quantity of variable power. Increased flexibility on the grid will also help address peaks in demand, and grid instability. Encouraging developers to provide ancillary services to grid will contribute to the increased flexibility required. Vattenfall has reactive power capabilities at Ormonde and Thanet Offshore Wind Farms, and is also looking at similar provisions for Pen y Cymoedd Onshore Wind Farm. We are undertaking a European wide review of ancillary services, after which time we expect to roll out a wider range of provisions across our portfolio. Through this, we are doing what we can to reduce system costs and our impact on the grid, and enable a greater penetration of renewables.

**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?**

Vattenfall does not support Capacity Markets in principle and believes that security of supply in the electricity market is best ensured by transparent and undistorted market prices to all actors in the energy and balancing markets. Capacity markets) will impact the traditional energy-only market, could undermine incentives to invest in interconnection and are potentially at odds with the single internal energy market. Adequacy and security of supply in the long term is best secured by a good market design with clear and proper price signals.

However, the UK Capacity Market is now in progress. The inclusion of interconnected capacity in the 2015 auctions is a significant step forward. UK capacity should also be permitted to participate in foreign CRMs as and when these

come forward. This will help limit the distortions of the single energy market and prevent expensive, inefficient solutions.