

## SUBMISSION FROM UNISON SCOTLAND

### Inquiry into security of energy supply

#### Introduction

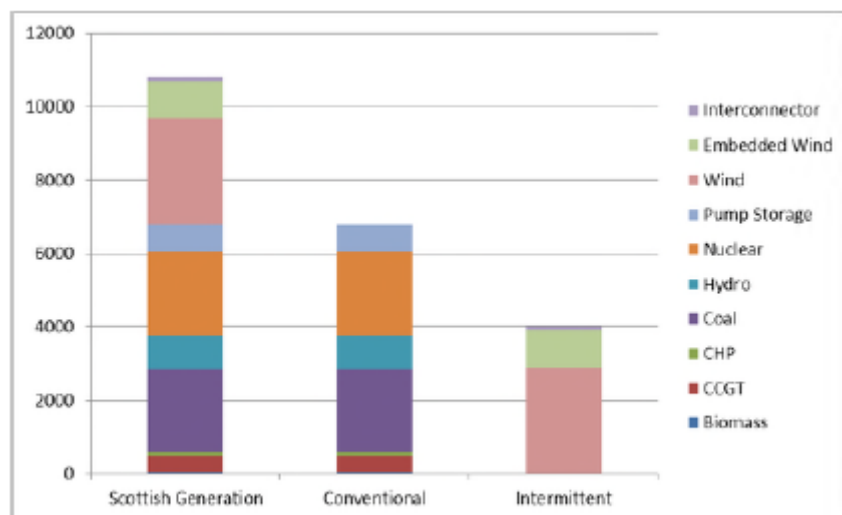
UNISON is Scotland's largest trade union in the electricity and gas industry. We also represent staff responsible for planning and implementing fuel poverty strategies. We therefore welcome the opportunity to contribute to the Economy, Energy and Tourism Committee's inquiry into the security of energy supply.

UNISON Scotland's broad approach to the issue is set out in our policy paper, 'Scotland's Energy: Scotland's Future'<sup>i</sup>. In that paper we warned of the risks to security of supply in Scotland and the likelihood that we would need to increasingly rely on imported electricity. We argued for a planned energy policy that provides safe, secure and sustainable generation, which contributes to the economic future of Scotland and eliminates fuel poverty.

#### Supply

The Committee asks whether there is sufficient generation to meet demand, in particular to the end of the decade.

National Grid calculates<sup>ii</sup> that there is 11GW of capacity in Scotland compared with a 5.4GW peak demand. On paper that is double our requirements. However, that is not the whole story. As the chart below shows, a large proportion of that capacity is intermittent supply, mainly onshore wind. Self evidently that only contributes to the grid when the wind is blowing. The largest consistent source of supply comes from conventional power stations.



The challenge for Scotland is that most of our conventional power stations are scheduled for closure and there are no firm plans to replace them. Cockerzie has closed and although there is planning permission for a gas power station, no one believes it will actually be built and alternative uses for the site are being proposed. Longannet is to close early for a variety of reasons<sup>iii</sup>. That not only takes a big chunk of generation off the grid, but also an important balancing capacity as it can be brought on and off line quickly. Peterhead gas station is effectively mothballed and we can only hope that the CCS pilot comes to fruition, but the endless delays are not encouraging. That leaves nuclear that has

traditionally provided our baseload generation. Due to Scottish Government planning policy there is no prospect of replacement plants, which means we are highly dependent on life extensions to the aging reactors.

Renewables have been developed rapidly, but this has largely been onshore wind and new sites are running up against greater public resistance. Marine renewables have great potential as Scotland has up to 25% of Europe's tidal power, 10% of its wave power and around 25% of the offshore wind resource potential. However, the collapse of Pelamis was a setback for the sector and as Renewables UK put it, "*These technologies are developing at a time when we've got a privatised electricity industry and it means that the amount of money available to invest in research and development technology isn't at the same level we would have seen in the past.*"<sup>iv</sup>. Renewables should be supported, but we also need to be realistic about what it can achieve<sup>v</sup>

From a trade union perspective the energy industry has been an important source of quality jobs and we would want to ensure that it remains a Scottish export - so balancing supply and demand within Scotland is not enough. Scotland now relies on England to keep the lights on when the wind isn't blowing and that reliance is bound to increase. In the three years from 2012 to 2015, Scotland relied on English power for part of 231 out of 1036 days, or one in five. For seven days in each year, Scotland imported electricity from England for a full 24 hour period.

In the long term energy storage may deliver a solution to this. Recent battery products such as Tesla<sup>vi</sup> may offer a better solution by capturing wind and solar power rather than making constraint payments. However, despite many optimistic projections, renewables have not delivered the anticipated number of quality jobs. In particular, the failure to achieve local manufacture of wind turbines.

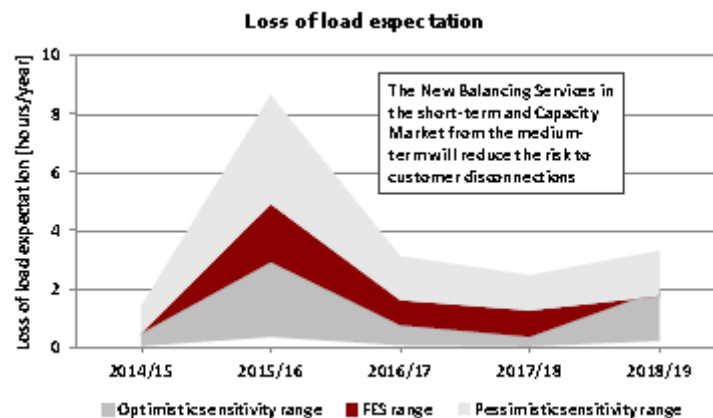
We also need to address the ownership and control of energy together with the role of community energy. In our submission<sup>vii</sup> to the Scottish Government draft Statement we pointed to the relatively small scale efforts made to date to encourage community energy ownership. The ambition is modest, lacking proposals to seriously diversify ownership in Scotland. The next big step requires support for local authorities to return to their 19th century role as an energy provider. They can do this on their own or in partnership with cooperatives. This model brings significant benefits to communities across Europe with lower energy prices and income generation for public services. Scotland should move in the same direction.

In summary, our supply concerns are that we are not planning for a balanced energy generation policy that will ensure security of supply in all conditions. In the short term at least, we are highly dependent on life extensions to our nuclear power plants. We believe it would also be prudent for National Grid to contract with Longannet, in addition to Peterhead, to help maintain voltage capacity on the grid.

## **Demand**

Ofgem's Electricity Capacity Assessment assumes that demand will continue to decline in the next five winters, but that this is cancelled out by deteriorations on the supply side as a result of further plant closures and mothballing. Their sensitivity analysis shows that the de-rated margins could vary between around 2% and 8% in 2015/16. Under National Grid's scenarios, loss of load expectation increases from less than 1 hour per year in 2014/15 to a maximum of around 3 to 5 hours per year in 2015/16. Ofgem's analysis shows a larger range of risks - as much as 9 hours per year as the chart below shows.

While these margins are low historically, they do not indicate an immediate catastrophe, unless there were significant generation outages or supply problems from interconnectors to Europe.



There is a limited array of Scottish data, although we are aware that National Grid has stress tested the Scottish network and rates the chances of failure as a 1 in 600 year event. The Scottish Government paper<sup>viii</sup> on Scotland’s contribution to energy supply paints a more pessimistic picture, emphasising the 2% margins and pointing to the economic consequences of an energy shortage. As everyone, including DECC, rely on the modelling done by National Grid, there are no checks on system analysis.

When considering demand side measures we should remember that the cheapest unit of energy is the one you don’t use. At least 40% of Scottish households are living in fuel poverty. The latest figures show that in 2013 in Scotland there were 940,000 households in fuel poverty, compared with 647,000 households in 2012. This would point to a radical series of measures including support to local area based energy efficiency schemes, retrofit existing properties, particularly in the growing private rented sector, as well as building more energy efficient new homes.

## Transmission

There are a range of investments in transmission and distribution systems aimed at strengthening the network and enabling electricity to be exported and imported including: Beauldy-Denny; Caithness Moray; Western Link and Series Compensation.

Welcome though these investments are their effectiveness will be undermined if discriminatory transmission charges remain. The cost of sending electricity down the long distance transmission wires is heavily biased towards encouraging electricity generation near where it’s consumed – mainly in the big English cities and London in particular. This is important because Scotland has always been an exporter of electricity, providing quality jobs and contributing revenues to the Scottish economy. This means that if you generate power near London you get a subsidy from the grid. If you generate it in Scotland or the North of England, you pay an additional charge. Ofgem’s Project TransmiT has been reviewing those charges for years and is likely to result in only modest changes. For example, the changes will be too small and too late for Longannet whose transmission costs next year would have fallen from £40m to £34m.

## Electricity Market Reform

The implementation of energy market reform has been hampered by conflicts between the Treasury and DECC that leaves everyone unclear as to who is actually running energy policy. Uncertainty has had a clear impact on investment as highlighted by analysts Pinsent Masons, National Grid, Renewables UK and individual companies in the sector..

Electricity Market Reform was designed to drive investment in our energy infrastructure and manage the transition towards generating low-carbon, secure and cost-effective electricity. It is unclear from early implementation if these aims will be achieved. As the recent House of Commons Energy and Climate Change Committee report<sup>ix</sup> puts it:

*“With over 80% of the successful capacity agreements going to existing generating capacity, including coal-fired power stations, the CfD and Capacity Market mechanisms seem to be pulling in opposite directions, with the Capacity Market risking locking us into a higher carbon and more expensive trajectory than needed. A diversity of sources is clearly desirable, but CfDs and the Capacity Market are in danger of pursuing competing aims rather than complementing each other.”*

In the last couple of years the coal price has halved, and in 2014 the price of gas fell by over a quarter. The wholesale price of electricity in Britain is almost twice the level in northern Europe. We highlight tightening capacity margins above and retail prices have not reflected the underlying fossil fuel prices. Carbon production across the UK has stopped falling as the coal burn has at times reached 40%, pushing out gas. The British electricity sector is therefore failing on all three main objectives: security of supply, carbon emissions and competitive pricing. While EMR is in its infancy, this does not bode well as commentators have pointed out<sup>x</sup>.

## Conclusion

UNISON Scotland believes that we need to have an energy policy that is technically well-founded, with a balanced energy mix. While we strongly support developing renewables, we believe the 2020 target to achieve the “equivalent” of all of Scotland’s energy needs by renewable energy has been unhelpful. Equally, UK Energy Market Reform is tinkering with a system that is broken and in need of more radical reform.

---

<sup>i</sup> Scotland’s Energy: Scotland’s Future – a balanced energy strategy for Scotland. [http://www.unison-scotland.org.uk/energy/ScotlandsEnergyScotlandsFuture\\_Feb2012.pdf](http://www.unison-scotland.org.uk/energy/ScotlandsEnergyScotlandsFuture_Feb2012.pdf)

<sup>ii</sup> National Grid Future Energy Scenarios. Although limited published data on Scotland. <http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/Future-Energy-Scenarios/>

<sup>iii</sup> Utilities Scotland: Longannet - three reasons why its closing early. <http://utilitiesscotland.com/2015/03/24/longannet-three-reasons-why-its-closing-early/>

<sup>iv</sup> Deadline for Pelamis. <http://www.bbc.co.uk/news/uk-scotland-scotland-business-30391102>

<sup>v</sup> Utilities Scotland: Renewables with realism. <http://utilitiesscotland.com/2015/02/07/renewables-with-realism/>

<sup>vi</sup> Tesla battery signals the end for fossil fuels. <http://theconversation.com/the-tesla-battery-heralds-the-beginning-of-the-end-for-fossil-fuels-41197>

<sup>vii</sup> UNISON Scotland. Draft Community Energy Statement [http://www.unison-scotland.org.uk/response/CommunityEnergyPolicy\\_UNISONresponsetoScotGovt\\_Nov2014.pdf](http://www.unison-scotland.org.uk/response/CommunityEnergyPolicy_UNISONresponsetoScotGovt_Nov2014.pdf)

<sup>viii</sup> UK energy policy and Scotland’s contribution to security of supply <http://www.gov.scot/resource/0044/00447981.pdf>

---

ix <http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenergy/664/664.pdf>

x Helm: Competition in the British energy sector  
<http://www.dieterhelm.co.uk/sites/default/files/Competition%20in%20the%20British%20electricity%20sector.pdf>