

SUBMISSION FROM THE JOHN MUIR TRUST

This submission regarding electricity security of supply from the John Muir Trust is following up on some key evidence given to the Economy, Energy and Tourism Committee on 11th March 2015.

Ofgem, National Grid, Scottish Power and Scottish and Southern Energy contributed to that session on Longannet power station and security of supply. Quotes given below come from that session.

SUMMARY

- That evidence highlights that the cost of electricity transmission is only one of several significant costs contributing to the closure of Longannet, including carbon price.
- The evidence reinforces concerns about decreasing security of supply in the electricity grid.
- Another related issue raised in that session is that of the electricity transmission network; how useful transmission upgrades will be in mitigating risk and how they are assessed for value for the consumer as against alternatives.
- Measures which would help quantify and mitigate risks are highlighted, including a National Energy Commission.
- In a rapidly changing political picture, the Committee might consider what the implications would be for decision-making on strategic energy and on a Scottish budget, if energy and transmission costs were devolved to Scottish Government.

Supply

Regarding closure of Longannet, Scottish Power noted that *“the carbon floor price at £18 hitting the plant in terms of all its output; and the **expectation we will pay £170 million this year in carbon taxation..... we pay £40 million to £50 million a year in transmission.**”*

So it is clear that the system of transmission charging is only one factor of many affecting the decision to close Longannet and, in fact, the carbon floor price taxation costs four times the transmission charge. Transmission charges seem to have become the politically-acceptable lightning rod for Scottish dissatisfaction with the functioning of the grid but that evidence session showed a more complex picture where transmission might be more reasonably be described as the straw that broke the camel's back.

National Grid pointed out that *“**we have seen more than 10GW of fossil fuel generation across the GB system close in the past five years.** There is probably another 5GW due to close in the coming few years lot of fossil fuel generation in similar situations. For example, the Barking combined cycle gas power station in London closed last year six months ago. I am setting the context.”* So the closure of fossil fuel stations is occurring throughout GB, including in London.

National Grid said that current generation capacity in Scotland is about 11GW, and the peak demand is 5.4GW and that there are transmission contracts for 14GW. This should be compared with total capacity and peak use of a decade ago. Capacity of different types of generation cannot just be added up and assumed to replace like for like. Load factor and issues such as intermittent production must be looked at.

What role will new generation that is under construction, or has been consented play?

Despite the substantial figures quoted above for Scottish generation and transmission capacities, National Grid stated that, *“Therefore, because of the potential closure of Longannet and some uncertainty about Peterhead power station as well, we have been doing studies jointly with the Scottish transmission companies over the past 12 months, looking at how we can secure the network in a scenario in which both Longannet and Peterhead are not available. Ultimately, we concluded that, at least until some transmission reinforcements are delivered including the western link project, which I think you will be aware of—and particularly to ensure that we can have stable voltage control in some risky but not inconceivable circumstances, we wanted to procure some additional balancing services for 2016...”*

So what role is already constructed wind development playing in balancing supply and demand and will the massive expansion planned help or hinder balancing of the grid? At no time in the EET Inquiry session was it suggested that the very large amounts of wind generation being added to the system would solve the problem. In fact, the unstated issue is that that massive increase in intermittent wind energy production, remote from point of use, IS the problem. So the unspoken background to the problem of worsening security of supply is that the more the percentage of electricity from wind in the system, the more of some other kind of quick response generation is needed – despite the wish to phase out fossil fuels.

Pumped storage hydro power

Frequently, the proponents of *“at least 100% Scotland’s electricity consumption from renewables”* claim that pumped storage will be a major factor in balancing intermittent wind production. **In fact, Coire Glas pumped storage hydro was given consent in December 2013 but so far, no shovel has been made ready.** SSE has made it quite clear that more subsidy is required.

Coire Glas being consented in a rush and then not proceeding is an example of how ludicrous it is to try and construct a new, innovative electricity network through market signals alone at the UK level, while at Scottish level, handing out planning permission without a transparent public consideration which includes both planning concerns such as impact on wild land landscapes but also on overall cost to the public. This seems to be an example of “banking” planning permission when there was no prospect of the scheme going ahead at that time due to the very high costs of pumped storage.

Transmission

Apart from inefficiently keeping old fossil fuel stations on stand-by, the other possible solution which was discussed at the session was expansion of the transmission system. However, note that National Grid said, “*Ultimately, we concluded that, **at least until some transmission reinforcements are delivered including the western link project, ...we wanted to procure some additional balancing services for 2016...***” Note the caveat “*at least*”. National Grid do not appear to be convinced that that will be the final solution. As one engineer put it, it makes no sense to over-engineer the grid for intermittent electricity production as it does little to help with security of supply and it would be cheaper to constrain excess production off. Of course, if new generation is continuously encouraged to be placed in the furthest reaches of the country, then this becomes more difficult.

The Committee might wish to explore further the cost of the proposed further transmission lines for these contracts; whether they address the fundamental security of supply issue cost effectively or whether there are other mechanisms to address this. In particular, **the Committee may wish to consider whether the extensive transmission proposed would be affordable if Scottish government was given overall control of the Scottish part of the grid, including the responsibility for raising the funding for it** whether through taxation; increases in consumer bills or commercial contracts with other parts of the UK and the EU.

Black start situation – what would it mean for Scotland?

Regarding “black start”, i.e. bringing the grid back on from widespread outages, National Grid stated that, “*Looking at Scotland by itself, we think that we can probably do Scotland in 12 to 18 hours with the current black start stations and with Longannet and Peterhead available. If neither of them is available, **it probably pushes Scotland by itself to 24 hours plus.*** That is still within the envelope of the overall GB plan...”

The prospect of a major outage across Scotland for more than 24 hours may be within the overall GB plan but the Committee might wish to consider whether it seems acceptable in a Scottish context. What measures need taken at a UK level to achieve an acceptable risk level for major outages which would impact unacceptably on Scottish business and the public?

Security of Supply

Ofgem stated that “*we rely on generators responding to—in the main—market signals to deliver security of supply, so the market has a very important role. **Our role as Ofgem is both to look at the market rules and make sure that they are appropriate so that generators are responding to those signals and, on occasion when we—often working collectively with DECC and with National Grid—consider that there are issues, as has happened in the recent past, to provide additional tools to National Grid to enable it to deliver security of supply.***”

In other words, Ofgem and the UK government hope the market signals will be sufficient to maintain security of supply but, in the event of concerns about market failure, they will work with National Grid and DECC on extra measures, as they are currently doing in Scotland. This demonstrates that market signals cannot be the

only way of ensuring security of supply and that some government body has to be responsible for it. There seemed to be a lack of clarity about whether that is Ofgem or DECC, currently.

It is worth noting that, even as recently as a few years ago, Ofgem and National Grid were saying there were no concerns about electricity grid security of supply, with regard to the shift in the UK's electricity mix from traditional mix to a heavy reliance on renewable energy (predominately wind generation). The John Muir Trust along with others has been raising these security issues for many years. A significant problem in getting this properly evaluated is the division of responsibility mentioned by Ofgem.

Need for a National Energy Commission

With a privatised energy industry, companies naturally apply for the energy and transmission schemes which will be most profitable for them but that may well not be the best choice for the nation since there is no mechanism for assessing the total costs and benefits of particular developments. Moreover, private companies cannot be expected to propose a less profitable scheme which might contribute better to the national security of supply.

Since generators do not pay the full costs of transmission - with much of the cost being spread between all electricity consumers - building a development in a remote location on cheap land will seem very attractive compared to using a more expensive brownfield site near the majority of consumers. This may be the reason for many industrial-scale onshore wind proposals in the remote areas of Scotland. Although the wind resource is better in some areas, such as Shetland, the resource is poor in others which are still the site for many major proposals, such as Griffin windfarm in Highland Perthshire.

National Energy Commission

An overview of what is required for the public good needs to be taken but there is currently no public body doing that. The John Muir Trust believes that a National Energy Commission should be established to advise government, taking an overview of strategic energy policy and energy planning throughout Scotland, with a parallel body in the UK.

In particular, recognition is needed that not only does the electricity grid need to be integrated but the planned upgrades and new generation need to be assessed together using a Total Systems Cost analysis. This allows the most rational, fully-costed choices to be made. Currently, decisions and planning permissions are made to build generation and transmission separately, without considering the overall implications.

Background on the John Muir Trust

The John Muir Trust is the leading wild land conservation charity in the United Kingdom. Working with people and communities to conserve, campaign and inspire, the Trust is a membership organisation which seeks to ensure that wild land is protected and enhanced and that wild places are valued by and for everyone. The

Trust is committed to policy principles that support the current targets of the UK Government and devolved governments for greenhouse gas emissions reduction. However, the Trust does not support the construction of industrial-scale wind energy developments on wild land or developments that would impact adversely on wild land and does not believe that it is necessary to allow such development to achieve emissions targets. Indeed, the distribution of Scotland's wild land is closely associated with peatlands which plays a vital role in retaining carbon in the ground. More information at www.jmt.org

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