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Dear Stephen,

Consultation – Electricity Capacity Assessment 2014

Transmission Investment is a leading developer and owner of offshore transmission assets. One of our areas of activity is the development of new interconnectors to Britain, including the France-Alderney-Britain ("FAB") project that we are co-developing with Alderney Renewable Energy and French grid company RTE.

We are therefore pleased to have the opportunity to respond to your paper *Electricity Capacity Assessment 2014: Consultation on Methodology* of 28 November 2013.

We have not sought to respond comprehensively to the consultation; however we do have a particular knowledge of the construction and operation of interconnectors that allows us to offer some particular insights in this area. We will therefore restrict our response to the interconnector aspect of your consultation (i.e. questions 2 and 5).

We note that your expectation is to re-use the approach to the modelling of interconnectors applied in the 2013 assessment. This approach involved[1]:

i) A Reference Scenario where there is no net flow on (non-Irish) interconnection. (Non-Irish) interconnectors did not contribute to system margins nor did they reduce the loss of load expectation (LOLE) figure.

ii) Three sensitivity studies with full-power imports, half-power imports and half-power exports on all (non-Irish) interconnectors. In these sensitivities the interconnectors either had an adverse (if exporting) or beneficial (if importing) effect on margins and LOLE figures.

We do not agree that interconnectors should be treated in this way. Interconnectors should always be capable of importing power to help supply consumers in Britain,

[1] Paragraphs 1.30 and 1.43-44 of the 2013 Assessment.

except in circumstances where the connected country itself has insufficient power for its own consumers. The mechanism for ensuring this is called "Emergency Assistance". We note that facilities for Emergency Assistance are already in place with France and Northern Ireland[2] and we presume that Ofgem will insist that it is put in place on all links[3]. Emergency Assistance is a reciprocal service – in other words should a shortfall of generation occur outside Britain, then Britain commits to provide power to the affected system so long as this does not affect consumers in Britain.

The existence of Emergency Assistance means that *at times when it is critical* interconnectors will always have a beneficial effect on British generation margins and LOLE – the sole exception being when the connected country itself is simultaneously suffering from a critical generation shortage.

In order to measure the risk that Emergency Assistance cannot be provided due to simultaneous critical conditions in both countries, there are two possible approaches that can be taken:

i) A theoretical forecast approach. Typically this will involve a monte-carlo simulation of the random outages of thermal generation units and the weather-related variation of demand and renewable generation in both Britain and its neighbours. Models of this sort already exist and, from our own work, we know that they show interconnectors increasing security of supply even when the systems being connected are similar. This is analogous to the way that the creation of a British national grid in the 1940s increased security of supply even though the regional grids being connected had very similar characteristics.

ii) A historical approach. This would involve examining the calls for emergency assistance that have been made and checking whether they have been refused. As shown in the table below, Britain has requested emergency assistance from France some 26 times over the past 8 years. To our knowledge there have been no cases where a request has been refused.

[2] From National Grid website.
[3] We propose that Ofgem should not agree regulatory arrangements or allow exemption requests for projects that do not have agreements in place for emergency assistance.

Table 1: Historical Use of Emergency Assistance between GB and France[4]

Year	GB requests to France for Emergency Assistance	French requests to GB for Emergency Assistance
2004-5	2	0
2005-6	1	0
2006-7	5	2
2007-8	5	4
2008-9	5	2
2010-11	4	0
2011-12	1	0
Total over 8 years	**26**	**8**

Based on the above, we recommend that interconnectors be modelled as always being able to import power into Britain in calculations of system margin and LOLE. If the historical analysis shows occasional failure to provide emergency assistance, or if the theoretical forecasts show a probability that this could occur in the future, then the capacity of the interconnectors used in the margin calculations may need to be de-rated accordingly.

We note paragraph 3.7 of the consultation paper, which states that "National Grid can manage supply deficits through mitigation actions, including the increase of the level of imports and/or reduction of the level of exports", which may be a reference to Emergency Assistance. We do not understand, however, why it then goes on to state that "this type of assistance is not reflected in the LOLE calculation as LOLE provides a measure of the risk of needing the System Operator to intervene to manage supply and/or demand".

This suggests that loss of load expectation (LOLE) has been defined in an unusual way, and we are concerned that persons outside of the industry are likely to misinterpret LOLE as meaning "probability of blackouts" when it actually appears to be defined as "probability that interconnectors need to be used to prevent blackouts". To avoid this confusion we would recommend defining LOLE to mean, in crude terms, the probability of blackouts.

[4] From the annual Balancing Principles Statement Reports

We hope that these proposals provide a useful input to the improvement of next year's capacity assessment. If there is anything that you would like to discuss in more detail please let me know and we would be delighted to assist.

Yours sincerely

Sean Kelly

Partner