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Dear Dan

Interconnection in the Capacity Market

I am writing to you to share our views and analysis on the de-rating of interconnectors for the 2020/21 Capacity Market (CM) auction. In line with our advisory role for the analytical work in the CM and in order to provide DECC with an independent view, we have developed a qualitative methodology to estimate the de-rating factor for each interconnector. Our analysis builds on our expectations for the outlook of our interconnected markets in 2020/21 (e.g. their security of supply outlook, relative wholesale prices levels), the operational regime for interconnectors, the drivers of system stress such as weather and potential correlation of these drivers between interconnected countries, and the technical availability of the cables.

Our analysis builds upon our recommendations last year¹ to assess the de-rating factors for interconnectors for the 2019/20 CM auction, and also draws upon the contents of the 2016 Electricity Capacity Report. We have fed into the development of the proposed methodology for the de rating factors for 2017/18 through discussions with NG and PTE. We have not carried out detailed analysis for 2017/18 instead choosing to focus our analysis on 2020/21 where uncertainties are greater given the greater time distance. I would like to highlight that we are broadly comfortable with National Grid's recommended ranges for the de-rating of interconnectors, and appreciate the transparency shown by DECC and National Grid in sharing information throughout the process.

National Grid's recommended de-rating ranges illustrate a positive shift from last year's range, with all of the interconnector de-rating ranges improving from last year. This assessment aligns with our own analysis, reflecting historical changes and growing market confidence in the performance and capacity of interconnectors. As such, we consider National Grid's ranges for this year to be a shift in the right direction. A summary of our views on each of the individual interconnector de-rating ranges provided by National Grid are included in the table below.

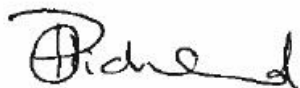
¹ [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/438732/AC to Jonathan Mills - June 2015.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/438732/AC_to_Jonathan_Mills_-_June_2015.pdf)

Table: Ofgem’s recommended de-rating factors for interconnectors in the 2020/21 CM auction

Market (interconnector)	National Grid’s de-rating factor range	Ofgem’s Recommendation	Summary of our views
France	45-88%	55% (IFA) 65% (Eleclink)	These figures are consistent with the figures we recommended last year. Peak prices are expected to be lower in France than GB, but downside risks significant. Introduction of a Carbon Price Floor expected to increase prices, but not above GB prices. Technical availability of IFA is relatively low due to its age. Eleclink assumed to have higher technical availability than IFA.
Netherlands (BritNed)	70-82%	75%	This figure is consistent with the figure recommended last year, due to continued healthy margins and lower prices than GB.
Ireland (EWIC/Moyle)	25-50%	25%	This figure is consistent with the figure recommended last year. We expect increased efficiency on the interconnectors due to market coupling/SEM redesign, and as such this number to increase over time.
Norway (NSN)	76-96%	85%	This figure is consistent with the figure recommended last year. Expected to continue to have significantly lower prices than GB. Technical availability of cable assumed relatively low due to engineering challenges.
Belgium (NEMO)	65-92%	65%	This figure is an improvement from the figure recommended last year. Significant uncertainty surrounds the outlook for Belgium, particularly given the planned nuclear phase-out policy. The return of several nuclear power plants to operation lessens these concerns, but uncertainty remains which could reduce future derating levels.

We welcome your feedback on our views and will be happy to discuss them further with you. We will continue to assist DECC where possible to ensure the CM delivers its objectives and is in the interests of consumers and to play our part in its delivery.

Kind regards,

A handwritten signature in black ink, appearing to read 'Philippa Pickford', written in a cursive style.

Philippa Pickford
Associate Partner, Wholesale Markets, Ofgem

Appendix – Detailed methodology to estimate the recommended de-rating factors for interconnectors

This appendix provides detailed information on the methodology we have developed to estimate the interconnectors de-rating factors for the Capacity Market auction in 2020/21.

Our first step was to take National Grid projections of interconnectors that are likely to be operational in 2020/21 and split them into two groups: new and existing interconnectors. This allowed us to separately consider commercial flows and technical availability, combining the two for the final de-rating factor of each interconnector.

The second step in our analysis was to obtain an estimate of commercial flows for each market. In order to do this we identified a set of factors for each market which are likely to influence the price differentials and subsequently the flows between GB and its interconnected markets.

The factors we identified for each market include:

- Policies expected to be implemented between now and 2020/21 and that might affect price, (e.g. the introduction of a Capacity Remuneration Mechanism in France, the introduction of a Carbon Price Floor in France, and the Carbon Price Support in GB).
- The security of supply outlook for our interconnected markets, informed by similar reports to our Capacity Assessment (e.g. RTE's Adequacy Generation Report for France).

As well as market factors, we also considered the drivers that could result in tight periods in GB and our interconnected markets, such as weather, and the potential correlation of these drivers between interconnected countries.

We have assumed that by 2020/21 North-Western European power markets will be market coupled, including intra-day. This means that we expect flows to reflect price differentials in 2020/21, i.e. power to flow in the direction of the market with the higher price.

After identifying factors and gathering information, we then mapped the qualitative results to de-rating factors indicating expected commercial flows.

In the final step of our analysis, we adjusted the commercial flows to take account of technical availability. These were informed by SKM's study of technical availability of interconnectors and Poyry and Baringa's analysis for their recommendations to National Grid.

Detailed examples of our qualitative findings are displayed in the table below.

Interconnector	Expected outlook for prices	Security of Supply outlook	Drivers of system stress	Technical availability
<i>Existing ICs</i>				
France (IFA)	France planning to introduce Carbon Price Floor from 2017, but this is unlikely to raise prices above GB levels	Implementation of French Capacity Remuneration Mechanism is likely to lead to increased investment in generation Expected to have a healthy security of supply outlook with some downside risks	Fundamentals correlated between the two markets (e.g. demand and weather) High demand sensitivity due to electric load for heating means likelihood of concurrent tight margins not negligible	Lower technical availability due to relatively old cable age
Netherlands (BritNED)	Lower prices than GB due to Carbon Price floor	Healthy security of supply outlook	Medium correlation of fundamentals	Higher technical availability of cable
Ireland (Moyle and EWIC)	Higher prices than GB at times of high demand, due to less efficient peak generation in Ireland	Healthy security of supply outlook for the SEM, but potential issues with Northern Ireland	Strongly correlated fundamentals imply higher likelihood of tight margins coinciding	Higher technical availability due to historic availability (does not consider ongoing problems with one of Moyle cables – extreme event)
<i>Planned ICs</i>				
Norway (NSN)	Hydro based market with significantly lower prices than GB	Healthy security of supply outlook	Low correlation of fundamentals; not thought to pose significant risk	Lower technical availability due to length of cable and engineering challenges
Belgium (Nemo)	Lower peak prices than GB due to Carbon Price floor	Security of supply concerns caused by planned nuclear phase-out policy. Some improvement following return to market of several nuclear power plants, but	Medium correlation of fundamentals; not thought to pose significant risk	Higher technical availability due to cable age

		uncertainty remains. Belgium is currently consulting on how to restore security of supply in the medium- to long-term		
France (Eleclink, IFA2)	Lower peak prices than GB due to Carbon Price floor	Implementation of French Capacity Remuneration Mechanism is likely to lead to increased investment in generation Expected to have a healthy security of supply outlook with some downside	Fundamentals correlated between the two markets (e.g. demand and weather) High demand sensitivity due to electric load for heating means likelihood of concurrent tight margins not negligible	Higher technical availability due to cable age