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Date: 10/06/2015

Dear Jonathan,

Interconnection in the Capacity Market

Further to my letter of 17 November, I am writing to you following your request for our assistance in deciding the appropriate de-rating factors for interconnectors for the 2019/20 Capacity Market (CM) auction. Hereby, I share with you our analysis to inform your forthcoming decision.

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 2019/20 (eg 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. Please see our recommendation for the de-rating factors of the interconnectors in the table overleaf, and the Annex for further detail on the methodology.

We have also scrutinised the methodology and analysis undertaken by National Grid which underpin their suggested ranges. We welcome the transparency shown by DECC and National Grid in sharing information throughout the process. We have a number of concerns with how National Grid has arrived at its ranges for de-rating factors, for example using different and potentially inconsistent analyses to derive the upper and lower limits of the ranges. Notwithstanding our concerns, our recommended de-rating factors are within the ranges recommended by National Grid, with the exception of Ireland, for which we recommend a higher de-rating factor than National Grid's suggested range. We acknowledge however there is significant uncertainty surrounding the future functioning of the Irish market and interconnectors and that a de-rating factor within National Grid's range would not be unreasonable.

The analyses undertaken in the context of estimating the de-rating factors, including our own, therefore suggest that National Grid's recommended ranges are reasonable. And the fact that our estimates are broadly consistent suggests that NG has not unduly favoured its IC business when setting de-rating factors.

We have copied you in to a letter from Dermot to Jeremy which as well as providing a summary of our views on the de-rating factors for interconnectors, reiterates our offer to

help with the development of the policy around the inclusion of interconnectors in the CM. It also reiterates our commitment to advise you on the procurement analysis for the CM and provide an independent view of National Grid's analysis.

Table: Ofgem's recommended de-rating factors

Market (interconnector)	Recommended de-rating factors	Summary of our views
Existing ICs		
France (IFA)	50%	Peak prices expected to be lower in France than GB, but downside risks significant. Technical availability of IFA is relatively low due to its age.
Netherlands (BritNed)	75%	Healthy margins and lower prices than GB.
Ireland (EWIC/Moyle)	25%	Peak prices expected to be higher in Ireland than GB. The non-zero (but low) de-rating factor reflects increased efficiency on the interconnectors due to market coupling/SEM redesign.
Planned ICs		
Norway (NSN)[1]	85%	Expected to have significantly lower prices than GB. Technical availability of cable assumed relatively low due to engineering challenges.
Belgium (NEMO)[2]	50%	Significant uncertainty surrounds the outlook for Belgium, hence lower de-rating factor compared to the Netherlands.
France (eg Eleclink)	60%	Peak prices expected to be lower in France than GB, but downside risks significant. Higher technical availability assumed than for IFA.

I welcome your views on our proposals to work with you and will be happy to discuss them further with you. We will, of course, 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 delivery.

[1] We share National Grid's view that NSN will not be installed in time for 2019/20.

[2] Significant uncertainty surrounding the outlook for Belgium, suggesting caution in the choice of the de-rating factor.

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Kind regards,

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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 2019/20.

Our first step was to take National Grid projections of interconnectors that are likely to be operational in 2019/20 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 2019/20 and that might affect price, (e.g. the introduction of a Capacity Remuneration Mechanism 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 2019/20 North-Western European power markets will be market coupled, including intra-day. This means that we expect flows to reflect price differentials in 2019/20, 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 recent study of technical availability of interconnectors and Bariga's analysis for their recommendation 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
Existing ICs				
France (IFA)	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 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

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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)
Planned ICs				
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; Belgium is currently consulting on how to restore security of supply in the medium- to long-term	Medium correlation of fundamentals; not thought to pose significant risk	Higher technical availability due to cable age
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

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