

Electricity Market Reform: Open letter and consultation on changes to the Capacity Market Rules – response from Moyle Interconnector Ltd

1. Context

Moyle Interconnector Ltd (“Moyle”) owns and operates the 500MW HVDC interconnector between Scotland and Northern Ireland and welcomes this open letter and consultation on changes to the Capacity Market Rules.

Moyle is supportive of the interconnector led approach to cross border participation in the Capacity Market. We note that discussions are ongoing at European level to develop harmonised arrangements for cross border participation in capacity markets but are not optimistic that a more effective generator led approach can be delivered. We therefore expect and believe that the interconnector led approach should endure. Despite our support of the interconnector led approach, we chose to opt out of the first opportunity to participate in the capacity auction¹. This was due to concerns that application of the current rules would not adequately value Moyle’s potential contribution to meeting GB demand at times of system stress. These concerns are twofold:

1. The de-rating factor determined for interconnectors between GB and SEM in 2015 was excessively low and skewed downwards due to application of a flawed methodology.
2. Interconnector participation in the capacity market (in MW terms) would be limited to this de-rating factor multiplied by Transmission Entry Capacity (“TEC”), an approach we do not believe is optimal and which penalises Moyle in particular.

This response addresses the TEC issue at point 2 above, as this can be resolved via a simple rule change. We are therefore responding to questions 1 and 2 of the consultation – we believe this is an issue that has not been considered and should be considered for this round of rule changes.

2. Proposed rule change

The rule which we believe can be easily improved is 3.5A.1 which currently reads as follows:

3.5A.1 The Connection Capacity of an Interconnector CMU is equal to the positive value of Connection Entry Capacity (or, if different, the positive value of Transmission Entry Capacity) stated in the Grid Connection Agreement.

We propose this rule should be changed as follows:

3.5A.1 The Connection Capacity of an Interconnector CMU is equal to the positive value of Connection Entry Capacity stated in the Grid Connection Agreement or, if different, the maximum technical capacity of the Interconnector CMU.

3. Justification and evidence for proposed rule change

3.1 Alignment of treatment with generators

This rule change would deliver equitable treatment of interconnectors in line with that of generating CMUs. There is currently a difference in approach which seems unwarranted. Rule 3.5 *Determining the Connection Capacity of a Generating CMU* only makes reference to TEC in the optional approach

¹ T-4 Capacity Market Auction for 2019/20 held in December 2015

set out at rule 3.5.5, otherwise the default Connection Capacity for “a Generating Unit forming part or all of a Transmission CMU [is] the Connection Entry Capacity stated in the Grid Connection Agreement for that Generating Unit”. Rule 3.6 then requires that Generating (and interconnector) CMUs demonstrate that they have secured TEC “at least equal, in aggregate, to the Anticipated De-Rated Capacity of that CMU”. This provides further support that the reference to TEC in rule 3.5A.1 (and potentially for interconnectors in rule 3.6A) is unnecessary². The underlined text is key as a generator only needs to hold TEC equivalent to its de-rated capacity whereas an interconnector will have its TEC de-rated.

There is discriminatory treatment here as an interconnector with identical characteristics to a generator (for the purposes of the Capacity Market) will potentially have a significantly lower Connection Capacity as demonstrated below:

Connection Entry Capacity: 500MW
Transmission Entry Capacity: 400MW
De-rating Factor: 60%

Generating CMU Connection Capacity = $500 * 60\% = 300$
Interconnector CMU Connection Capacity = $400 * 60\% = 240$

Both technology types can potentially contribute equally to meeting GB demand so the lesser Connection Capacity for the interconnector CMU is unjustified.

3.2 Future relevance of TEC for interconnectors

The current rules for Interconnector CMUs limit participation to a de-rated TEC figure but TEC will not operate for interconnectors as it currently does in 2019 and future years i.e. all years for which capacity is being procured via the Capacity Market.

The CACM guideline³ requires that “*capacity calculation for the day-ahead and intraday market time-frames should be coordinated at least at regional level to ensure that capacity calculation is reliable and that optimal capacity is made available to the market*”.

In practice what this will mean is that available cross border capacity will be calculated much closer to real-time than at present. TEC represents firm long term capacity so is calculated on the basis of being available at all times e.g. Moyle’s current capacity calculation from which its TEC was derived by National Grid is unchanged since 2011. In contrast the capacity calculation envisaged under CACM would take into account factors such as forecast system conditions, weather, demand and supply at specific points in time (i.e. day ahead and intraday) so will vary on a day to day and hour by hour basis. This capacity calculation methodology is currently being developed by the relevant Transmission System Operators and legally binding timelines in CACM dictate that it will be approved by National Regulatory Authorities in 2017 – it will therefore be in use for all relevant years of the Capacity Market.

² We argue that no reference to interconnector TEC is necessary for the capacity market but, if OFGEM still feels it is, 3.6 is the appropriate place for this rather than 3.5A.1

³ Officially referred to as “Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management”.

This is highly relevant to Moyle's participation as it is likely to mean that, when it is most needed, Moyle will be permitted to import to GB well in excess of the 80MW⁴ TEC * De-Rating Factor that participation under current rules would be based on.

To expand on this in a Moyle-specific context, it seems highly unlikely that stress events on the GB system will be correlated with high levels of wind on the system. Local generation to Moyle in GB comprises:

- Arecleoch Windfarm – 120 MW – Connected
- Mark Hill Windfarm – 56 MW – Connected
- Kilgallioch Windfarm – 274 MW – Contracted connection date of 10 November 2017

These wind farms have a negative impact on Moyle's TEC as they have firm TEC but will obviously not be generating when there is low wind. This means that the optimal use of local transmission capacity at times of low wind will be to make it available for cross border flows on Moyle. This issue was referenced in paragraph 100 of the June 2015 EMR Panel of Technical Experts' Final Report on National Grid's Electricity Capacity Report. The panel was unclear of the commercial arrangements around such capacity being made available but these arrangements will exist under the capacity calculation process described above. The panel also could not judge how often this additional capacity could be made available. It should be relatively easy for National Grid to identify the likely co-incidence of system stress events and high levels of wind generation in south east Scotland - intuitively one would not expect this to be high but National Grid (or their/DECCs advisors) could analyse this point as part of determining De-Rating Factors.

Our view is therefore that interconnector participation in the GB capacity market should be linked to CEC rather than TEC. The likelihood of an interconnector delivering up to its CEC at times of system stress will be captured in its de-rating factor. It is therefore inappropriate and unnecessary to further discount an interconnector's potential value by limiting participation through de-rating a TEC figure that is unlikely to be applicable beyond 2019 or at times of system stress.

Annex 1 (pages 4 and 5) of your consultation state:

"Connection capacity represents the maximum output a generating unit can deliver during a stress event."

"Using TEC may also be unreasonable. Plant may be able to deliver above their TEC in a stress event. It may also be reasonable to assume some plant have a TEC which does not represent their maximum capable output during stress, as it was chosen for commercial reasons".

While this is part of a discussion on generator CMUs, these sentences are pertinent to the case we are making here. In Moyle's case the Connection Capacity under current rules is significantly less than the maximum output it could deliver during a stress event. As described, Moyle could certainly deliver more than its TEC (where TEC<CEC) and the fall in Moyle's TEC from 2017 was driven by commercial considerations⁵.

⁴ In January 2011 Moyle accepted an offer from National Grid of 500MW CEC and 360MW (winter) 332MW (Spring/Autumn) and 287MW (summer) TEC – until Oct 2017. Moyle's TEC then reduces to 80MW due to wind farms connecting to the same part of the Scottish transmission system.

⁵ Before TNUOS charging was removed from interconnectors Moyle could not justify paying TNUOS for a large quantity of TEC as the dominant flow direction was into Northern Ireland i.e. there was insufficient demand to justify the cost of the TEC. More recently Moyle has been a net importer to GB and forecasts suggest this will continue. An application to increase Moyle's TEC is currently being considered by National Grid.

4. Proposed definition change

To supplement our initial proposal above, if Ofgem wishes to retain rule 3.6 in its current form (which we do not support) while updating rule 3.5A.1, a change to the definition of de-rated capacity may be required.

De-rated Capacity is currently defined as: *“for any CMU and Capacity Auction, an amount (in MW to three decimal places) equal to the product of: (a) for a Generating CMU or an Interconnector CMU, its Connection Capacity; or (b) for a DSR CMU, its DSR Capacity; and the De-rating Factor, provided that the De-rated Capacity of a Pre-Refurbishment CMU must not exceed the De-rated Capacity of the related Refurbishing CMU”.*

We propose this this definition should be changed as follows:

“De-rated Capacity means, for any CMU and Capacity Auction, an amount (in MW to three decimal places) equal to the lower of:

- 1. Product of: (a) for a Generating CMU or an Interconnector CMU, its Connection Capacity; or (b) for a DSR CMU, its DSR Capacity; and the De-rating Factor, provided that the De-rated Capacity of a Pre-Refurbishment CMU must not exceed the De-rated Capacity of the related Refurbishing CMU; and*
- 2. For an Interconnector CMU or Transmission CMU, the total Transmission Entry Capacity secured by entering into Grid Connection Agreements for the relevant Delivery Year and evidenced in accordance with rules 3.6 and 3.6A”*

The purpose of this change is to avoid the scenario where an interconnector CMU’s de-rated capacity is higher than its TEC resulting in a failure to pre-qualify. This proposal would limit a CMU’s de-rated capacity to its TEC.

5. Impact of not making these changes - Independent modelling

Moyle Interconnector Ltd and EirGrid Interconnectors Ltd jointly commissioned modelling of the GB-Ireland power market by Baringa Partners LLP, in order better to understand the likely future interconnector flows between GB and Ireland. The modelling used the Baringa Pan-European Power Model, which features detailed dispatch of the wholesale electricity markets of western Europe, including Great Britain and Northern Ireland and the Republic of Ireland and mimics the results one would expect to see from Euphemia, the day ahead market coupling algorithm. Anticipated price spreads, interconnector flows, revenues and payouts were reported for a range of scenarios.

Rather than provide you with the full report and a lot of less relevant information here, we have reproduced one pertinent slide as far as the arguments being made are concerned. This shows annual forecast flows across Moyle to GB from 2017 for a range of scenarios including varying Moyle’s TEC to GB. The 3 relevant scenarios are:

- Moyle limited to flowing 80MW to GB
- Moyle limited to flowing 300MW to GB
- Moyle limited to flowing 300MW to GB until 2023, after which it may flow 500MW

As the chart shows, the extent of Moyle’s flows to GB is clearly limited by the TEC assumptions i.e. the underlying economics support more imports to GB than the contracted TEC post 2017 would allow. The lines around the 0.5TWh mark all assume 80MW TEC for all years. The light blue dotted

line shows the 300MW scenario while the darker dotted line shows the 500MW scenario. If flows are not restricted by TEC in line with the points made at 3.2, the modelling therefore suggests that Moyle will provide significant capacity benefit to GB, well in excess of that which was assessed for the 2015 T-4 auction. If Moyle’s participation in future capacity auctions is restricted to [De-rating * TEC] then this value will not be recognised, too much capacity will be procured and the GB consumer will pay more than necessary to secure adequate capacity.

Results



Moyle exports to GB

Exports to GB (TWh)

