

Integrated Single Electricity Market
CRM
Capacity Requirement and De-Rating Factor
Methodology
Consultation Paper
SEM-16-051

Aughinish Alumina Ltd
Response
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This response is non-confidential

1. Introduction

Aughinish Alumina Ltd (Aughinish) as a Large Energy User (LEUs) and the owner/operator of a High Efficient CHP (CHP) plant have been participating in the I-SEM capacity consultation from the start of the target market design. We have been strong supporters of capacity being rewarded based on reliable delivery and of the long term security of the Irish grid. We recognise the importance to Ireland in retaining existing industry and attracting further foreign direct investment by having a world class power supply system.

Judging by the publically available responses to the previous capacity consultations other LEUs appear to have a poor appreciation of the potential to dramatically reduce the reliability of the current power infrastructure. Aughinish have recognised the historic efforts of the Regulatory Authorities (RAs) in maintaining capacity adequacy and noted previously that the 8hr LOLE (Loss of Load Expectation) is not in line with historic efforts. Further the 8hr LOLE is not appropriate for a poorly connected Island with very big generation assets relative to its demand size. We welcomed the decision for participant's capacity allocation to be rerated.

As for our participation in the I-SEM CRM auction we have consistently sought reassurances from the RAs that the Trading Site embedded in Aughinish is treated fairly. The Autoproducer status is somewhat unique to Ireland. The two High Efficient CHP units generate 160MW of electrical power and satisfy the embedded 45MW electrical and 240MW steam demand of the alumina plant inside our 130MW MEC, the resultant 115MW is currently sold to the SEM.

Aughinish ask the RAs to be prudent in their calculation of the capacity requirement and in applying the derating factor. We ask the RAs to consider the relatively low-cost of prudence in an oversubscribed auction compared with the the detrimental effects which could arise from under procurement. In a relatively short space of time the I-SEM will go live and the Irish Interconnectors reliability will be better understood which would allow the RAs to modify derating in an organised fashion without risk of disorderly exits from the market.

2. More Detailed Observations

Capacity Requirement (Least-Worst Regret analysis)

We support the Least-Worst Regret analysis in determining the capacity requirements. The analysis done captures the uneven distribution of the cost of over procurement at a relatively cheap Best New Entrant (BNE) cost and the cost of under procurement at Value of Lost Load (VOLL). We would suggest a further input to this analysis is an estimate of the clearing cost of the I-SEM CRM. In an oversubscribed auction (and further depending on the inclusion of locational distortions), rational economics would indicate the cost of over procurement is substantially less than a BNE cost. A true reflection of this cost might reduce the disorderly exit of marginal units needed to maintain system security.

Capacity Requirement (Assumed Wind delivery)

We would welcome more clarity around the assessment of the amount of power delivered from wind in the modelling of future stress days. If this is based on historical averages, Aughinish would have concerns that high ambient pressure, low wind stress days might be missed in the analysis of capacity requirement. Does the analysis allow for days where wind generation volumes tend towards OMW?

Operational Reserves

Ideally we would argue that reserve and location signals are not an element for the capacity market. These are the responsibility of the TSO who has ultimate responsibility for the system security. However, we recognise the benefit to customers in providing the transparent long term signal to maintain the reserve volume and the benefit in offsetting the alternative long-term measures which might be required by the TSO if disorderly exit was a risk.

Technology Groupings

Aughinish is classified under the Gas Turbine category along with CCGT and OCGT. Whilst we would argue that our CHP technology has proven itself to be more reliable for the last 10 years of operation we also recognise the similarities in the technology.

We are unsure how the RAs intend de-rating the Aughinish TSSU (Trading Site Supplier Unit) as part of our autoproducer.

A fair representation would be to deduct our MIC (49MVA) from our generation assets nameplate capacity before applying a derating based on our generation assets. Perhaps this can be achieved without the need to produce new technology category.

(nameplate – MIC converted to MW)*de-rating factor for a Gas turbine under 100MW

= $(80\text{MW}+80\text{MW}-45\text{MW}) *95.8\%$

= $115*95.8\%$

=110.17MW

This volume has precedent in that our successful offer to the CAP05 capacity auction was for 110MW delivery.

Derating of the generation assets alone for AutoProducers, as is done for Aggregated Units, ignores the TSSU embedded consumption and would exceed the on-site MEC.

Marginal derating curves

Aughinish support the rationale behind the marginal derating curves

Tolerance bands

Aughinish had strongly rejected the HLD consideration around mandatory participation in the CRM based on the fact that a participant is taking on an unknown liability in entering the CRM auction. Since then there has been a cap applied to the annual liability and the decision to include tolerance bands has reduced our concerns. The proposal to set the tolerance band at 0% is not welcome.

It is probable that participants will have a better understanding of their delivery risk than the market authorities. The use of tolerance bands should be allowed or an alternative adhoc method for participants to signal to the market that there are delivery concerns in certain time frames. This facility should be subject to a Market Monitor approval to ensure any de-rating is rational.

For an Autoproducer it is conceivable that the site demand might increase in the four-year period. There might be risk to the participant and to the market in assuming historical deliveries would be maintained. Similar risks are conceivable for co-generation units who's running might be dictated by their host need for useful heat rather than market signals, in a four-year delivery cycle a technology might be replaced for any number of reasons e.g. fuel prices, carbon prices, new government incentives.

Aughinish support the inclusion of real tolerance bands when it can be rationally explained. This is not an exit signal to the market but a necessity to accommodate all technologies and to better inform the RAs.

Interconnector

Interconnector technical availability

The consultation states that the Interconnector technical availability is 'derived from historical data obtained for EWIC and Moyle', it then goes on to exclude the Moyle extended outage period.

Obviously the recently announced EWIC outage goes further to reduce confidence in this technology class.

We ask the to RAs represent the needs of consumers of the two jurisdictions by re-evaluating interconnector technical availability using all of the information available.

Interconnector derating

It seems appropriate take into account the simultaneous scarcity in GB and the I-SEM when derating the IC.

- The weather conditions which could cause a scarcity event in I-SEM would likely exist in GB as well.
- Due to interconnection a scarcity event in one market could cause a scarcity event in the connected market.
- The GB market is facing into a shortage of capacity
- Brexit – is there any circumstance where Brexit negotiated trade conditions could impact on availability of UK capacity on the IC to trade with EU member states?

3. Summary

Aughinish suggest that the RAs adapt a prudent approach to the calculation of the I-SEM capacity and to the derating factor to be adopted initially as we enter the new market. Previous decisions such as the 8hr LOLE have ensured aggressive exit signals will be available after the CRM auction clears. Ireland Inc. would not welcome the consequences of further exits from the market due to an underestimate of capacity requirements or an over estimate of the future deliveries from relatively new technologies on a 1-in-50 stress day.

We speculate that the CRM clearing price will clear under that of a BNE and therefore a lower price should be used in the least-worst regret analysis.

For our autoproduer trading site we seek confirmation that it will be treated fairly, that the power we sell to the SEM will be the power we sell to the I-SEM and that there will be no perverse mandatory selling of power greater than the volume we currently offer to the market. At the same time, we ask that recognition of our onsite demand is maintained in the migration to the I-SEM. We have suggested the following derating would be fair, in accordance with the CRM decisions to date and consistent with our previous capacity award:

$$(\text{nameplate} - \text{MIC}) * \text{de-rating factor} = (80\text{MW} + 80\text{MW} - 45\text{MW}) * 95.8\% = 110.17\text{MW}$$

Aughinish support maintaining tolerance bands and this should be subject to a rational test.

As always Aughinish is at your disposal if further clarification is needed.

Best Regards,
Thomas O'Sullivan
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