Power NI Energy Limited
Power Procurement Business (PPB)

I-SEM

Proposed Locational Capacity Constraints Methodology & Proposed Amendment to the Methodology for the Calculation of the Capacity Requirement and De-rating Factors

Consultation Paper

SEM-17-027

Response by Power NI Energy (PPB)

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Power Procurement Business

Introduction

Power NI Energy – Power Procurement Business ("PPB") welcomes the opportunity to respond to the consultation paper on the proposed Locational Capacity Constraints Methodology for the I-SEM.

General Comments

As we have identified in response to previous consultations, the need to address locational requirements for capacity and system services is essential. It is concerning that there now appears to be multiple arrangements proposed, including the recently referenced[1], but as yet unspecified, "*targeted contracting mechanism*" plus the potential for further targeted DS3 arrangements. It is unclear how this disparate set of proposals has been communicated as part of the application for State Aid Clearance and whether the additional complexity risks the provision of the requisite clearance.

The consultation paper seeks comment on the TSOs' proposed methodologies and asks for alternatives supported by quantitative analysis. This is an impossible ask given both the lack of detail provided upon which to comment and the difficulty any participant would have undertaking quantitative analysis over the short duration of the consultation.

Specific Comments on the Proposed Locational Capacity Constraints Methodology

The methodology seeks to utilise existing information and models to determine the constrained network areas that require generation capacity within them to ensure security of supply.

While the use of these existing tools seems superficially plausible, the more critical questions relate to the assumptions used and the selection of the inputs and whether those tools give coherent results when applied to much smaller network areas.

Level 1 areas

It is clear that NI and RoI are two discrete meshed networks connected by a single interconnector. Clearly these are two Level 1 areas and this is also evident from the Generation Capacity Statement (GCS) assessments that consider each area separately. There remains the question of the Generation Security Standard that should be applied to each area. The TSOs paper suggests that while they recognise that the standards are different in NI and RoI, they plan to use an 8 hour LOLE for each non-meshed area, unless otherwise directed. It is not clear what further direction is required given the Security Standard is already legislatively defined and hence the capacity required for NI must be determined based on the 4.9 hour LOLE that is also consistent with the GCS analysis.

[1] In SEM-17-020 and SEM-17-022

Level 2 areas

The determination of Level 2 constrained areas is a more difficult task and the results of any assessment will be even more dependent on the assumptions and inputs used and on whether the existing models are adequate to conduct the requisite assessment and to produce reliable results.

The first area that requires careful consideration is the Generation portfolio used. It is indicated in section 5.2.3 (inc Figure 4) that the generation capacity will be aligned with the GCS and that "*a large number of portfolios are created to represent as broad a range as possible*…". It isn't clear that this will consider all the scenarios relevant to a localised area since clearly the closure of a generator in the area or in a closely adjacent part of the network represents the more critical and relevant scenarios and all those scenarios would need to be assessed rather than just "*a large number*" which gives no indication whether this represents 5% or 95% of the possible scenarios.

The second area to be considered relates to the Demand used for a region. The GCS forecasts are completed at a macro level but it isn't clear what demand will be used in the L2 network analysis studies. It is also not clear how localised demand growth will be determined since clearly the overall annualised demand growth forecasts will not be relevant for uniform application across all demand areas. This may also be distorted more than usual by the assumptions relating to Data Centres that will cause step changes in demand in the locations where they are established. As a consequence the approaches adopted and the assumptions and forecasts used are likely to have a greater impact when applied to a small sub-set of the network.

A further key area to consider is the tools and models that are used (e.g. PSSE for transmission studies and AdCal for Generation Adequacy calculations). These are normally used on a total system basis but it isn't clear that they will produce reliable results when applied to much small datasets and where small changes in assumptions create much more significant variance in the outputs. The consultation provides no analysis or insight to enable comment on the veracity of the proposed approach. In any event, any "averaging" is likely to distort the results and it would seem appropriate that to be certain of compliance with the requisite standard, it would need to be able to accommodate the worst case scenario.

The consultation paper also gives the impression that it will be just a matter of process and iteration to enable boundaries to be defined. However, there is little to support this assertion and we are concerned that such boundaries may be more volatile and dependent on assumptions than is indicated by the paper.

Finally, the proposition is that the output of the analysis will be a capacity requirement within a L2 area. However, the composition of that capacity must also surely be a key consideration. For example if the requirement in a region was 200MW, it is not clear that satisfaction of this requirement could be delivered from a single generator since it will have outages and during such times the locational need would not be met. The methodology paper makes no attempt to explain how such simple matters will be addressed never mind how more complex network constraints, that may be nested or intersected, will be assessed.

Specific Comments on the Proposed Amendment to the Methodology for the Calculation of the Capacity Requirement and De-rating Factors

It is not possible to provide any meaningful comment on the proposed changes. In relation to the Capacity Requirement, no analysis has been provided to either identify the extent of the variability or what the impact is on the results when the results are determined by averaging. Conceptually, we would not have expected much volatility and hence without any evidence to consider, we are unable to provide any coherent comment.

Similarly in relation to the indicated changes to the De-Rating factors, the paper only provides a high level overview of the changes made to the calculation inputs. Given the magnitude of the changes indicated, we would have expected to have seen a comparison of the inputs between the original analysis and the updated dataset, including a precise description of what the “expanded” statistics are and what the “improvements” are. As a result we cannot comment on whether we agree that these changes are indeed an appropriate expansion or whether we agree that they represent an improvement. It is also unclear how external parameters such as “Net-CONE” affect the De-rating Factors when our expectation would be that a lower de-rating factor should increase the value of the Net-CONE but we do not see any reverse interaction. In order to enable comment, the paper should have set out the data initially used and for each incremental change, the resulting impact therefrom.

These failings must be addressed and the relevant information and analysis must urgently be published for comment.