24 October 2018

Reserve Level Declaration Guidelines Consultation
Australian Energy Market Operator
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Submitted electronically: lor2018@aemo.com.au

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Dear Mr Fox,

AEMO – Reserve Level Declaration Guidelines Consultation

We welcome the opportunity to comment on AEMO's consultation on changes to the Reserve Level Declaration Guidelines (the guidelines) and thank AEMO for running a comprehensive consultation process. EnergyAustralia is one of Australia's largest energy companies with over 2.6 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. We also own and operate a multi-billion dollar energy generation portfolio across Australia, including coal, gas, and wind assets with control of over 4,500MW of generation in the National Electricity Market (NEM).

Identifying Lack of Reserve (LOR) conditions is integral for the secure operation of the power system and as such, it is important that the process is transparent so that participants can understand outcomes and have faith in them. EnergyAustralia recognises the challenges AEMO faces when continually assessing reserve requirements in the NEM. While identifying reserve conditions as early as possible provides additional time for a market response, it is important to ensure that the Forecast Uncertainty Measure (FUM) does not identify an unnecessary number of LOR conditions. We note that the changes proposed in the draft guidelines result in the FUM value reducing in all regions from historical values. We see this as a positive outcome.

Regional Excess Supply (RSX)

We appreciate AEMO's clarification in the draft guidelines that the aggregate capacity of energy limited plant is determined by the Short Term Projected Assessment of System Adequacy (STPASA) algorithm, as oppose to the bid available capacity. While AEMO's current process for allocating energy limited plant is an improvement, the allocation of this capacity could be improved to further reflect likely actual outcomes in the market. Under normal market signals participants are incentivised to ensure that the full capacity of energy limited plants is available in times when AEMO is forecasting LOR conditions. We note that AEMO has provided their methodology for how constrained energy limited plant is dispatched to minimise LOR conditions, but it would be beneficial if AEMO could publish all outcomes of the STPASA process (e.g. all dispatch outcomes and contributions to reserve calculations). This would improve the transparency of the STPASA process and allow participants to examine the energy limited plant allocations and its potential impact on the system. As an example, it would allow participants to

understand the interaction between the output of *'gatekeeper'* energy limited plant and the associated interconnectors. It would also be beneficial for AEMO to provide more clarity around how they dispatch (and in what merit order) generators and the amount imported across interconnectors when determining the remaining allocation to energy limited plant. This could be published in the current STPASA data tables.

EnergyAustralia would like clarity around why AEMO has chosen to define the 50% probability of exceedance (POE) scheduled demand including the output of non-scheduled generating units. We believe that it would be more beneficial to separate the non-scheduled generating units from the embedded generation (e.g. rooftop solar). This would likely lead to a more accurate FUM value and allow the forecast errors to be more easily understood by both participants and AEMO. For the same reason we see that it would be beneficial to separate non/semi-scheduled wind and solar. We propose that AEMO include the non-scheduled generation with semi-scheduled generation and split solar and wind. The RXS for all mainland NEM regions would then be calculated using the following components:

- Aggregate capacity of scheduled generation in the region (C) calculated as:
    - Aggregate capacity of non-energy limited plant, plus
    - Aggregate capacity of energy limited plant, less
    - Aggregate output of non/semi-scheduled wind generating units, less
    - Aggregate output of non/semi-scheduled solar generating units
- Interconnector Support (I).
- Aggregate output of non/semi-scheduled wind generating units (SSW)
- Aggregate output of non/semi-scheduled solar generating units (SSS)
- 50 % POE scheduled demand (D).

To include all these components, the RXS formula would be revised to:

$$RXS = C + I + SSW + SSS - D$$

Where the 50% POE scheduled demand (D) would be comprised of:

- Customer load;
- Output of embedded generating units including rooftop solar generation

But not output of non-scheduled generating units.

It may also be beneficial to extend a similar approach to how the coal/gas fuel-mix is accounted for, allowing forecast errors to be better understood.

RSX errors

Publishing the components of the RXS error over time for each region is useful, however it should be extended to include a discussion as to why AEMO is seeing any noticeable trends or irregular results in the RXS and components. For example, EnergyAustralia would like to understand the step change in CON_GEN_ERROR in South Australia beginning mid-2016.

Input predictors

AEMO has identified a number of key input predictors based on a sensitivity analysis. We understand that AEMO selected the predictors that lead to the largest shifts in the distribution of RXS for each region. We would like to understand if AEMO has given consideration or focused upon input predictors that have had a greater impact when LOR conditions have been present historically? While LOR can occur under any conditions it would be expected that times of interest would be evening peak periods particularly in times of high temperatures. AEMO should consider if the selection of input predictors sufficiently captures the change in sensitivity of the RXS under these conditions.

Confidence levels

We would urge AEMO to continue to be transparent on the selection of confidence levels for FUM values going forward. As AEMO clearly identifies, increasing the confidence levels will likely result in a LOR condition being declared unnecessarily. While AEMO's primary responsibility is the operation of the power system in a secure and reliable manner continually identifying incorrect LOR conditions devalues periods where AEMO actually requires a significant market response.

Conclusion

EnergyAustralia broadly supports AEMO's proposed changes to the guidelines. However, we encourage AEMO to consider changes to the STPASA process to improve the treatment of energy limited plant in the FUM calculation. AEMO should also aim to make the STPASA process more transparent by publishing all outcomes of the reserve calculation. Changes to the treatment of non/semi-scheduled wind and solar to better enable forecast errors to be understood would also be a positive outcome. Finally, we urge AEMO to continue to remain transparent on decisions to select input predicters and confidence levels.

If you would like to discuss this submission, please contact me on 03 8628 1630 or Andrew.Godfrey@energyaustralia.com.au.

Regards

Andrew Godfrey

Industry Regulation Lead