ERM Power Limited
Level 3, 90 Collins Street
Melbourne VIC 3000
ABN 28 122 259 223

+61 3 9214 9333
ermpower.com.au

Monday, 7 December 2020

Mr Craig Oakeshott
Market Performance Branch
Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001

Dear Mr Oakeshott

RE: Reliability Instrument request – New South Wales January to March 2024.

ERM Power Retail Pty Ltd (ERM Power) welcomes the opportunity to respond to the Australian Energy Regulator's consultation on a Reliability Instrument Request for New South Wales from January to March 2024.

About ERM Power

ERM Power (ERM) is a subsidiary of Shell Energy Australia Pty Ltd (Shell Energy). ERM is one of Australia's leading commercial and industrial electricity retailers, providing large businesses with end to end energy management, from electricity retailing to integrated solutions that improve energy productivity. Market-leading customer satisfaction has fuelled ERM Power's growth, and today the Company is the second largest electricity provider to commercial businesses and industrials in Australia by load[1]. ERM also operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland, supporting the industry's transition to renewables.

http://www.ermpower.com.au
https://www.shell.com.au/business-customers/shell-energy-australia.html

General comments

ERM Power considers that the AER should not grant the request for a T-3 instrument on three main grounds:

1) That the Australian Energy Market Operator's (AEMO) forecasts contain material errors that lead to an overestimation of the potential for unserved energy thus resulting in a breach of the Interim Reliability Measure in New South Wales;
2) That AEMO has made assumptions underpinning its forecast data that are inaccurate and which have had a material impact on unserved energy outcomes in the reliability forecast; and
3) That AEMO has not used reasonable endeavours to prepare the reliability forecast in accordance with the Forecasting Best Practice Guidelines.

Individually, the effect of some of these errors alone may be sufficient to bring unserved energy (USE) to within the Interim Reliability Measure (IRM) and 'close' the reliability gap. When considered as a whole, ERM Power considers that there would clearly be no breach of the Interim Reliability Measure in 2023-24 in New South Wales.

[1] Based on ERM Power analysis of latest published information.

ERM Power considers that the integrity of the Retailer Reliability Obligation framework must be considered by the AER when considering AEMO's reliability instrument request. Consumers, retailers and generators will be exposed to specific obligations if the reliability instrument request is approved, all of which will incur considerable additional costs in compliance action. These additional costs will ultimately flow through to consumers.

Demand Side Participation forecasts

We note that in its request for a T-3 instrument AEMO acknowledges that the materiality of its Demand Side Participation (DSP) forecast is high. We consider that AEMO has erred in the way it factors in DSP into the reliability forecast.

In our submission to AEMO's 2020 Inputs, Assumptions, Scenarios and Scenarios Report (IASR) ERM Power expressed concern about AEMO's use of negative values of DSP in the DSP calculation based on inaccuracy in the allocated "baseline". While variations in baselines can and do occur, this variation in baseline consumption would already be included in AEMO's calculation of probabilistic overall regional maximum demand and as such is already included in AEMO's reliability assessment. Including these values again in the calculated DSP value in effect double counts the same value in the reliability assessment resulting in an overstated potential for unserved energy.

Also, as AEMO's process for identifying a price responsive load is based on observations of historical reduction in consumption at a connection point at a time of a price event, we question how steady consumption or an increase in consumption could possibly be identified by AEMO as demand response. We continue to recommend that for calculating input assumptions for DSP to be used in future planning and reliability forecasts, all negative DSP values should be removed prior to calculation of the response probability curves.

AEMO's Reliability and Emergency Reserve Trader (RERT) report period 1 January to 31 March 2020 indicated that on 4 January that "Between 1625 and 2015 hrs, up to 400 MW of price-responsive load reduced in New South Wales in response to high spot prices."[2] The report also indicates that on 23 January "Between 1730 and 2000 hrs, up to 360 MW of price-responsive load reduced in New South Wales in response to high spot prices."[3] AEMO's IASR Workbook supporting the 2020 Electricity Statement of Opportunities (ESOO) assumes that 285 MW is available in NSW in 2020-21, suggesting that in real world situations, more DSP is available than AEMO has forecast. We have put to AEMO through various consultation processes that their approach creates a persistent bias which leads to under-forecasting of DSP. If DSP's contribution was represented more accurately, we do not consider that a breach of the IRM would exist in NSW in 2023-24 as per the reliability forecast.

Further, AEMO's Reliability Instrument Request states that "The estimated DSP responding to reliability signals for New South Wales in summer 2023-24 is 285 MW."[4] However, AEMO's IASR Workbook which is prepared under the best forecasting practice stakeholder consultation framework is intended to indicate the input assumptions used in the Integrated System Plan and the ESOO shows that 340.3 MW is forecast to be available in 2023-24. Further, the ESOO indicates that in utilising the IASR input assumptions, AEMO has set the level of DSP for the ESOO reliability forecast modelling at a reduced level of 285 MW for all years but provided no detailed explanation of why the forecast level of DSP in future years should be reduced below that forecast in the ISAR.[5] We believe the use of the value of 285 MW for DSP which is inconsistent with the forecast value of 340.3 MW consulted on with stakeholders as part of the ISAR workbook, must be corrected in AEMO's modelling to ensure that the AER is presented with accurate reliability forecast information. Additionally, as we note above, AEMO's bias towards under-forecasting DSP suggests that this 340.3 MW projection falls short of what a more reasonable forecast would find.

[2] AEMO, Reliability and Emergency Reserve Trader Quarterly Report Q1 2020, p 18.
[3] AEMO, Reliability and Emergency Reserve Trader Quarterly Report Q1 2020, p 23.
[4] AEMO, Reliability Instrument Request, p 8.
[5] AEMO 2020 ESOO Appendix A.3 pp 115

We continue to question AEMO's use of the observed 50th percentile value from the probability response curves to assess the level of DSP available to the market at times of a reliability event, where very high prices and the threat of involuntary load shedding would lead to a high DSP response. As we previously indicated to AEMO, while only the 50th percentile value is allocated to DSP response, the full value of any observed demand response is added to the historical demand outcomes for use in the forecasts of future maximum demand outcomes and half hour demand traces used in the reliability assessment modelling.

We continue to assert that this introduces bias in the modelling process and results in an unnecessary conservative assumption being introduced for DSP. We consider that the value used in the reliability assessment should be set at the 90th percentile whilst maintaining the priced based response at the 50th percentile. We believe this would more accurately reflect the level of DSP expected to be available and respond at times of an actual reliability event.

All told, we consider that AEMO's treatment of DSP constitutes a material error in its forecasts that has a material impact on forecasts of unserved energy.

Forecasting assumptions – transmission

In the area of network augmentation, page 50 of the 2020 ESOO indicates that AEMO has only incorporated works on the Victorian side of the border for the VNI minor interconnector upgrade in its modelling. The VNI minor upgrade is identified as an actionable ISP project and the Regulated Investment Test – Transmission for the project has been completed and received AER regulatory approval. We fail to understand how only work on the Victorian side of the project has been included in the modelling when we understand that work on the NSW side is at a similar stage of commitment and is, according to TransGrid, due to be completed by December 2021.[6] In contrast, works on the Victorian side are due to be completed by December 2022. We fail to see how AEMO can justify excluding work on the NSW side from ESOO modelling when it is due to be completed earlier and would have brought USE to within the IRM, but have included works projected to be completed later on the Victorian side which effectively have little if any impact on forecast USE in NSW. As noted by TransGrid, works on the NSW side will allow increased flows across the southern to central NSW network corridor from existing undispatched generation in southern NSW,[7] to service NSW demand., The work on the NSW side of the border to install modular power flow controllers on both 330 kV Upper Tumut – Canberra and 330 kV Upper Tumut – Yass lines is expected to improve the transfer capability between southern and central NSW by at least 170 MW which, as this is higher than the 154 MW reliability gap, would mean that there should in fact be no breach of the IRM.

It is unclear to ERM Power that the intra-regional constraint equations have been updated in the ESOO reliability forecast modelling to reflect the increased transfer capacity from southern to central NSW resulting from commissioning of these modular flow controllers.

In addition to the above, the TransGrid 2020 Transmission Annual Planning report indicates further minor low-cost projects that will further improve the transfer capability between southern and central NSW prior to January 2024 that were not included in the 2020 ESOO. These projects include:

- *Install Static Synchronous Series Compensation on Upper Tumut – Yass 330 kV Line.* This will improve the sharing of flows between the four 330 kV lines O1, 2, 3 and O7 between upper Tumut/Lower Tumut and Yass/Canberra and thereby enable higher transfer across the group towards Sydney. A 2Ω reduction in the line reactance will increase the Snowy electrical sub-region to NSW transfer capability by 26 MW. The project is listed for completion in 2023.[8]

[6] TransGrid, 2020 Transmission Annual Planning Report, pp 24-25.

[7] TransGrid, 2020 Transmission Annual Planning Report, pp 24

[8] TransGrid, 2020 Transmission Annual Planning Report - Table 2.4: Planned projects in southern NSW and ACT, pp 43

- *Provision of dynamic line ratings.* Currently TransGrid and AEMO utilise seasonal day/night ratings on the transmission lines between southern and central NSW. Weather stations will be installed to allow Dynamic Line Ratings to be calculated for a number of lines. The replacement of limiting equipment will permit use of higher ratings. Operating these lines to a dynamic rating appropriate to ambient conditions will facilitate construction and dispatch of additional low-cost generation. This committed project is expected to be completed by May 2023. Although not indicated in the TAPR, based on similar dynamic line ratings in Victoria and Qld this project could improve the transfer capacity between southern and central NSW in the 50 to 20% POE demand outcomes range by between 40 to 70 MW.[9] AEMO could confirm this expected value with TransGrid.

Forecasting Best Practice Guideline

Section 2.3 of the Forecasting Best Practice Guideline discusses the process for providing an update of the reliability forecast should AEMO become aware of significant new information following the release of the ESOO. We note that on Page 8 of the ESOO, AEMO recognised the New South Wales Government's announced commitment on 15 August 2020 to provide capital projects funding to 170 MW of dispatchable capacity under its Emerging Energy Program.

> "While announced too late to be modelled, the New South Wales Government's commitment to provide capital projects funding to 170 MW of dispatchable capacity under its Emerging Energy Program is expected to reduce expected USE to below the IRM in 2023-24."[10]

We also note that the total of announced projects to receive capital funding was 220 MW. [11]

ERM Power considers that the release of the funding commitment under NSW's Emerging Energy Program constitute new information that would lead to a material change in the reliability forecast.

AEMO published the 2020 ESOO and reliability forecast in late August. At this time a breach of the Reliability Standard was not identified. However, AEMO needed to wait until the Energy Security Board made changes to the NER to facilitate the introduction of the Interim Reliability Measure as the trigger threshold for a Retailer Reliability Obligation reliability gap. Three months has now passed since the release of the ESOO during which, several new government energy policies have been announced, not to mention an increase in the volume of committed generation in NSW.

Table 2 of AEMO's Reliability Instrument Request also states that an updated version of AEMO's Generation Information was published on 12 November which included changes to expected peak summer generation and storage capacity in New South Wales in 2023-24, relative to those assumed in the 2020 ESOO. In its request, AEMO acknowledges that this additional committed generation would "reduce the size of the forecast reliability gap by approximately 50-100 MW". It is unclear to ERM Power, given the precise nature of the 154 MW reliability gap, why AEMO is unable to provide a more precise figure regarding the impact on the reliability gap from the additional "committed" generation than the 50-100 MW range quoted in the reliability instrument request by AEMO. Additionally, we note that none of the projects set to receive funding under the NSW Government's Emerging Energy Program are listed in AEMO's updated Generation Information Page of committed projects.

Given this delay in implementing the IRM rule change, we consider that it would have been appropriate for AEMO to incorporate the dispatchable generation granted funding under the NSW Government's Emerging Energy Program, alongside additional new information, in an updated reliability forecast. Had announced changes in the past two months represented a fall in forecast generation capability, or other factor which may have had a negative impact of the reliability forecast, we have little doubt that an updated reliability forecast would have been issued.

[9] TransGrid, 2020 Transmission Annual Planning Report - Table 2.8: Planned projects across NSW, pp 47
[10] AEMO 2020 Electricity Statement of Opportunities pp 8
[11] NSW Government, Emerging Energy Program. https://energy.nsw.gov.au/renewables/clean-energy-initiatives/emerging-energy-program. Last Accessed 4 December 2020.

ERM Power contends that there is likely to be an asymmetrical approach as "missing" a reliability gap enhances the risks on AEMO compared to issuing one now that may be revoked at a later date. It should also be noted that AEMO incurs no costs or risks should a reliability instrument be approved, all costs and risks are borne by other parties and ultimately consumers.

ERM Power also notes the recently legislated NSW Government's NSW Electricity Infrastructure Roadmap which is also expected to reduce the potential for forecast unserved energy prior to the 2023-24 summer.

Misrepresentation of the Reliability Gap Value

We note the inclusion of Table 1 – Sensitivity matrix for forecast reliability gap, in AEMO's reliability instrument request. As we highlighted in our submission to the Draft Interim Reliability Forecasting Guidelines Issues Paper, ERM Power is concerned that the reliability gap value is overestimated by AEMO's calculation process.

> "The size of the forecast reliability gap, expressed in megawatts, is determined by analysing the interval level USE across all simulations in each region where the USE exceeds the reliability standard. The size of the gap is calculated as the additional megawatts of capacity, assumed to be 100% available, during all identified trading intervals within the reliability gap period only, that is required to reduce the annual expected USE to the reliability standard.
>
> The size of the gap is determined based on the effective response that additional reserves could provide if only procured to cover the reliability gap period and likely trading intervals identified. This means the gap (in megawatts) may be slightly larger than would otherwise be the case if those reserves were assumed to be available for the entire financial year."[12]

We argued in our submission that by AEMO defining that the additional capacity is only available to be dispatched during periods where a forecast reliability gap has been declared, AEMO is in effect creating an internal bias in its view of the type of capacity investment that would occur in response to the forecast of a reliability gap that led to the request of a reliability instrument. The size of the forecast of any reliability gap should be based on the primary objective of reducing forecast USE below the IRM (or reliability standard), not just of reducing forecast USE within a declared reliability gap period. If the IRM, (or reliability standard) is not forecast to be exceeded in a financial year, no reliability gap can exist.

As acknowledged in the Draft Guidelines[13], but with this section from the Draft Guideline later moved by AEMO to the ESOO and Reliability Forecast Methodology Document, AEMO's approach results in a forecast reliability gap being larger (in MW) than would otherwise be the case if the additional capacity were calculated on the basis of being available for dispatch during any trading interval in the year. This has the potential to increase the costs to the Market of meeting any declared forecast reliability gap.

AEMO disagreed with ERM Power's arguments that the size of the reliability gap should be determined by considering additional capacity in all periods, rather than during the likely trading intervals identified within the gap period. However, we remain concerned that in limiting additional supply or demand side response capacity to only those periods within the declared gap period, AEMO is overstating the actual reliability gap. In our view, this fails to meet the objectives of the forecasting best practice guidelines. In addition, AEMO indicated in the Interim Reliability Forecasting Guidelines Final Determination and Report that:

> "AEMO will publish the size of the reliability gap assuming that any additional capacity industry obtains to meet this gap is available at all times, but this is for information purposes only."[14]

[12] AEMO, ESOO and Reliability Forecast Methodology Document Section 6.1.3, p 20.
[13] AEMO, Draft Interim Reliability Forecasting Guidelines Section 5.1.3, p 17.
[14] AEMO, Interim Reliability Forecasting Guidelines Final Determination and Report Section 4.4.2, p 14.

We are not aware that these values were ever published by AEMO and we believe that the AER should request that this information be provided by AEMO as part of the AER's review of AEMO reliability instrument request.

Lack of ESOO reliability forecast update

ERM Power is concerned by the failure of AEMO to issue an ESOO update in the intervening 3 month period following issue of the 2020 ESOO report and prior to lodgement of the reliability instrument request for the NSW region for FY2023/24 with the AER. We believe there was sufficient time for AEMO to issue a reliability forecast update covering FY2023/24 to take into account a number of "material changes" to key input assumptions to the reliability forecast as noted by AEMO post 1 July 2020 when the assumptions for the 2020 ESOO were finalised. AEMO has highlighted in their reliability instrument request that additional supply side capacity in NSW has achieved "committed" status and is expected to be commissioned before December 2023.

In addition, through AEMO's Forecasting Reference Group, AEMO has reported that actual connections of rooftop solar PV are well above forecast levels and that this is now forecast by AEMO to continue into the future and that the reduction in energy demand due to the impact of COVID-19 is stronger than AEMO's original forecast.

These factors would all have a positive impact on the reliability forecast outcome for FY2023/24.

This lack of an ESOO reliability forecast update aligns with concerns raised by ERM Power in submissions to AEMO's Reliability Standards Implementation Guidelines Consultation Paper and Draft Determination. We raised concerns that it was unclear to ERM Power that an ESOO update would be issued when a "material change" would potentially result in an improvement to the prevailing reliability forecast. In our submission to the Draft Determination we noted that;

> ""In our submission to the Consultation Paper we set out that; "Whilst the Guideline sets out a new section as to when an ESOO update will be provided when information becomes available, that in AEMO's opinion materially changes the statement of opportunities based on historical events, it is unclear to ERM Power that this would occur when the material change would potentially result in an improvement to the prevailing reliability forecast. We consider that the section should be amended to provide confidence to stakeholders that the ESOO will be updated for material changes with the potential to both positively and negatively impact the reliability forecast."
>
> Whilst AEMO in their Draft Determination indicates that;
>
> "AEMO considers the existing wording "As per clause 3.13.3A(b), AEMO is required to update the statement of opportunities when information becomes available that in AEMO's opinion materially changes the statement of opportunities." sufficient.". We remain of the opinion that this does not provide confidence to stakeholders that AEMO will take a balanced approach with regards to the issuing of updates to the ESOO.
>
> We ask that AEMO reconsider its view in this area and provide confidence to stakeholders that a balanced approach will be applied to a decision to issue an update to the ESOO.'"[15]

Whilst we acknowledge that the AER has no power under the National Electricity Rules to require AEMO to issue a ESOO reliability forecast update for FY2023/24, we believe that the AER should take into account the lack of issue of an ESOO update by AEMO despite the material changes noted above and how this meets best forecasting practice.

Conclusion

ERM Power considers that the AER should deny AEMO's request for a T-3 reliability instrument. Given the information we have provided above, we consider that AEMO has made a number of material errors and inaccurate assumptions in its reliability forecast, without which no reliability gap would exist in New South Wales in 2023-24.

[15] ERM Power submission to AEMO – Reliability Standards Implementation Guideline Consultation Draft Determination pp 6

The combination of an overly conservative approach to demand side participation and double counting of load, alongside the failure to consider a number of transmission projects and investments in new generation capacity means that AEMO's forecasts overstate the volume of unserved energy during the forecast gap period.

Further, by not updating their forecasts in relation to the FY2023/24 period to recognise newly committed investments and projects over the 3 month period whilst AEMO awaited approval of the interim reliability measure, we consider that AEMO has failed to meet the Forecasting Best Practice Guidelines.

Please contact Ron Logan 0427 002 956 or rlogan@ermpower.com.au if you have any questions with regards to this submission.

Yours sincerely,

[signed]

Libby Hawker
Senior Manager – Regulatory Affairs
03 9214 9324 - LHawker@ermpower.com.au