



Thursday, 31 October 2019

Mr Alex Wonhas
Chief System Design and Engineering Officer
Australian Energy Market Operator
PO Box 2008
Melbourne, Victoria, 3001

Dear Mr Wonhas

RE: AEMO Interim Reliability Forecast Guidelines Consultation Paper

ERM Power Limited (ERM Power) welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) Interim Reliability Forecast Guidelines Consultation Paper as published on 3 October 2019.

About ERM Power

ERM Power is an Australian energy company operating electricity sales, generation and energy solutions businesses. The Company has grown to become the second largest electricity provider to commercial businesses and industrials in Australia by load¹. A growing range of energy solutions products and services are being delivered, including lighting and energy efficiency software and data analytics, to the Company's existing and new customer base. The Company operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland. www.ermpower.com.au

General comments

ERM Power congratulates AEMO on preparing and releasing the Interim Reliability Forecast Guidelines and Consultation Paper in such a short timeframe following the release of the Australian Energy Regulator's Interim Forecasting Best Practice Guidelines on 20 September 2019. We note that the purpose of AEMO's Interim Reliability Forecast Guidelines (the Guidelines) is to detail how AEMO intends to comply with the requirements of the AER's Forecasting Best Practice Guidelines and other requirements as set out in the National Electricity Rules with regards to the development, consultation on and preparation of a reliability forecast. We note that one of the key objectives of the AER's Forecasting Best Practice Guidelines is to: *'Provide confidence to market participants concerning the quality and transparency of reliability forecasts and the supporting processes conducted by AEMO'*.

In this regard AEMO's Reliability Forecast Guideline is required to set out how AEMO will meet the following principles:

- 1) forecasts should be as accurate as possible, based on comprehensive information and prepared in an unbiased manner;
- 2) the basic inputs, assumptions and methodology that underpin forecasts should be disclosed; and
- 3) stakeholders should have as much opportunity to engage as is practicable, through effective consultation and access to documents and information.

We note that AEMO has indicated that where possible the Guidelines do not set out details of AEMO's forecasting processes or methodologies but that the Guidelines will contain references to these processes and methodologies which will be subject to routine and ongoing review and consultation.

¹ Based on ERM Power analysis of latest published financial information.



It should also be noted that with the inclusion of the Retailer Reliability Obligation in the National Electricity Rules (the Rules), AEMO's Electricity Statement of Opportunities (ESOO) no longer represents an information only document, but that forecasts from the ESOO process may result in the expenditure of large amounts of resources and money to meet the scenario set out in the reliability forecast which will ultimately be passed through to consumers. Given this, AEMO's forecasts must represent real possibilities of future Market outcomes.

In general, we are somewhat supportive of the proposals as set out in the Guidelines but wish to raise some concerns in a number of areas of the Guidelines as issued.

Section 2 - Industry engagement

ERM Power believes that this section should set out in clearer terms how AEMO intends to engage with stakeholders in the early development stage of the preparation of AEMO forecasts, including the processes for ensuring effective consultation with stakeholders in the development of AEMO's methodologies and processes which are used in the development and preparation of key inputs to the reliability forecast. Whilst we note Appendix A to the Guidelines sets out some very good details with regards to the stakeholder engagement process, the Appendix does not contain details of how effective consultation will be achieved in the early development stages of ideas and concepts to allow stakeholders effective input prior to the presentation of ideas to wider stakeholder groups such as AEMO's Forecasting Reference Group.

In considering the above, we believe that AEMO needs to set out in detail in the Guidelines how AEMO intends to conduct an effective consultation process that provides sufficient time for stakeholders to review and provide comment, either verbal or written, to proposed ideas, concepts, processes and methods. In assessing the criteria for effective consultation we believe that it is critical that detailed feedback including reasoning is provided for either the adoption, or rejection, of any proposed change to AEMO's processes and methodologies.

We note that the Guidelines indicate that a timeline for engagement with stakeholders will commence at the beginning of each annual cycle, typically at the end of January. We are concerned that this will leave insufficient time for effective consultation and believe that an ongoing engagement process is warranted in the preparation of inputs to the reliability forecasts. In our view, consultation regarding inputs and assumptions for next year's reliability forecast should commence following the issuing of the final report of inputs and assumptions for the current reliability forecast.

Section 3 – Data inputs, assumptions and methodology

With regards to the validation of material inputs and assumptions we support the inclusion of a validation process or methodology and believe the Guidelines would benefit from the inclusion of reference to such a document which sets out the process AEMO will follow to validate the material inputs and assumptions.

Whilst sections 3.3.2 and 3.3.3 set out the process to be followed by AEMO and registered participants for the provision of data to AEMO by a registered participant, ERM Power believes that section 3 should also detail out the process for stakeholders to request information to be provided by AEMO. We also believe that requests for additional data should be restricted to only that required for AEMO to fulfil its reliability forecasting obligations.

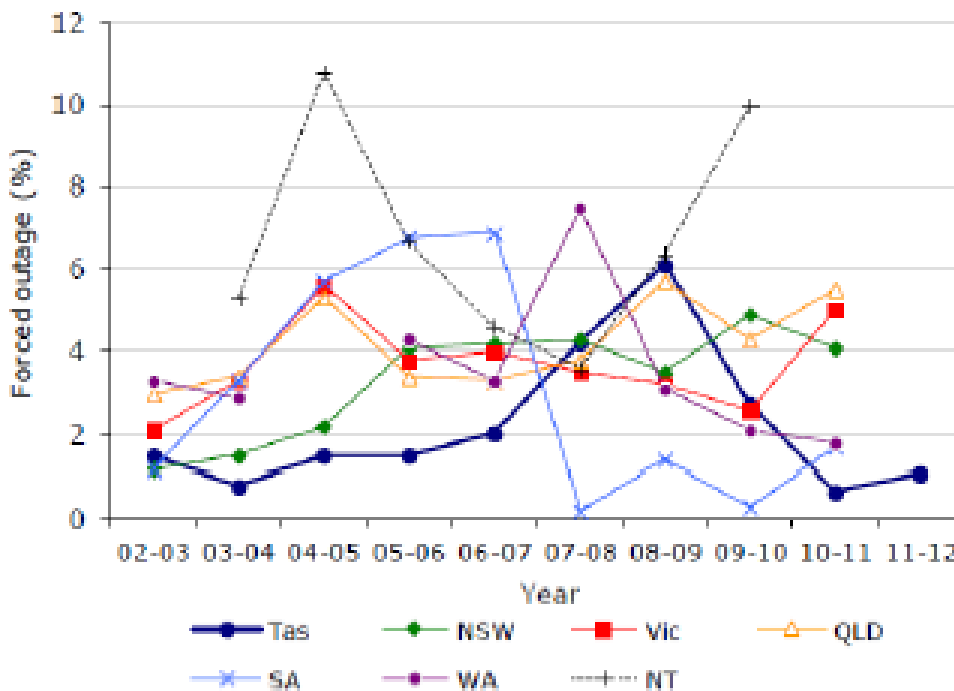
With regards to section 3.5.2 – Supporting material, ERM Power does not accept that a delay of 20 business days following the publication of the ESOO is acceptable for the publication of supporting data. We believe that all supporting data must be published simultaneously with the ESOO.

With regards to the need for a defined data validation process or methodology, we note that currently numerous stakeholders including ourselves have raised with AEMO that AEMO's current generator forced outage input data process exhibits many of the hallmarks of 'cherry picking' to obtain the modelling outcomes which fall in line with AEMO's current view regarding the probability of unplanned generator outages, particularly during high demand periods.



This concern has been compounded by recent discussions where AEMO was asked what potential changes, if any, would occur to the selection of years to be included in the generator forced outage modelling in a scenario where generator forced outage rates were to improve significantly. AEMO expressed the view that the years selected to apply to the modelling would expand to ensure that poor performing years were still included in the input data. We believe that this is inconsistent with AEMO's current process of excluding better performing years from the current modelling process.

Generator forced outage rates can and do vary significantly between years. A long duration major failure can impact generator forced outage outcomes in one year which, following repairs, results in lower forced outage rates in subsequent years. By way of example, Liddell Power Station in the early 1980s had a forced outage rate exceeding 70% following a number of simultaneous forced outages, by the early 1990s the forced outage rate was less than 5%. Similarly, analysis undertaken by the Western Australia Independent Market Operator in early 2013 to compare the forced outage rates of generating units in Western Australia to generating units in other states clearly shows periods of both higher and lower forced outage rate across all states. This is why a longer term outlook regarding generator forced outage data usually forms the basis for any probabilistic modelling of generator forced outages.



We are also concerned that AEMO include modelling of unplanned outages on intra-regional transmission network infrastructure in their current modelling of forecast USE in the ESOO, MT PASA and EAAP. The Rules clearly indicate that only unplanned outages of inter-regional transmission network infrastructure is classified as USE.

Section 4 – Forecasting improvements

ERM Power supports the annual publication of a forecasting accuracy report. In considering the contents of a forecasting accuracy report, we believe that the comparison of the accuracy of forecasts for maximum demand outcomes based on a single summer and winter reference point is no longer an acceptable measure.



Forecasts of unserved energy (USE) can and do occur in the ESOO and the Medium Term Projected Assessment of System Adequacy (MT PASA) in any month of the year, these forecasts of monthly USE are combined to calculate the annual forecast of USE for a region including the determination that the reliability forecast meets the reliability standard.

We note that during the period April to August 2019, USE was forecast in the MT PASA for the following months of May to September based on both the 50% and 10% Possibility of Exceedance (POE) demand forecasts in a number of regions, it is also worth noting that no actual USE was recorded.

ERM Power believes that at a minimum, this forecasting accuracy report must contain details of the accuracy of AEMO's maximum demand forecasts on a monthly basis and contain not just details of actual weather outcomes on the day of monthly maximum demand but also a cross check of actual demand outcomes on the day of the highest daily maximum temperature outcomes during summer or day of the lowest maximum temperature outcomes during winter months. In addition, for months where unserved energy is forecast from the MTPASA modelling, particularly under 50% POE conditions, the forecasting accuracy report should provide a detailed review of the underlying assumptions to actual outcomes where no actual USE is realised. Similarly, there are areas in the forecasting accuracy report that equally apply to forecasts of supply side availability.

We believe that the Guidelines should contain reference to a Forecasting Accuracy Report Methodology to be consulted on, developed and prepared for review and comment by AEMO no later than mid-2020 and after that form part of the suite of forecasting process methodologies requiring regular review and update by AEMO.

We support the proposal in the Guidelines to include the forecasting accuracy improvement plan as a separate area within the Forecasting Accuracy Report. We believe that the format for the forecasting accuracy improvement plan should form part of the consultation process for the Forecasting Accuracy Report Methodology. In considering changes made as part of the forecasting accuracy improvement plan, we believe that each change and its objective be well documented and that subsequent to its implementation, regular benchmarking be undertaken to assess the its benefit.

We also believe that AEMO should consider the timing for release of the annual Forecasting Accuracy Report taking into consideration that in general the Forecasting Accuracy Report will be considering the accuracy of forecasts as they relate to the previous year's forecasts compared to actual outcomes. We believe it would be helpful for the Forecasting Accuracy Report to be delivered as early as possible so as to allow identified improvements to be included in the current year's reliability forecast.

Whilst the provision of the formal reliability forecast is only new, we see no impediment to AEMO's use of forecasts published for previous ESOOs being utilised to meet the Rules requirements to consider forecasting accuracy over the previous five year period. Each year's actual monthly outcomes would be compared to the immediately preceding ESOO and aligned maximum monthly MT PASA daily 50% and 10% demand forecasts. Similarly, forecasts of available regional supply, taking into account modelled generator availability from the ESOO process would be compared to actual generator availability on a percentage of time and megawatt of reported available capacity basis.

Section 5 - Reliability forecast

ERM Power believes that the calculation of both the size and the time duration of any forecast reliability gap is the most critical output from AEMO's reliability forecast process. It is unclear to ERM Power as to why AEMO have decided to detail the process for calculating the size and time duration of a forecast reliability gap in the Guidelines rather than via the use of a methodology paper referred to in the Guidelines similar to other processes which form part of the overall reliability forecast. Notwithstanding, we offer comments to the process as detailed in the Guidelines.



With regards to the definition of Loss of Load Probability (LoLP) of 10% in any monthly period, we understand this to mean that this is determined on the basis that greater than 10% of the number of modelled half hour Trading Intervals across both the 10%, 50% and 90% POE forecast demand scenarios have some level of USE regardless of the magnitude of the size of the USE event in MWh. However, it is unclear from AEMO's process description if a similar proxy number of zero USE scenarios based on the 90% POE demand scenario are in fact included in this calculation.

Also, in considering the question of what demand scenario should be used to determine the LoLP, we note that the Guidelines indicate that *'the reliability gap that triggers a reliability instrument request will be based on the scenario AEMO considers most likely to eventuate, that is, a neutral or central scenario'*. Whilst the calculation regarding average forecast USE outcomes is somewhat balanced, as this includes the application of probability weightings to outcomes from the 10%, 50% and 90% demand forecast modelling, we understand no probability weighting is applied to the calculation of LoLP. As such, very low probability events under the 10% POE demand forecast where USE is recorded against a higher number of trading intervals would bias the selection of periods subject to a forecast reliability gap to events calculated under the 10% POE demand forecast.

We believe AEMO should consider revising the wording in the Guidelines to more clearly articulate the trigger level, in particular that it is based on 10% of all trading intervals within a month based on all potential scenarios under only the 50% POE demand scenario as the represents the "scenario most likely to eventuate" or alternatively under the 10%, 50% and 90% POE demand scenarios. In the event the latter is chosen, we believe the Guideline should provide supporting reasoning as to why that should be the case.

We agree with the application of a "sense test" where a reliability gap could be declared for a part of month period only and believe that rather than considering only the first or last week of the month, the decision could be equally based on the first or last fortnight, or other number of days within a month.

We agree with AEMO's decision to consider day types based on working weekdays or weekends and public holidays (non-working weekdays).

When considering the time-of-day where a forecast reliability gap may be identified, we are concerned that AEMO intends to include all trading intervals between the first and last trading interval in the day based on all day types within a month where a 10% threshold trigger for all modelled trading intervals is observed. We believe this could result in more trading intervals being declared as subject to a forecast reliability gap than are warranted, some of which may have no forecast USE.

By way of example, a forecast reliability gap could be calculated during a morning ramp period (06:30 to 09:00) prior to increased output from solar PV, with forecasts of USE then absent until the ramp off of solar PV output prior to the evening peak period (17:30 to 19:30). Based on the methodology as set out in the Guidelines, the forecast reliability gap period would be calculated in the above example from 06:30 to 19:30, although a significant number of modelled trading intervals contain zero or minimal levels of USE. We believe AEMO should redefine the calculation of a forecast reliability gap to exclude trading intervals where observed USE falls below a defined trigger level. We submit that trading intervals below a 5% threshold be excluded.

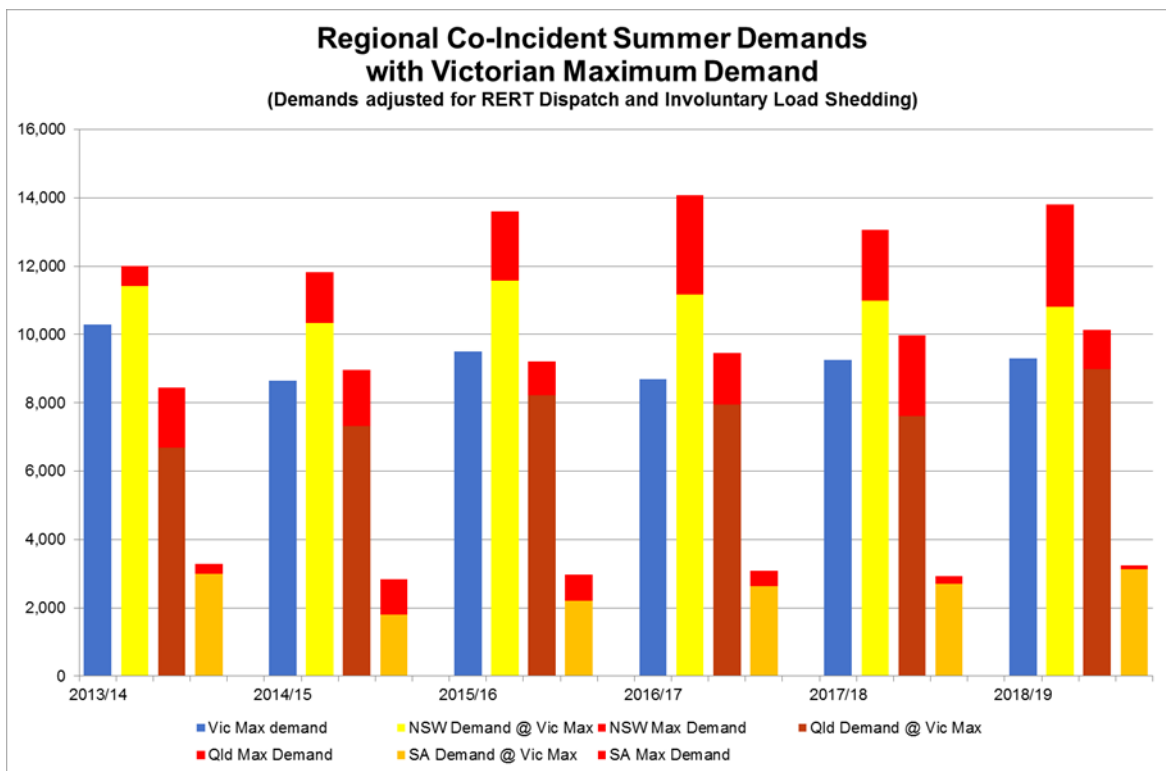
We do not support AEMO's proposal to include months where the forecast LoLP falls below the 10% trigger threshold in any reliability instrument request just because this month falls between two months where the 10% trigger threshold is met on the basis that this decision to include these months will unnecessarily increase overall costs to the Market, the cost of which will ultimately be borne by consumers. Only those months where the 10% trigger threshold is met should be included in a reliability instrument request. We do not support AEMO's view as set out in the Guidelines that requests for multiple reliability instruments in a single financial year would lead to an unmanageable level of confusion or administrative burden. We believe that the use, if required, of multiple reliability instrument requests will lead to lower overall costs to consumers.



ERM Power does not support the proposed methodology for calculation of the size of a forecast reliability gap. As acknowledged in the Guidelines, the proposed methodology will result in the size of a forecast reliability gap being larger 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.

By 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 reliability standard, not of just reducing forecast USE within a declared reliability gap period.

ERM Power does not support the proposed restriction on an additional MW of capacity in one region supporting reductions in USE in another region. Maximum demand outcomes in the NEM exhibit a significant degree of peak day misalignment, particularly during the summer months, and between the Southern and Northern regions of the NEM where weather diversity on average may range from 5 to 7%.



We note that the Guidelines acknowledges that “By determining the size of the gap in each region independently, the combined gap in megawatts may be bigger than the level that would be required to have both regions meet the reliability standard when allowing for reserve sharing”. Reserve sharing across regions is a well-documented and understood concept, where available capacity in one region is able to reduce forecast USE in another region and should be allowed under the proposed size of forecast reliability gap calculation.



Section 6 – Demand definitions

ERM Power notes that the use of variable definitions of regional demand in AEMO's various forecasting reports has at times led to confusion amongst various stakeholders with regards to comparing actual real time AEMO reported demand outcomes to demand values shown in AEMO's forecasting documents. Whilst AEMO may use whatever definitions of demand for its own internal processes, we urge AEMO to reconsider the use of alternative definitions for reporting of actual and forecast demand outcomes and to adopt as a standard the use of 'operational demand as generated' for all forecast reporting including the comparison of actual to forecast demand. This will allow all stakeholders to easily compare forecast to actual outcomes.

Consistent use of the 'operational demand as generated' definition would also be consistent with the recent Draft Determination on the Improving Transparency and Extending Duration of MTPASA rule change request where the Australian Energy Market Commission concluded;

The Commission has confirmed that forecast and actual demands are published in different formats and is concerned that this creates confusion for some market participants.

Aligning the formats of published forecast and actual demands would reduce confusion, and improve transparency of information provision, which would allow participants to make better informed decisions.

Please contact me if you would like to discuss this submission further.

Yours sincerely

[signed]

David Guiver

Executive General Manager - Trading

07 3020 5137 – dguiver@ermpower.com.au