



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

+61 3 9214 9333  
[ermpower.com.au](http://ermpower.com.au)

Monday, 20 August 2018

Mr Mark Miller  
Operations Specialist  
Australian Energy Market Operator  
GPO Box 200  
Melbourne VIC 3001

Dear Mr Miller

## **RE: Reserve Level Declaration Guideline Consultation**

ERM Power Limited (ERM Power) welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO's) Reserve Level Declaration Guideline Consultation Issues Paper (the Paper).

### 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 load<sup>1</sup>, with operations in every state and the Australian Capital Territory. 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. ERM Power also sells electricity in several markets in the United States. The Company operates 497 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland. [www.ermpower.com.au](http://www.ermpower.com.au)

### General comments

ERM Power supports AEMO's decision to review the current Reserve Level Declaration Guideline and the associated methodology for the calculation of Forecasting Uncertainty Measure (FUM) values. We are concerned by the increase in number of Lack of Reserve (LOR) declarations by AEMO following the implementation of the FUM into AEMO's reserve level declaration process where the cause can be directly attributed to large FUM values in the 24 to 72 hour timeframe. We acknowledge the work undertaken during 2018 by AEMO to improve the short term forecasting process in the pre-dispatch timeframe and the small but welcome impact that has occurred in the FUM values following retraining of the FUM calculation models. However, we note that the FUM values in the 24 to 72 hour timeframe remain significantly large in all regions. We believe this is leading to additional and unnecessary LOR declarations to the detriment of efficient operation of the National Electricity Market (NEM) through the increased prospect for market intervention.

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<sup>1</sup> Based on ERM Power analysis of latest published financial information.



## Changes proposed to improve performance

### **Reducing number of models per region**

AEMO has indicated that it may be possible to reduce the number of models with regards to the timeframes 0.5 to 72 hours prior to dispatch from nine to three with no adverse impact on forecast accuracy. Provided thorough testing is undertaken to ensure accuracy is retained or improved we would support this change.

### **Changing the output bin structure**

AEMO in the Issues Paper indicate that the current output bin structure is resulting in an increased frequency of FUM value changes; however, the Paper provides no details with regards to this. The Paper also indicates that increasing the size of the output bins, whilst lessening the frequency of FUM value changes, will increase the size of the FUM value change, again no details are supplied regarding this. In addition, the Paper indicates that AEMO propose to manage this increase in FUM value change by use of the FUM reasonability limit values which are themselves significantly large values and therefore would have limited impact on limiting the size of any FUM value change.

We request that AEMO provide additional information in the Draft Determination regarding a potential range of output bin sizes and the potential impact on FUM values compared to the current output bin structure and FUM value changes. Absent this analysis we are unable to properly consider the proposed change.

### **Changing temperature input bin ranges**

We have no concerns with AEMO's proposed change with regards to Summer temperature conditions. We also recommend AEMO consider if a similar change is warranted for Winter conditions following the completion of the Winter 2018 period.

### **Reducing number of output nodes and interpolating in between**

Provided thorough testing is undertaken to ensure accuracy is retained or improved we support this change.

### **To extend the BBN models to cover the 144th trading interval**

We support the proposed change.

## Changes proposed to continue development of the process

### **Including additional predictors into Bayesian Belief Network (BBN) model.**

We request that AEMO provide additional information in the Draft Determination regarding this proposed change following completion of the analysis indicated in the Issues Paper. Absent this analysis we are unable to properly consider the proposed change.

### **Revision of definition of Regional Excess Supply**

ERM Power has concerns that this proposed change will result in an additional conservative bias in the calculation of reserve levels. From an operational perspective, energy constrained scheduled generation would maximise plant capability through periods of forecast high demand conditions where market revenue potential would be expected to be the highest. In addition, energy constrained scheduled generator providing reserve would do so without necessarily consuming input energy. Whilst the recently implemented change to the Pre-Dispatch and Short Term Projected Assessment of System Adequacy process more evenly distributes energy constrained scheduled generation across a Trading Day, the process still results in a conservative allocation of actual generation capability in an individual Trading Interval, particularly at times of higher demand.



We do not believe this extra level of conservative bias in the calculation of reserve levels is required or in fact warranted.

### **Flexibility in determining the frequency of retraining**

Given that the models have only been in operation for a relatively short period, and to date only one model retraining process has been undertaken, ERM Power believes it is premature to support AEMO's proposed change and would strongly prefer that model retraining continue at 3 monthly intervals until at least June 2020.

We acknowledge that AEMO has commenced improvement projects with regards to AEMO's forecasting processes; however, improvements in this area will require time to flow through to the FUM calculation models and we believe it is important that any improvements are captured in a timely manner. Currently, inputs to the models are biased to historical forecasting accuracy outcomes and we believe given the current improvement projects, AEMO should consider if the application of weightings in the modelling process is warranted to give greater weighting to periods where improvements in AEMO's forecasting processes have been observed.

ERM Power remains concerned by an apparent continued conservative bias towards over-forecasting during higher forecast demand periods. Whilst in theory this positive error will eventually flow through to the FUM calculation process, these high demand periods are of only 2 to 4 hours duration in any given day and as such, under-forecasting errors in less critical demand periods may swamp the over-forecasting bias in higher demand periods in the FUM calculation methodology. We recommend AEMO conduct analysis to consider if the FUM calculation should continue based on errors from all Trading Intervals or if the error inputs should be confined only to those Trading Intervals in any day where forecasting accuracy is more critical.

### **Areas proposed for future reviews to continue development of the process**

In the current consultation process both the Reasonability Limit Values and the Confidence Levels Values were not considered. Both the values are currently set at very high levels. We recommend that AEMO consider additional consultation on the Guidelines following the summer of 2018/19, and that analysis be undertaken on these values with regards to their ongoing effectiveness and suitability given their potential to result in additional costs to consumers.

### **Suggested improvements to AEMO's NEM Lack of Reserve Framework Report**

Whilst not forming part of this consultation process, ERM Power would like to suggest a number of improvements to AEMO's NEM Lack of Reserve Framework Report which is issued on a quarterly basis.

- Separation of the identified Actual LOR2, Actual LOR1, Forecast LOR2 and Forecast LOR1 notifications into 4 separate tables
- Inclusion of the FUM and minimum reserve level values in the tables
- Improvements in the comments areas regarding the cause of updates to forecast or actual LOR conditions and reasons where LOR conditions are cancelled

### **Conclusion**

Given the relative infancy of the FUM calculation process and its potential to negatively impact the efficient operation of the NEM and the impact this may have on costs to consumers, regular review of both inputs to the calculation methodology and the process Guideline are warranted. ERM Power will continue to engage with AEMO to consider, support and suggest improvements which we believe are warranted. We thank AEMO for the opportunity to provide input to the current consultation process.

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](mailto:dguiver@ermpower.com.au)