

9 January 2020

Mr John Pierce  
Chairman  
Australian Energy Market Commission  
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By online submission

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Dear Mr Pierce

**Draft Rule Determination – Improving transparency and extending duration of MT PASA (ERC0270)**

Thank you for the opportunity to provide a submission to the Commission’s draft rule determination relating to improving the transparency and extending the outlook of the medium-term projected assessment of system adequacy (MT PASA).

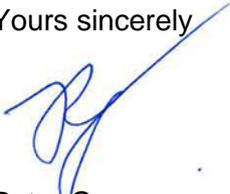
As stated in our submission to the AEMC’s consultation paper, AEMO shares the broad objective that increased transparency will provide more efficient outcomes for all market participants, and supports initiatives that reduce information asymmetry in the NEM.

AEMO is committed to supporting the implementation of the draft rule as far as reasonably practicable. AEMO considers that some elements of the draft rule are not cost-effective from an implementation perspective however, and other elements would benefit from further clarification or enhancement. AEMO requests the Commission to consider the merits of the issues outlined in our submission, in particular:

- The proposed alternative approach of only extending the submission and publication of availability data to three years, which we consider would deliver the benefits sought and provide better value for consumers; and
- Clarifying that the MT PASA outputs should be reflective of MT PASA inputs, particularly with regards to the approach to publishing the maximum and minimum values of daily demand forecasts from both the 50% and 10% POE demand traces. AEMO intends to update our methodology which will provide more accurate, meaningful and transparent values for market participants, aligned to the objectives of this rule change proposal.

We welcome the opportunity to discuss the matters raised in this submission further. Should you have any questions, please contact Kevin Ly, Group Manager Regulation at [kevin.ly@aemo.com.au](mailto:kevin.ly@aemo.com.au).

Yours sincerely



Peter Geers  
**Chief Strategy and Markets Officer**

Attachment 1: AEMO submission

## ATTACHMENT 1:

### AEMO SUBMISSION TO THE DRAFT RULE DETERMINATION – IMPROVING TRANSPARENCY AND EXTENDING DURATION OF MT PASA (ERC0270)

#### 1. Introduction

AEMO welcomes the opportunity to provide a submission to the Commission’s draft rule determination relating to improving the transparency and extending the outlook of the medium-term projected assessment of system adequacy (MT PASA).

As stated in our submission to the consultation paper, AEMO shares the broad objective that increased transparency will provide more efficient outcomes for all market participants, and supports initiatives that reduce information asymmetry in the NEM.

The PASA is a comprehensive program of information collection, analysis and disclosure of medium term and short-term power system security and reliability of supply prospects so that Registered Participants are properly informed to enable them to make decisions about supply, demand and outages of transmission networks in respect of periods up to two years in advance.

With the unprecedented transformation of the market and increasing number of intermittent generators coming online, predicting the medium-term demand-supply balance has become increasingly challenging. AEMO appreciates that commercial decisions to increase supply and/or demand response are based on the provision of accurate, timely and transparent information.

Having considered the draft determination, including feedback from market participants and stakeholders to the consultation paper, AEMO is committed to supporting the implementation of the draft rule as far as reasonably practicable. AEMO considers that some elements of the draft rule are not cost-effective from an implementation perspective however, and other elements would benefit from further clarification or enhancement. AEMO requests the Commission to consider the merits of the issues and proposed enhancements outlined below.

#### 2. Publication of generator availability data

AEMO is supportive of the Commission’s draft rule for AEMO to publish scheduled generating unit availability information at the individual dispatchable unit identification (DUID) level on the basis that it will improve the transparency and the accuracy of information regarding the supply side of the NEM; AEMO is technically able to publish this information with low additional cost; and the Commission is satisfied that it is unlikely to increase the risk of coordinated market power.

AEMO has interpreted this requirement as applying to scheduled generation as per the current rules’ requirement and practice; that is, the draft rule does not apply to semi-scheduled, intending or new entrant generation. AEMO requests that the Commission consider clarifying this in the final determination.

AEMO proposes that the AEMC should consider whether the requirements for generators to provide availability inputs that reflect the impact of temperature deratings, and for AEMO to publish individual generator availability, should be extended to semi-scheduled generation in the future. This would bring the requirements and information disclosure for scheduled and semi-scheduled generation into alignment.

### 3. MT PASA duration

The AEMC's draft rule is to extend the MT PASA outlook from two to three years. The Commission considers that providing market participants with generation availability and reliability assessment information, at a daily resolution, over a three-year outlook would allow participants to respond, through:

- generators adjusting planned maintenance schedules over a longer period
- greater confidence in future market conditions and contracting
- investment in new supply.

The Commission noted that the Electricity Statement of Opportunities (ESOO) forecasts are published yearly, at a yearly resolution, and are less likely to provide the level of information required by participants to identify capacity shortfalls, adjust maintenance schedules, and improve market liquidity.

As stated in our submission to the Commission's consultation paper, the purpose of the MT PASA is to provide the market with information related to possible low reserve conditions and to assist market participants in making operational decisions.

AEMO remains of the view that extending the MT PASA reliability outlook from two to three years does not deliver any benefit to the market. AEMO proposes that rather than extending the reliability outlook component of MT PASA, the benefits described above would be delivered by extending the period over which participants are required to submit PASA availability, and the publishing of that availability. The following sub-sections set out AEMO's reasoning for this proposed alternative approach.

#### 3.1. Overlap with existing processes

The ES00 incorporates a reliability assessment against the reliability standard defined in the National Electricity Rules (NER) and AEMO's Reliability Forecast under the Retailer Reliability Obligation (RRO), and is the primary mechanism for informing market participants, new investors, and jurisdictional bodies about development opportunities in the National Electricity Market (NEM) over a 10-year outlook.

A number of stakeholders in their submissions indicated that an extension of MT PASA would provide a means for stakeholders to understand how the forecast of USE in the third year has changed, potentially due to some market response. Under the NER, if after the publication of the ES00, information becomes available to AEMO that materially changes the ES00, AEMO must as soon as practicable publish that information and, if appropriate, publish an updated reliability forecast.

The ES00 would also be the primary publication used to determine requirements for RERT three years out as proposed in the draft rule for the Victorian jurisdictional derogation on RERT contracting. AEMO's view is that the ES00 is AEMO's most comprehensive view of reliability and will often take precedence over the MT PASA forecasts.

The ES00 and MT PASA simulation models are identical and differ only in the inputs assumed. The ES00 provides more flexibility to account for the full spectrum of risks and uncertainties that could influence reliability. Furthermore, the MT PASA forecast may be influenced by generator outages that are scheduled to occur during summer, however this outage could be flexible based on short-term forecasts. These outages could inflate the USE forecast and may not be appropriate to consider when procuring RERT. MT PASA is therefore not required to be extended as a result of the possible extension to RERT contracting in Victoria.

Therefore, AEMO does not believe there is value in having overlapping USE forecasts of this period, particularly given the costs and challenges involved in an extended MT PASA horizon documented below.

### **3.2. Cost**

Undertaking the reliability assessment is a detailed, complex and relatively costly process. AEMO uses probabilistic modelling to determine the expected USE by NEM region. This is done through time-sequential modelling at the interval level using Monte-Carlo simulations of security-constrained optimal dispatch. AEMO compares the probability-weighted USE assessment against the reliability standard and identifies where the standard is exceeded.

AEMO has now undertaken a detailed assessment of the system upgrades that would need to be undertaken to extend the reliability outlook component of the MT PASA to three years. The estimated cost of this work would be approximately AUD \$800,000, in addition to an increase in operational cost of approximately AUD \$150,000 per annum. Further to these costs, the upgrades would require AEMO to allocate internal staff away from other activities we regard as more critical to the achievement of the National Electricity Objective (NEO).

These cost estimates relate purely to the development of the MT PASA system and do not account for other costs which are described further below.

AEMO considers that both the financial expenditure and allocation of internal resources does not represent value for money for consumers given the questionable benefits delivered from the extended reliability assessment.

### **3.3. Quality of data**

AEMO is of the view that the input data that would be used in the third year of the reliability assessment would be of poor quality. The primary inputs that regularly change in the MT PASA process are the availability submissions from market participants and the inclusion of planned transmission outages.

With regards to generator outages, AEMO observes that the frequency with which outages are submitted reduces beyond the first year, and that presumably this would further reduce for any subsequent period. Furthermore, generator outages are very frequently shifted as they get closer, particularly in response to changes in the timing of planned transmission outages.

AEMO therefore doubts that the information provided by a third year of the MT PASA reliability assessment would produce meaningful outcomes, or utilise better information than already assumed for this period in the ESOO. If a prolonged generator outage is expected to impact capability three years out, this information is already required to be submitted to AEMO as part of the ESOO information.

### **3.4. Challenges in extending modelling horizon**

The probabilistic modelling conducted in the MT PASA reliability assessment relies on a number of complex inputs, including the application of a comprehensive set of network constraint equations that represent the thermal and stability limits that currently constrain dispatch in the NEM. The MT PASA system uses constraints that are implemented within AEMO's operational market systems.

If the reliability outlook was extended for three years, AEMO would need to be able to model the impact of major changes to the transmission network three years in advance. For example, if the EnergyConnect interconnector is approved through the RIT-T process, the

impact of the upgrade will need to be incorporated into reliability assessments from the expected commissioning date. For the ESOO, this is achievable as the constraints are developed and tested in a system that sits outside the AEMO operational market system. This process utilises a more flexible system than is used for the development of operational constraints. The MT PASA process that runs on a weekly basis cannot be easily migrated to use the constraints that are developed for longer-term studies such as the ESOO.

If MT PASA were extended to three years, this would require AEMO to incorporate the impact of network augmentations on constraint equations within operational systems. This would have a significant capital and operating expenditure impact, and require additional resourcing. Given that there could be relatively limited time between the approval of network investment and the end of the MT PASA horizon, and the substantial challenges involved, AEMO foresees a significant likelihood that MT PASA would not be able to incorporate the impact of approved network augmentations that sit within the three-year horizon. This could result in the MT PASA reliability assessment three years ahead being inconsistent with, and more conservative than, the ESOO assessment which would at least include an approximation of impacts of any new committed transmission developments.

### **3.5. Summary**

AEMO is strongly of the view that the costs and complexities associated with implementing this element of the draft rule outweigh the benefits, particularly when detailed USE forecasts are already available through the ESOO and any intra year updates.

AEMO believes that the benefits of the MT PASA extension described in some of the stakeholder submissions would be achieved through an extension of the submission and publication of availability data to three years; and that the reliability assessment component is not necessary for these benefits to be achieved. AEMO therefore considers this to be a preferable approach that delivers value for consumers.

In addition, AEMO notes that with increasing concerns about the risk of load shedding due to uncontrollable, high impact events such as coincident unplanned outages and higher peak demand due to more extreme weather events, the COAG Energy Council (at its meeting on 22 November 2019) requested the Energy Security Board (ESB) to undertake an immediate review of the NEM reliability standard to ensure that it is fit for purpose and to assess benefits and costs to consumers. The ESB will report to Council with its recommendations by March 2020 such that any change to the reliability standard will be made in time to inform the next ESOO. As there may be further system redevelopment required to accommodate any potential changes to the reliability standard, it may be prudent to wait until that time before committing to a three-year reliability assessment outlook for the MT PASA.

## **4. Transparency of generator forced outage value**

The draft rule requires AEMO to publish a maximum and minimum aggregated scheduled generating unit PASA availability for each region, adjusted for scheduled generator probabilistic forced outage data.

While AEMO is supportive of this requirement, and technically able to implement it, the change is not an insignificant one. As stated in our submission to the consultation paper, this will require AEMO to process and store individual generator unit availability from each of the Monte Carlo simulations conducted in MT PASA, and the development of a method to aggregate the data to identify maximum and minimum values. This will take some time to develop, test, adjust as needed, and implement. AEMO therefore requests that the

implementation date for this requirement be extended to 22 February 2021, to align with the MT PASA outlook element of the rule change.

In addition, AEMO considers that aggregated maximum and minimum values are not meaningful statistics for market participants, as the minimum will usually represent an outlier event given the number of simulations undertaken in an MT PASA run. AEMO is of the view that 10% and 90% probability of exceedance (POE) would provide more useful information for market participants because it provides a representation of the range of availability outcomes, consistent with how other results are reported in the MT PASA tables.

AEMO suggests that the Commission give further consideration to the most meaningful aggregated generator forced outage value for participants.

## **5. Intending generation**

The draft rule requires AEMO to include the capabilities of proposed generation in the MT PASA, consistent with the ESOO information requirements set out in the NER.

AEMO is supportive of this element of the draft rule. As recognised by the Commission in its draft determination, AEMO has recently expanded the range of intending generation projects it includes in both the ESOO and MT PASA. The MT PASA includes new generation inputs once generators are classified as 'committed' on a continual basis. The MT PASA Process Description clearly states that committed generation that is under development is included in MT PASA, and details the approach for scheduled and semi-scheduled generation.

## **6. Transparency and ease of use of demand data**

The draft rule requires AEMO to align the formats of published forecast and actual demand data to reduce confusion, and improve transparency of information provision, which would allow participants to make better informed decisions.

As stated in our submission to the consultation paper, AEMO has no strong objections to this change. AEMO has interpreted this requirement as requiring the publication of forecast and actual demand on an 'as generated' basis through the MT PASA system; that is, the requirement does not require the publication of forecast or actual scheduled demand. Publishing forecast scheduled demand requires a point forecast of the contribution from non-scheduled generation at time of peak. AEMO requests that the Commission consider clarifying this in its final determination by specifically referencing a demand definition.

In relation to the published demand forecasts, AEMO requests that the AEMC provides additional clarification in relation to the linkage between the publishing requirements (in 3.7.2(f)(1)) and the preparation of *MT PASA inputs* (in 3.7.2(c)(1)). Currently there is no direct linkage between these clauses, and as a result the data published under the requirements in (f) are not related to the *MT PASA inputs* prepared as per (c). As described in AEMO's previous submission, the values currently published for the daily 10% and 50% peak loads are not used in the MT PASA process, provide no value to AEMO, and impose an additional cost for AEMO to produce. AEMO suggests that (f) is revised to specifically state that the publication requirement is for the *MT PASA inputs*, which we believe is the intent of the rules.

AEMO is supportive of ERM's proposal for AEMO to provide in the published MT PASA data the maximum and minimum values of daily maximum demand forecast outcomes from both the 50% and 10% POE demand traces. AEMO's view is that providing outputs based on the demand traces currently used in MT PASA meets the publishing requirements in 3.7.2(f)(1)

and intends to replace the current methodology with a new methodology based on the demand traces.

The current approach involves publishing data that is not used or relied on by AEMO and has been a source of confusion amongst stakeholders. AEMO's view is that the change to publish demand outputs based on the MT PASA inputs will be more meaningful to stakeholders and better reflect the best practice forecasting principles of transparency, accuracy and accountability.

Therefore, AEMO is not supportive of ERM's proposal for this to be in addition to the existing requirement to publish daily 10% and 50% peak demand forecasts as these outputs will meet our requirements under 3.7.2(f)(1).

AEMO is also not supportive of the requirement to issue advice as to whether a forecast has been updated on a monthly basis. AEMO views this requirement as unnecessarily onerous and inefficient. The current forecasts are published through AEMO's demand forecasting portal and therefore, any update to the forecast will be visible through this portal. Where AEMO has actionable evidence that conditions have changed, an updated forecast will be provided on the AEMO forecasting portal. The updated forecast will then be reflected in the next set of published MT PASA results and will be indicated as such through the regular market notice. A material change in demand forecasts would also trigger an ESOO update.

## **7. Current intentions and best estimates**

The draft rule requires participants to provide MT PASA inputs that represent their current intentions and best estimates, consistent with the requirement for ESOO information. AEMO agrees that the information requirements for the MT PASA are not currently as strong as the ESOO and ST PASA under the rules, and therefore welcomes this change to support a more accurate assessment of medium-term system adequacy.

AEMO notes ERM's further proposal that generators provide a MT PASA reason with their outage submissions. AEMO considers that a better approach would be for scheduled generators or market participants to identify the type of outage when submitting individual MT PASA submissions, which would enable AEMO to more effectively plan and operate the system.

The information would also allow AEMO to undertake historical analysis to understand the reasons for outages, which is not possible with the current level of information provided. This could be achieved through the inclusion of a drop-down menu in MT PASA outage submissions, with a number of pre-defined categories, such as Planned, Unplanned, Forced, Partial, and Reserve.

This would require a minor adjustment to AEMO's systems to accommodate the generator outage classification menu, and potentially minor changes to market participants systems/processes, likely to be at minimal cost.

AEMO considers that this change is complimentary, but preferable to, ERM's proposal that generators provide a MT PASA reason with their outage submissions, as it would provide a more consistent approach to collecting and analysing outage information, and reduce the administrative burden for market participants.

## **8. Related enhancement – Recall times**

AEMO has identified a related operational and efficiency enhancement to the MT PASA relating to recall times. AEMO considers that there would be value in incorporating a new requirement under clause 3.7.2 of the NER for scheduled generators or market participants to include a recall time when submitting individual MT PASA outages.

This information would be visible only to AEMO, but would allow us to more efficiently manage the reliability and security of the power system based on submitted recall times rather than needing to seek this information from market participants on an ongoing basis.

Having access to recall times would not only boost AEMO's visibility over the supply-side but would also cut down on the need to respond to queries from market participants about recall times, which currently places an additional significant workload on AEMO's operational team. To reduce any additional administrative burden on market participants, the requirement could be limited to a one-year outlook, as this near-term information is likely to be most accurate and beneficial to AEMO.

This change would require a minor adjustment to AEMO's systems to accommodate a recall time field, and potentially minor changes to market participants systems/processes, however this is likely to be at minimal cost.

## **9. Conclusion**

AEMO is committed to implementing the draft rule as far as reasonably practicable to support increased transparency, reduced information asymmetry, and more efficient outcomes in the NEM. The draft rule as proposed needs to be weighed up against the complexities, costs and benefits of implementing the changes.

AEMO therefore requests that the Commission consider the merit of the issues raised in our submission, in particular:

- The proposed alternative approach of only extending the submission and publication of availability data to three years, which we consider would deliver the benefits sought and provide better value for consumers; and
- Clarifying that the MT PASA outputs should be reflective of MTPASA inputs, particularly with regards to the approach to publishing the maximum and minimum values of daily demand forecasts from both the 50% and 10% POE demand traces. AEMO intends to update our methodology which will provide more accurate, meaningful and transparent values for market participants, aligned to the objectives of this rule change.