AEMC

RULE

Australian Energy Market Commission

RULE DETERMINATION

NATIONAL ELECTRICITY AMENDMENT (IMPROVING TRANSPARENCY AND EXTENDING DURATION OF MT PASA) RULE 2020

PROPONENT

ERM Power

20 FEBRUARY 2020

INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

SUMMARY

1 The NER require that AEMO administer the projected assessment of system adequacy (PASA) processes.[1] The PASA is the principal method of indicating to the National Electricity Market (NEM) a forecast of electricity system security and reliability for a period of up to two years. The NER requires AEMO to administer the PASA for both a medium-term and short-term period.

2 The Australian Energy Market Commission (AEMC or Commission) has made a more preferable final rule to amend the medium-term PASA (MT PASA). The final rule improves transparency of the MT PASA process, reduces asymmetry of generation availability information in the market, and extends the period generation availability is published from two to three years. These changes will better inform the market at a granular level on projected assessments of reliability and generation availability, and will likely result in participants making more effective and efficient decisions in how they interact with the market.

3 The final rule is in response to a rule change request submitted by ERM Power. The final rule adopts four of the seven proposed changes, plus two more preferable changes and one additional change raised by the Australian Energy Regulator (AER).

4 Overview of ERM Power's rule change request

5 On 31 March 2019 the Commission received two rule change requests from ERM Power that relate to the MT PASA. These were consolidated on initiation of the project. ERM Power sought changes to the rules governing MT PASA in the following areas:

- Amendments to improve transparency and accuracy of generation availability data through the provision of individual generator availability data, the inclusion of committed generation in the MT PASA process and additional information on the impact of unplanned generator outages.
- Amendments to improve transparency and accuracy of demand forecasts through requiring AEMO to publish an additional demand forecast, increasing the frequency of demand forecast updates and simplifying the format of published demand.
- Changes to extend the outlook of MT PASA from two to three years. This would require market participants to provide information for up to three years in advance, while AEMO would be required to run the MT PASA process including the reliability forecast for the coming three years.

6 Key features of the more preferable final rule

7 The key features of the more preferable final rule are that it will provide the market with:

- Generation availability of individual scheduled generating units.
- An extended outlook of generation availability from two to three years.

1 Clause 3.7.1 of the NER

- A maximum and minimum aggregated scheduled generating availability, adjusted for forced outage assumptions.
- Transparency of intending generation included as an MT PASA input.
- Greater transparency of the maximum and minimum values of daily forecast peak demand, from both the adjusted 50% and 10% probability of exceedance (POE) load traces used in the reliability assessment.
- Published actual demand and forecast demand in the same format (operational 'as generated').
- A requirement on participants to provide MT PASA inputs that represent their current intentions and best estimates.

8 While the Commission's final rule is a more preferable rule it incorporates many of the elements proposed by ERM Power. The key differences between the final rule and the proposed rule are that the Commission has:

- Made a change to extend the outlook of published generation availability from two to three years, instead of extending the full MT PASA from two to three years.
- Made a change to require AEMO to publish the maximum and minimum values of daily demand forecasts, from both the adjusted 50% and 10% POE profiles of load traces used in the reliability assessment, instead of publishing an additional daily peak demand forecast of 90POE.
- Made the AER's proposed change to require participants to provide MT PASA inputs that represent their current intentions and best estimates.
- Not made the proposed draft rule for requiring a more frequent update to AEMO's demand forecast, a key input into the MT PASA.

9 Benefits of the more preferable final rule

10 The Commission is satisfied that the more preferable final rule will, or is likely to, better contribute to the achievement of the NEO. In the context of the assessment framework, this is because the final rule is likely to:

- **Improve transparency and quality of information:** The final rule provides for greater transparency and quality of generation information over a longer period, and formalises, through the NER, AEMO's approach to including intending generation in forecast generation availability. These changes will better inform the market of generation availability, and allow participants to make better-informed decisions regarding scheduling planned maintenance, entry of new supply and contracting.
- **Promote reliability of the power system:** The final rule allows participants to make better informed decisions in relation to scheduling planned maintenance, including for the two to three year time horizon, and may better inform investment decisions in new supply or demand response options. In particular, the final rule may improve market liquidity and market confidence. This is likely to give participants a greater opportunity to respond to a T-3 reliability event triggered through the Retailer Reliability Obligation (RRO). It may also improve the reliability of the system through earlier notice to the market and the ability to respond to periods of low generation availability.

- **Minimise direct and indirect costs:** The final rule allows participants to access more granular and more accurate information, at the same level as other participants, and without a disparity in resources and costs to do so. The final rule increases transparency and quality of information which allows participants to make better informed and efficient decisions, particularly in relation to scheduling units outages. This may reduce the likelihood of USE and result in more efficient Reliability and Emergency Reserve Trader (RERT) procurement, which may reduce costs passed through to consumers.
- **Provide regulatory certainty:** The final rule improves clarity regarding MT PASA inputs and outputs. In particular, it formalises through the NER how AEMO includes intending generation in the reliability assessment, and aligns the format of published demand forecasts and actuals. This may provide participants with greater confidence in assessing the MT PASA outputs and allows them to make better-informed decisions.

11 Implementation of the final rule

12 Under the final rule, the changes to the MT PASA will be implemented in two stages over a six-month period from publication of the final rule on 20 February 2020. The implementation dates are set out below and have been informed by AEMO.

13 The changes taking effect three months after publication of the final determination will allow AEMO to review the MT PASA process, add a minor calculation to the MT PASA output, and allow generators to review their processes for producing MT PASA inputs to confirm that they deliver the generators' current intentions and best estimates. The changes taking effect six months after publication of the final determination are more complex. They will require generators to submit information over a longer period-of-time, and require AEMO to develop additional modelling outputs, calculations and fields to publish this information.

Table 1: **Implementation date for changes**

CHANGE	DATE
Include intending generation as an MT PASA input.	20 May 2020
Publish actual demand and forecast demand in the same format (operational 'as generated').	20 May 2020
Require participants to provide MT PASA inputs that represent their current intentions and best estimates.	20 May 2020
Publish generation availability of individual scheduled generating units.	20 August 2020
Extend published generation availability horizon from two to three years.	20 August 2020
Publish a maximum and minimum aggregated scheduled generating availability, adjusted for forced outage assumptions.	20 August 2020
Publish the maximum and minimum values of daily peak load forecast from both the adjusted 50% and10% POE load traces used in the reliability assessment.	20 August 2020

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1 ERM POWER'S RULE CHANGE REQUEST

1.1 The rule change request

On 31 March 2019, ERM Power requested the Australian Energy Market Commission (AEMC or Commission) to make a rule regarding the medium-term projected assessment of system adequacy (MT PASA).[2]

ERM Power's rule change request proposed seven changes to improve the transparency and accuracy of the MT PASA process, and extend the duration of the MT PASA output from two to three years.

Specifically, the rule change request proposed to amend the National Electricity Rules (NER) to:

- Publish data on the availability of individual generator units, as an MT PASA output.
- Extend the outlook horizon of the MT PASA from two to three years.
- Publish more data on the aggregate impact of unplanned outage rates on modelled generator availability, as an MT PASA output.
- Include intending generation as an MT PASA input.
- Publish additional peak demand forecast information, as part of the MT PASA process.
- Publish actual and forecast demand data in a consistent format, the latter being an input to MT PASA.
- Update the demand forecast monthly, a key input to the MT PASA.

1.2 Current arrangements

The NER require that AEMO administer the projected assessment of system adequacy (PASA) processes.[3] The PASA is the principal method of indicating to the National Electricity Market (NEM) a forecast of electricity system security and reliability for a period of up to two years. The NER requires AEMO to administer the PASA for both a medium-term and short-term period. The subject of this rule change request relates to the medium-term process, or MT PASA.

The primary objective of the MT PASA is to provide sufficient information on the expected level of medium-term generator capacity reserves and hence allow market participants to efficiently schedule planned outages of generating units and network maintenance.[4]

In addition, the MT PASA is fundamental to AEMO's procurement of emergency reserves. AEMO models the power system through the MT PASA to assess whether or not the reliability standard is projected to be met (i.e. by modelling the expected unserved energy for a given year in a given region). An expected shortfall, relative to the reliability standard, is termed a low reserve condition. AEMO encourages a market response once it has declared a low

2 ERM Power submitted two rule change requests which were consolidated on initiation (18 July 2019) under s.93 of the National Electricity Law.

3 Clause 3.7.1 of the NER

4 NER clause 3.7.1(b)

reserve condition. If a market response is not forthcoming, AEMO may intervene, up to nine months ahead,[5] through the procurement of emergency reserves using the reliability and emergency reserve trader (RERT).[6]

Chapter 3 (clause 3.7.2) of the NER outline the provisions for the MT PASA, including inputs into the process and the output produced by AEMO. Inputs used in the MT PASA process are provided or projected by both AEMO and market participants. Inputs include demand forecasts, network constraints, generation capacity, energy constraints, intermittent generation forecasts and planned network outages.

1.2.1 Generation availability data

The NER state that AEMO must publish generation availability for each region, aggregated at the region level.[7]

1.2.2 Duration of MT PASA outlook

The NER specify the MT PASA covers a 24-month period.[8]

1.2.3 Generation forced (unplanned) outage rates

The NER do not specify that AEMO need to report forced (unplanned) generation outage rates, although they do state AEMO are required to produce the Medium Term PASA Process Description[9] which notes probabilistic assessment of forced outages are included in the MT PASA inputs.[10]

1.2.4 Intending generation

The NER specify that AEMO include scheduled generation availability and an AEMO forecast of semi-scheduled generation in the MT PASA inputs.[11] The rules do not specify the inclusion of intending generation capacity in the MT PASA process. AEMO's Medium Term PASA Process Description, however, notes that future generation classified as 'committed'[12] generation is modelled in the MT PASA.[13]

1.2.5 Demand forecasts

The NER state that AEMO must prepare two demand forecasts for the MT PASA that:

- have a 10 per cent probability of exceeding daily peak load i.e. 10POE, and

5 Clause 3.20.3(d) of the NER. As from 26 March 2020, this will be 12 months ahead, consistent with the Enhancement to the Reliability and Emergency Reserve Trader (RERT) final rule.
6 Rule 3.20 of the NER.
7 Clause 3.7.2 (f)(5) of the NER.
8 Clauses 3.7.2(a) of the NER.
9 Clause 3.7.2(g) of the NER.
10 AEMO (2018) *Medium Term PASA Process Description*, p. 14.
11 Clauses 3.7.2(c)(4) and 3.7.2(d) of the NER.
12 NER clause 11.10A.1
13 AEMO (2018) *Medium Term PASA Process Description*, pp. 9-10.

- is the most probable peak load, typically taken to have a 50 per cent probability of exceeding peak load i.e. 50POE.[14]

1.2.6 Publishing format of actual and forecast demand

The NER do not specify the format (demand type) to be published for actual and forecast demand for the MT PASA.

1.2.7 Frequency of demand forecast updates

The NER do not specify how frequent demand forecasts should be updated for the MT PASA, but they do state that the Electricity Statement of Opportunities (ESOO) demand forecast is updated annually,[15] or as soon as practicable if new information would result in a material change to the ESOO. The Reliability Standard Implementation Guidelines (RSIG) state[16] that the ESOO demand is used for the MT PASA process.

1.3 Rationale for the rule change request

The following sections describe each of the seven issues that ERM Power proposed in its rule change request.

1.3.1 Generation availability data

ERM Power argued that consolidation of a significant share of NEM generator capacity into a small number of large vertically integrated retailers, 'gentailers', allows large generators to benefit from a significant information asymmetry advantage with regards to knowledge of generator full and partial outage plans.[17] ERM Power considered this is further compounded by the sharing of additional outside market knowledge of outages between the large gentailers.[18]

ERM Power noted that currently, smaller generators, retailers, market intermediaries and larger market-facing consumers expend resources analysing MT PASA information to determine which generating unit may be planning an outage, sometimes with only limited success.[19] The NER only requires AEMO to publish generator availability data at an aggregate level by region, not withstanding that the data is submitted to AEMO on a generating unit basis.

1.3.2 Duration of MT PASA outlook

Currently the MT PASA covers a two-year period. ERM Power argued that with the current speed of changes in the NEM and the intermittent nature of output from the most common sources of new generation supply, which also has varying correlation to system demand

14 Clause 3.7.2 (c)(1) of the NER.
15 NER clause 3.13.3A(a)
16 RSIG(v. 1.3 October 2016)'s s. 2.3.1.4
17 ERM rule change request Improving MT PASA transparency and accuracy, 31 March 2019, p.2.
18 Ibid, p. 2.
19 Ibid, p.3.

outcomes as determined by AEMO, there is a need for the supply-demand balance to be assessed regularly at the level of granularity provided in the MT PASA over a longer duration.[20] This would provide improved and earlier signals than is currently the case for new supply capability or demand management in the medium-term timeframe.

1.3.3 Generation forced (unplanned) outage rates

ERM Power noted AEMO uses generator availability values which have been adjusted for probabilistically determined unplanned (forced) outages in the MT PASA. ERM Power noted the outputs from the MT PASA process currently provide no transparency with regards to the level of variability in the available generation capacity used in the modelling.[21]

1.3.4 Intending generation

ERM Power noted that currently clause 3.7.2 of the NER requires that only a scheduled generator that has been approved for registration by AEMO is required to submit MT PASA inputs.[22] In addition, AEMO is required to provide an unconstrained intermittent generation forecast (UIGF) only for each registered semi-scheduled generating unit for each day. ERM Power noted it is unclear if these requirements apply to intending participants.[23]

ERM Power argued that omitting from the MT PASA, generation that is currently under construction and expected to commence, output within the MT PASA assessment time frame could result in additional and unnecessary costs to consumers (e.g. by triggering the long-notice RERT).[24]

1.3.5 Demand forecasts

ERM Power noted that the NER only requires AEMO to calculate and publish the "forecasts of the 10% probability of exceedance (POE) peak load, and most probable peak load".[25] [26] The most probable peak load is generally referred to as the 50 per cent probability of exceedance (or 50POE[27]) peak load forecast. The NER do, however, require AEMO to estimate 90POE demand for the purpose of the MT PASA.

As well as reporting these demand figures, ERM Power noted that AEMO also use the demand forecasts in its probabilistic modelling process to forecast the potential for unserved energy (USE) within the MT PASA timeframe. In the MT PASA timeframe, AEMO only uses the 10POE and 50POE forecast demand when modelling USE. ERM Power argued that not including 90POE demand in the USE modelling was leading to inflated forecasts of USE.[28]

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20 ERM Power rule change request: Extension of MT PASA duration, 31 March 2019, p. 2.
21 Ibid, p. 5.
22 Ibid, p. 5.
23 Ibid, p. 5.
24 Ibid, p. 6.
25 Ibid, p. 3.
26 Refering to clause 3.7.2 of the NER
27 From here on "50POE", will generally be used as the short hand expression, as will 10POE and 90POE.
28 ERM Power rule change request: Extension of MT PASA duration, 31 March 2019, p. 4.

1.3.6 Publishing format of actual and forecast demand

ERM Power observed significant concerns with the transparency and ease of use of demand data provided by AEMO.[29] AEMO currently publishes demand forecast information in various formats, including:

- native sent out or native as generated
- operational sent out or operational as generated
- scheduled as sent out or scheduled as generated.

ERM Power stated that AEMO publishes demand data in real time on both an operational as generated and scheduled as generated basis to meet the requirements of clause 3.13.4(x) of the NER.[30] However, ERM Power observed that in MT PASA, forecast demand data is supplied by AEMO on an operational sent out basis.[31] This then requires the addition of separate estimated generator auxiliary load data to derive the value closest to the real time operational as generated data. ERM Power argued that market participants are finding this confusing and difficult to convert forecasts to actuals for comparison.[32]

1.3.7 Frequency of demand forecast updates

ERM Power noted that MT PASA demand forecasts are usually updated once a year, generally in May, in line with the planning process updates for the ESOO.[33] This results in an outcome where the last review of potential weather conditions and demand outcomes for the summer period may have occurred some six to eight months distant from the current summer period. This is of particular concern to ERM Power regarding the potential for overestimating USE, resulting in contracting of medium notice emergency reserves under the medium-notice RERT and higher costs for customers.

1.4 Solution proposed in the rule change request

ERM Power sought to resolve the issues discussed above by proposing a rule (proposed rule) to require AEMO to:

- Publish individual scheduled generating unit availability.
- Extend the duration of the MT PASA to three years.
- Publish the adjusted maximum and minimum aggregate scheduled generating unit availability for each region following the adjustment for the inclusion of scheduled probabilistic forced outage data.
- Include intending generation availability in the MT PASA process, at a level to be outlined in the Reliability Standard Implementation Guidelines (RSIG).
- Publish an additional daily peak demand forecast with a probability of exceedance of 90 percent (90POE).

29 Ibid, p. 4.
30 Ibid, p. 4.
31 Ibid, p. 4.
32 Ibid, p. 4.
33 Ibid, p. 3.

- Publish forecast and actual demand in the same format.
- Review and update their forecast demand monthly with specific regard to weather forecasts in the near term three-month period.

1.5 The rule making process

On 18 July 2019, the Commission published a notice advising of its commencement of the rule making process and consultation in respect of the consolidated rule change request.[34] A consultation paper identifying specific issues for consultation was also published. Submissions closed on 15 August 2019.

The Commission received 21 submissions as part of the first round of consultation. The Commission considered all issues raised by stakeholders in submissions. Issues raised in submissions are discussed and responded to throughout this final rule determination.

On 24 October 2019, the Commission published the draft determination.[35]

The Commission received 13 submissions as part of the second round of consultation and considered all issues raised by stakeholders. Issues raised in submissions are discussed and responded to throughout this final rule determination.

Issues that are not addressed in the body of this document are set out and addressed in Appendix A.

34 This notice was published under s. 93 and s. 95 of the NEL.

35 This notice was published under s. 99 of the NEL.

2 FINAL RULE DETERMINATION

2.1 The Commission's final rule determination

The Commission's final rule determination is to make a more preferable rule. The more preferable rule will improve the transparency and quality of information that is published through the MT PASA process.

The Commission's reasons for making this final rule determination are set out in section 2.3 and section 2.4.

2.2 Rule making test

2.2.1 Achieving the NEO

Under the NEL the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO).[36] This is the decision making framework that the Commission must apply.

The NEO is:[37]

> to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system.

The Commission considers, for this final determination, the most relevant aspects of the NEO are promoting the efficient investment in, and efficient operation of electricity supply, in the long-term interests of consumers with respect to:

- improving transparency and quality of information
- minimising direct and indirect costs
- promoting reliability of the power system
- providing regulatory certainty.

2.2.2 Making a more preferable rule

Under s. 91A of the NEL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NEO than the proposed rule.

36 Section 88 of the NEL.
37 Section 7 of thence.

In this instance, the Commission has made a more preferable rule. The more preferable rule requires changes to the MT PASA process, which are to:

- Publish generation availability of individual scheduled generating units.
- Extend the outlook of generation availability from two to three years.
- Publish a maximum and minimum aggregated scheduled generating availability, adjusted for forced outage assumptions.
- Include intending generation as an MT PASA input.
- Publish the maximum and minimum values of daily demand forecasts, from both the adjusted 50POE and 10POE profiles of load traces[38] used in the reliability assessment.
- Publish actual demand and forecast demand in the same format (operational 'as generated').
- Formalise through the NER a requirement on participants to provide MT PASA inputs that represent their current intentions and best estimates.

While the Commission's final rule is a more preferable rule it incorporates many of the elements proposed by ERM Power. The key differences between the final rule and the proposed rule are that the Commission has:

- Made a change to extend the outlook of published generation PASA availability from two to three years, instead of extending the full MT PASA from two to three years.
- Made a change to publish the maximum and minimum values of daily forecast peak load, from both the adjusted 50% and 10% POE load traces used in the reliability assessment, instead of publishing an additional daily peak load forecast of 90POE.
- Made AER's proposed change to require participants to provide MT PASA inputs that represent their current intentions and best estimates.
- Not made the proposed draft rule for requiring a more frequent update to AEMO's demand forecast, a key input into the MT PASA.

38 Load traces are yearly loads (or demands) at a daily granularity that are equal in energy consumption across the year but differ from one another based on a number of variables including when the peak demand occurs.

BOX 1: WHAT IS A PROBABILITY OF EXCEEDANCE (POE)?

Demand forecasts are often described as having a probability of being exceeded, or a POE. The POE indicates how probable it is that that demand forecast is likely to be exceeded by the actual demand. The more commonly used POEs are 90POE, 50POE and 10POE.

- **90POE demand forecast** - is where the probability of actual demand exceeding the 90POE demand forecast is 90%. This forecast level of demand will nearly always be exceeded.
- **50POE demand forecast** - is where the probability of actual demand exceeding the 50POE demand forecast is 50%. This forecast level of demand will be exceeded, on average, half of the time.
- **10POE demand forecast** - is where the probability of actual demand exceeding the 10POE demand forecast is 10%. This forecast level of demand will rarely be exceeded.

The probability is usually calculated on a yearly basis and used in respect of peak demand. For example, a 10POE peak demand forecast for summer would be expected to be exceeded on one or more days in any one summer in 10 years.

2.2.3 Making a differential rule

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant MCE statement of policy principles, a different rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule. A differential rule is a rule that:

- varies in its term as between:
  - the national electricity system, and
  - one or more, or all, of the local electricity systems, or
- does not have effect with respect to one or more of those systems

but is not a jurisdictional derogation, participant derogation or rule that has effect with respect to an adoptive jurisdiction for the purpose of s. 91(8) of the NEL.

As the rule relates to parts of the NER that currently do not apply in the Northern Territory, the Commission has not assessed the rule against the additional elements required by the Northern Territory legislation.[39]

39 From 1 July 2016, the NER, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under the NT legislation adopting the NEL (National Electricity (Northern Territory) (National Uniform Legislation) Act 2015). Under those regulations, only certain parts of the NER have been adopted in the NT (see the AEMC website for the NER that applies in the NT).

2.3 Assessment framework

In assessing the rule change request against the NEO the Commission has considered the most relevant aspects of the NEO are promoting the efficient investment in, and efficient operation of electricity supply in the long-term interests of consumers with respect to:

- **Improve transparency and quality of information:** The final rule provides for greater transparency and quality of generation information over a longer period, and formalises through the NER AEMO's approach to including intending generation in forecast generation availability. These changes will better inform the market of generation availability, and allow participants to make better-informed decisions regarding scheduling planned maintenance, entry of new supply and contracting.
- **Promote reliability of the power system:** The final rule allows participants to make better informed decisions in relation to scheduling planned maintenance in the two to three year time horizon, and may better-inform investment decisions in new supply or demand response options. In particular, the final rule may improve market liquidity and market confidence. This is likely to give participants a greater opportunity to respond to a T-3 reliability event triggered through the Retailer Reliability Obligation (RRO). It may also improve the reliability of the system through earlier notice to the market and the ability to respond to periods of low generation availability.
- **Minimise direct and indirect costs:** The final rule allows participants to access more granular and more accurate information, at the same level as other participants, and without a disparity in resources and costs to do so. The draft rule increases transparency and quality of information which allows participants to make better informed and efficient decisions, particularly in relation to scheduling units outages. This may reduce the likelihood of USE and result in more efficient Reliability and Emergency Reserve Trader (RERT) procurement, which may reduce costs passed through to consumers.
- **Provide regulatory certainty:** The final rule improves clarity regarding MT PASA inputs and outputs. In particular, it formalises through the NER how AEMO include intending generation in the reliability assessment, and aligns the format of published demand forecasts and actuals. This may provide participants with greater confidence in assessing the MT PASA outputs and allows them to make better-informed decisions.

Stakeholders who commented on the assessment framework supported it. They noted the assessment framework was appropriate to assess if the proposed changes would improve transparency and accuracy of the MT PASA process.[40]

2.4 Summary of reasons

The more preferable final rule made by the Commission is attached to and published with this final rule determination. The key features of the more preferable draft rule are that it provides market participants with:

- Greater granularity of scheduled generation availability information over a longer period.

40 Submissions to consultation paper: Delta Electricity, p.1; Energy Queensland, p. 2; EUAA, pp. 1-2; MEU, p. 2; Macquarie, p. 2.

- Improved clarity on how future generation and generation availability under a range of forced outage scenarios is included in the MT PASA process.
- More consistent information published between forecast and actuals, and with other generation availability forecasts i.e. alignment of information provisions for the MT PASA with the ST PASA and ESOO.

Having regard to the issues raised in the rule change request and during consultation, the Commission is satisfied that the more preferable draft rule will, or is likely to, better contribute to the achievement of the NEO.

Further detail on the more preferable final rule can be found in chapters 3 to 11**.**

3 PUBLICATION OF GENERATION AVAILABILITY

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's proposal to publish scheduled generator availability at the individual unit level, specifically the scheduled individual dispatchable unit identification (DUID) level.

3.1 ERM Power's rule change proposal

ERM Power argued that information asymmetry currently exists between the large vertically integrated retailers (or 'gentailers') and smaller generators.[41] According to ERM Power, this asymmetry is due to the big gentailers having visibility of the full and partial outage plans of their own generation fleet. ERM Power considered this is compounded by the large gentailers indirectly acquiring additional outside market knowledge about scheduled outages, through sharing of strategic spare parts/units and specialist contractors.[42]

ERM Power argued that small generators, retailers, market intermediaries and consumers do not have access to the same granularity of information on the scheduled outages of generators.[43] They argued these smaller generators and non-generator participants can only make inferences from the published, aggregated by region data, which requires significant resourcing and is susceptible to a high degree of inaccuracy.

ERM Power considered that this information asymmetry impacts on pricing in the gas markets where significant changes to fuel requirements for replacement generation at short notice may be required once the actual planned generator outage is known.[44]

The NER require AEMO to publish scheduled generator availability data in the MT PASA aggregated to a regional level. However, generators are required to provide information to AEMO for each of their individual units, at the DUID level. ERM Power considered that if AEMO were to publish the scheduled generating unit availability information it already collects, all market participants would be better equipped to make maintenance and planning decisions for their own plants.[45] While some stakeholders may view this information as being commercially sensitive, ERM Power proposed that maintaining the status quo would retain the current information asymmetry between market participants.[46]

3.2 Stakeholder views on consultation paper

The majority of stakeholders supported ERM Power's proposed rule change. They considered that publishing scheduled generating unit availability information would level the playing field, allow more efficient contracting between participants and allow more efficient planning of scheduled outages.

41 ERM rule change request Improving MT PASA transparency and accuracy, 31 March 2019, p.2.
42 ERM rule change request Improving MT PASA transparency and accuracy, 31 March 2019, p.2.
43 Ibid, p. 2.
44 Ibid, p. 2.
45 Ibid, p. 2.
46 Ibid, p. 2.

Several stakeholders opposed the change arguing it would reveal commercially sensitive information. The Australian Energy Regulator (AER) expressed concern that the rule change could reduce competition and encourage the coordinated exercise of market power.

The following sections detail the key issues raised by stakeholders:

- information asymmetry
- efficiencies
- impact on consumers
- commercially sensitive information
- coordinated exercise of market power
- cost to implement.

Information asymmetry

Alinta Energy, 1st Energy, EUAA and Bluescope considered that the rule change, if made, would reduce the information asymmetry or 'level the playing field',[47] as all stakeholders would have access to the same granularity of scheduled generating unit availability information. CS Energy supported the proposed change, provided it would apply to all scheduled generators. As a generator with a significant portfolio of assets, it welcomed the proposal if it would help avoid information asymmetry.[48]

Snowy Hydro, however, argued the change is not needed as the information can already be deduced by analysing the current, aggregated information.[49] While Snowy Hydro disagreed with the change, it did argue that if the change is made, then loads over 5MW should be required to be published so as not to advantage one technology over another. Snowy Hydro stated that failure to do so would increase the asymmetry of information, which is inconsistent with the objectives of the ERM Power's rule change proposal.[50]

Origin disputed the suggestion that the current approach results in larger generators having an information advantage relative to smaller players.[51] EnergyAustralia and the AEC disputed suggestions by ERM Power that generators share information outside of the market.[52]

Efficiencies

Both Alinta Energy and Energy Queensland considered that this change would improve resource efficiency as they spend large amounts of time trying to disaggregate the region-level generation data down to a DUID level with mixed success.[53]

47 Consultation paper submissions: Alinta Energy, pp. 1-2; 1st Energy, p. 1; EUAA, p. 2; Blusecope, p. 1.
48 CS Energy, Consultation paper submission, p. 2.
49 Snowy Hydro, Consultation paper submission, pp. 1-2.
50 Snowy Hydro, Consultation paper submission, pp. 1-2.
51 Origin, Consultation paper submission, pp. 1-2.
52 Consultation paper submissions: EnergyAustralia, pp. 1-2; AEC, pp. 1-2.
53 Consultation paper submissions: Alinta Energy, pp. 1-2; Energy Queensland, p. 1.

Alinta Energy also considered that this change would allow for more efficient contracting as participants would know the plants scheduled as unavailable.[54] Similarly, Macquarie considered that this efficiency may promote better reliability and lower costs going forward.[55]

The AER, however, stated it was not clear how the proposed change would lead to better decision-making, and noted that specific examples of how this change would allow generators to make more efficient operational decisions would help to assess its merits.[56]

Impact on consumers

MEU argued that publishing scheduled generating unit availability would provide greater transparency to the market and result in considerable benefit to consumers with little detriment (if any) to the generators.[57]

Bluescope noted that publishing scheduled generating unit availability would provide more information to the market and to customers, which would enable them to make better informed decisions on managing their electricity costs.[58]

Commercially sensitive information

Both EnergyAustralia and Origin opposed the change as it would reveal commercially sensitive information.[59] In addition, both EnergyAustralia and Origin stated it was unclear how the change would provide security and reliability benefits.[60]

AEMO did not oppose the change, but considered it is not without commercial risks due to the sensitivity of the data.[61]

The AEC accepted the change as it considered on balance the increased transparency is likely to be beneficial for the broader industry.[62] The AEC noted, however, some concern that the change may expose confidential commercial information, and the exact benefits which would flow from the proposed reform were unclear.[63]

Delta Electricity, EUAA, and MEU disagreed the change would reveal particularly sensitive commercial information,[64] with EUAA and MEU arguing that the claim it is 'commercially sensitive' is used as a tool to limit transparency in a market.[65]

Coordinated exercise of market power

54 Alinta, Consultation paper submission, pp. 1-2.
55 Macquarie, Consultation paper submission, p. 2.
56 AER, Consultation paper submission, pp. 1-2.
57 MEU, Consultation paper submission, p. 3.
58 Bluescope, Consultation paper submission, p. 1.
59 Consultation paper submissions: EnergyAustralia, pp. 1-2; Origin, p. 1.
60 Ibid, p. 1.
61 AEMO, Consultation paper submission, pp. 2-3.
62 AEC, Consultation paper submission, pp. 1-2.
63 Ibid, pp. 1-2.
64 Consultation paper submissions: Delta Electricity, p. 1; EUAA, p. 2; MEU, p. 3.
65 Consultation paper submissions: EUAA, p. 2; MEU, p. 3.

The AER opposed the change as it considered the potential for less competitive outcomes may outweigh the possible benefits of greater transparency.[66] The AER noted that the NEM already has a high degree of transparency with a significant amount of information published on the market and that further increasing transparency, through this change, may reduce competition and increase the risk of the coordinated exercise of market power.

Cost to implement

Delta Electricity, EUAA, and MEU noted as the information is already submitted to AEMO, there would be very little cost to implement the change.[67] AEMO noted they are technically able to publish this information with low additional cost.[68]

Stanwell noted the market may benefit from the change, although the potential costs and time involved to implement all of the suggested changes must be weighed against the likely value derived from expending these resources, particularly within the current context and volume of regulatory reform.[69]

3.3 Analysis from draft determination

Is there an asymmetry of scheduled generation availability information?

ERM Power identified information asymmetry of generator full and partial outage plans as the primary issue that would be solved by publishing scheduled generating unit availability.[70]

The Commission considered there is an information asymmetry regarding future generation availability in the NEM. This information asymmetry exists in the market as generators know their own outage schedules. The Commission recognised generators can analyse currently available information, including comparisons of MT PASAs and AEMO's Network Outage Schedule (NOS), to better understand the likely outage schedules of other generating units. The accuracy of their findings depends both on the resources a generator has available and the size of the 'unknown' generation availability that is to be disaggregated. The Commission considered participants with more resources to dedicate to this analysis, or with smaller 'unknowns' to analyse, have greater transparency of generation availability at the scheduled generator unit level. This asymmetry of information would remain even in the absence of indirectly sharing unit outage information.

Are there benefits to removing information asymmetry in scheduled generation availability?

The Commission considered there are benefits in removing the current information asymmetry in generation availability by publishing scheduled generating unit availability. The change is likely to lead to all market participants having a higher 'fidelity' picture of the supply side of the market, allowing for more efficient outcomes both in the wholesale and

66 AER, Consultation paper submission, pp. 1-2.
67 Consultation paper submissions: Delta Eelctricity, p. 1; EUAA, p. 2; MEU, p. 3.
68 AEMO, Consultation paper submission, pp. 2-3.
69 Stanwell, Consultation paper submission, p. 2.
70 ERM rule change request Improving MT PASA transparency and accuracy, 31 March 2019, p.2.

contracts market. In the context of a market with a tight supply-demand balance, increased market efficiency is particularly critical for providing electricity to consumers at least cost.

The key likely benefits included: more efficient planning of scheduled outages; more accurate analysis of opportunities to get generation to market notwithstanding transmission outages and constraints; more efficient decisions regarding fuel acquisition; a better understanding of a plant's reliability; more efficient pricing; greater contract market liquidity; and more efficient hedging decisions.

More efficient resource use

The Commission considered publishing scheduled generating unit availability would reduce any disparities in the information acquisition costs incurred by larger and smaller market participants. Currently, this asymmetry of generation information results in smaller participants incurring additional costs to acquire this information, or having to compete in the market at a disadvantage without this information.

The Commission considered the inability to accurately forecast impacts on market outcomes resulting from generator outages may result in higher risk premiums in wholesale and retail contract prices. The Commission noted the need to make potentially significant changes to fuel requirements for replacement generation at short notice (rather than in advance) may put upward pressure on prices in fuel (gas) markets.

More efficient planning of scheduled outages

The Commission considered that knowledge of the outage plans of other scheduled generating units would allow generators to make more informed and efficient outage planning decisions for their own plants. For example, a generator may schedule an outage if it knew the available capacity would be provided by more reliable units. Conversely, a generator may not schedule an outage if capacity is forecast to be provided by less reliable units. This may be particularly relevant when the expected 'headroom' between generation availability and forecast demand is minimal.

Pricing and market liquidity

The Commission considered that knowledge of the outage plans of other scheduled generating units may allow market participants to make contracting decisions that better reflect their expectations regarding future output and pricing outcomes. This may result in more confidence in the trading market, greater market liquidity and more efficient pricing. For example, generating units vary in, among other things, short-run marginal cost and their physical location from network constraints. A unit sitting on the uncongested side of a network constraint has a bigger impact on market outcomes than a unit sitting on the congested side.[71] If the unit not running is on the uncongested side of the constraint, this could lead to the level of congestion through that network section being higher, particularly if this unit is a 'positive gatekeeper' generator.[72] This may result in a higher price at the regional

71 If the congested side is also the entry point for an interconnector this has implications for interconnector flows and inter-regional settlement residue auctions (SRA) values.

72 A 'positive gatekeeper' generator is a generator that by increasing output would increase network transfer capacity.

reference node. The Commission considered knowing which units are scheduled to be available is key in helping participants:

- understand the potential impact of outages on market prices and unit dispatch
- access efficient hedge cover or purchase gas supplies.

Are there costs to removing information asymmetry in scheduled generation availability?

Commercially relevant information

The Commission accepted that scheduled generating unit availability information may be commercially relevant, but does not consider it sensitive. The Commission considered publishing this information is only an incremental change in the level of information currently available to market participants.

The Commission considered that this information is currently available and discernable in the market by some market participants through 'back calculation'. The Commission considered that the benefits of creating a 'level playing field' based on accurate, transparent information, out-weigh commercial concerns associated with the incremental change to information availablity.

Coordinated market power

The Commission concluded that the publication of scheduled generating unit availability information is not likely to increase the risk of the exercise of coordinated market power.

The Commission engaged Houston Kemp to assess the likelihood that publishing scheduled generating unit availability information would increase the risk of the exercise of coordinated market power or collusion. Houston Kemp[73] found that publishing of unit-level generation availability is unlikely to increase the risk of collusion.

Specifically, Houston Kemp assessed the likely impact of the publication of DUID information on the three conditions that are required in order for collusion to occur. These three conditions are that:

1. Firms wanting to collude can reach a collusive agreement;
2. Firms that are part of the agreement are individually better off adhering to it, rather than deviating from it – this requires at least that:
    a. firms can monitor whether their rivals are adhering to an agreement; and
    b. those firms that do not adhere to the agreement face an expected cost, eg, lower prices for a period, that is greater than the benefit from deviating from the agreement; and
3. Firms from outside the collusive agreement are not able to undermine it by supplying in competition with firms that are part of the collusive agreement.

1. Reaching an agreement

73 Houston Kemp, Potential benefits and risk of collusion from information provision. Available at https://www.aemc.gov.au/rule-changes/improving-transparency-and-extending-duration-mt-pasa

Houston Kemp considered a collusive agreement is not more likely to be reached with the publication of scheduled generating unit availability information, as this information is already available to participants to varying degrees.

2. Internal stability - adhering to the agreement

Houston Kemp considered adhering to a collusive agreement is not more likely to occur with the publication of scheduled generating unit availability information because detailed data on how much electricity each generator produced is available after dispatch. This allows for monitoring any tacit agreement involving the withdrawal of capacity, without new information.

3. External stability - external firms undermining the agreement

Houston Kemp considered publication of scheduled generating unit availability information is likely to make a collusive agreement less externally stable and so harder for its purpose to be achieved because it would be easier for firms that are not part of an agreement to increase their availability at exactly the time when the colluding firms were withdrawing their capacities. However, this may not hold if a very large proportion of the capacity was part of any collusive agreement.

Cost to implement

AEMO noted it would incur a low additional cost to publish scheduled generating unit availability at the DUID level.

Draft decision

The Commission's draft decision required AEMO to publish scheduled generating unit availability information at the DUID level. The Commission considered AEMO would need six months to implement this change, so the change would be effective from 20 August 2020 (six months after publication of the final determination and final rule).

The Commission considered that publishing individual scheduled generating unit availability information would improve the transparency and the accuracy of information regarding the supply side of the NEM. This would enable market participants to become better informed and make more efficient operational decisions. The Commission considered this change would:

- Improve transparency and quality of information that will better inform the market. A better informed market is likely to be able to function more effectively and efficiently in terms of resource allocation, and scheduling planned maintenance.
- Promote reliability of the power system. A better informed market will respond more effectively to forecast shortfalls in supply which will reduce the likelihood of unserved energy occurring.
- Minimise direct and indirect costs. A better informed market is more likely to make efficient decisions that reduce costs for participants operating in the market, which may reduce costs passed on to consumers.

The Commission considered the potential for the provision of scheduled generating unit availability at the individual unit level in the MT PASA output to increase the opportunities for the exercise of coordinated market power. The Commission noted that potential anti-competitive behaviours have been a concern associated with releasing NEM market information since the inception of the NEM.[74] However, the Commission considered that the draft rule was unlikely to increase the coordination of market power risks in the NEM.

In addition, the Commission considered publishing scheduled generating unit availability would not stop resourceful participants from deducing this information themselves and possibly using it for anti-competitive purposes. It is more likely that unit-level generation availability may assist the market in countering collusive behaviour (if it were to occur).

3.4 Stakeholder views on draft determination

The majority of stakeholders supported the Commission's decision in the draft determination. Stakeholders reiterated the benefits of publishing scheduled generating unit availability information and agreed with AEMC's assessment of the concerns raised by some stakeholders of increased risk of coordinated market power and release of commercially sensitive information.

Several stakeholders opposed the publication of scheduled generating unit availability, arguing it would provided little benefit, was releasing commercially sensitive information, and would increase the onerousness of compliance for little benefit.

Coordinated exercise of market power

Mondo noted the analysis carried out by the AEMC and accepted the conclusion reached by the Commission that the publication of scheduled generating unit availability was unlikely to increase the risk of collusion.[75]

No stakeholders raised additional concerns regarding increased risk of the exercise of coordinated market power.

Commercially sensitive information

AGL supported the change and noted that while some stakeholders are concerned about the commercial risks of publishing this information, its view is that, provided all scheduled generating units are subject to the same requirement, the playing field is levelled.[76] AGL also noted that from a practical perspective, equivalent information has been publicly available in New Zealand for several years without issue.[77]

74 ACCC, 10 December 1997, Determination – Application for Authorisation – National Electricity Code
75 Mondo, draft determination submission, pp. 1-2.
76 AGL, draft determination submission, p. 1.
77 Ibid, p. 2.

Snowy Hydro argued that the Commission needs to consider the commercial concerns associated with the publication of this information and the advantages it gives to participants who are not subject to the same MT PASA obligations, not just the visible cost to release this information publicly.[78]

Information asymmetry

The AEC and Snowy Hydro considered that while this change may reduce information asymmetry among participants, it should include batteries as small as 5 MW and also require the same obligations on the demand side, including wholesale demand response service providers.[79]

AEMO suggested that the Commission 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.[80] AEMO noted this would bring the requirements and information disclosure for scheduled and semi-scheduled generation into alignment.[81]

Onerous information requirement

Both Snowy Hydro and ENGIE argued there was little benefit for the market to gain from knowing unit level availability and the requirement would be onerous on businesses.[82]

ENGIE noted it is not uncommon that generators with multiple units of the same size to switch operating between them at any given time, allowing them to carry out maintenance on a rotating basis.[83] ENGIE noted this is an efficient way to maintain a consistent level of availability to the market.[84] ENGIE argued that if availability needed to be disclosed on a unit basis, then such generators would need to provide more frequent updates to AEMO in order for MT PASA to reflect the specific configuration of units that is available, and this would not provide any more meaningful information to the market.[85]

3.5 Final analysis and conclusion

Has new information been provided to reassess the draft decision?

The Commission considers that, on balance, the new information provided by stakeholders opposing the draft decision to publish scheduled generator availability at the individual unit level does not warrant a change in the draft decision.

Commercially sensitive information and information asymmetry

78 Snowy Hydro, draft determination submission, p. 2.
79 Draft determination submissions: AEC, p. 1; Snowy Hydro, p. 2.
80 AEMO, draft determination submission, p. 2.
81 Ibid, p. 2.
82 Draft determination submissions: ENGIE, pp. 1-2; Snowy Hydro, p. 2.
83 ENGIE, draft determination submission, pp. 1-2.
84 Ibid, pp. 1-2.
85 Ibid, pp. 1-2.

The Commission notes both Snowy Hydro and the AEC's view that while this would reduce information asymmetry between some participants, it would increase the level of information asymmetry between the supply (scheduled and semi-scheduled) and the demand sides of the market, and that generating unit availability should be published for batteries 5MW or more. The Commission considers:

- in respect to demand response service providers, the decision as to which participation category they will be classified as is being considered as part of the wholesale demand response mechanism project.[86]
- that demand side participation in the market, such as greater transparency of loads information, is a broader consideration outside the scope of this rule change. In November 2019, the AEMC released an information paper on how digitalisation is changing the NEM and, among other things, how both the demand and supply sides of the energy market could be actively engaged in electricity scheduling and dispatch processes.[87] COAG Energy Council has now tasked the ESB with developing the concept of a two-sided market and this work will consider the role of supply and demand in market, including in PASA processes.
- generation availability will be published for all scheduled generating units, including batteries of 5MW or more.

Coordinated exercise of market power

The Commission notes no new evidence was provided suggesting the change would increase the risk of the exercise of coordinated market power.

Onerous information requirement

The Commission understands, as per MT PASA requirements,[88] that generators currently submit availability of each scheduled generating unit to AEMO. The Commission considers that there would be minimal, if any, increase in effort required by generators to update generating unit availability when switching operation between units that are the same size (as generators are already obliged to provide unit level availability is currently required).

Conclusion

The Commission's final decision will remain as outlined in the draft determination, which is for AEMO to publish scheduled generating unit availability information at the DUID level.[89] The Commission considers AEMO will need six months to implement this change, so the change will be effective from 20 August 2020 (six months after publication of the final determination and rule).

86 https://www.aemc.gov.au/rule-changes/wholesale-demand-response-mechanism
87 https://www.aemc.gov.au/news-centre/media-releases/ebay-ing-australias-energy-market
88 NER, clause 3.7.2(d)(1) of the NER
89 NER, clause 3.7.2(f)(5)

4 MT PASA DURATION

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's proposal to extend the duration of the MT PASA from two to three years.

4.1 ERM Power's view

ERM Power argued that extending the duration of the MT PASA to three years would provide the following benefits:

- Complement the RRO by providing ongoing routine assessment and updating of any reliability gap. It would also provide an ongoing review of any expected USE and the timing of this expected USE during any identified gap period.
- Support the earlier commencement of retailer discussions with potential suppliers, which in turn may elicit faster development of demand response capability in the NEM.
- Allow generation facilities to better plan maintenance outages in the two to three year time frame.
- Better align available market information with a three-year generator closure notification.
- Remove the potential for forecast USE to arise due to the overlap of planned maintenance outages.
- Assist both gas-fired generation and coal-fired generation supplied by external fuel suppliers to more efficiently profile fuel requirements.

4.2 Stakeholder views on consultation paper

Stakeholders who supported extending the duration of the MT PASA noted it would improve liquidity and trading in the third year, and support the RRO. AEMO opposed the change arguing it would reduce the accuracy of the forecast, and duplicate the role of the ESOO.[90] Origin also opposed the change as it would reduce the accuracy of the forecast and its usefulness.[91]

The following sections present the key issues raised by stakeholders:

- liquidity and price discovery
- interaction with the RRO
- overlap with ESOO
- planned outages
- accuracy
- cost to implement
- volume of regulatory reform

90 AEMO, Submission to consultation paper, pp. 6-7.
91 Origin, Submission to consultation paper, p. 1.

- generator notice of closure
- future investment
- other benefits

Liquidity and price discovery

HV Broker, Delta Electricity, and ERM Power supported extending the MT PASA duration as they believe it would provide greater confidence to hedge which could in turn encourage greater market liquidity and price discovery in the third year out.[92]

Interaction with the RRO

A number of stakeholders supported extending the duration as it would better align the MT PASA with the RRO time frame.[93] 1stEnergy and MEU considered the change would provide the ability to assess the likelihood of a reliability gap period eventuating, and if any, it would assist them to manage their market positions following the declaration of a T-3 period.[94]

Overlap with the Electricity Statement Of Opportunities (ESOO)

Some stakeholders noted the overlap with ESOO would be complementary, and did not view it as an issue.[95] In the rule change request, ERM Power noted extending the MT PASA would also provide cost benefits to AEMO and the market as it would remove the need for more regular updating of the ESOO and the Energy Adequacy Assessment Projection (EAAP), as changes occur in expected market conditions as these changes would already be captured in the MT PASA process.[96]

AGL stated that itself and other stakeholders have previously highlighted the risks of linking the ESOO with the RRO, as the ESOO's longer-term outlook can forecast adverse long-term outcomes that are unlikely to eventuate in the PASA. AGL noted this is because the ESOO methodology only includes committed projects rather than reasonable forecasts of projects that are likely to be developed. AGL added that due to the different forecasting methodologies used by the ESOO and PASA, it is foreseeable that the RRO could be triggered due to a high unserved energy forecast in the ESOO, despite the MT PASA indicating no projected capacity shortfall. AGL concluded an extended MT PASA would provide a helpful reference point to ESOO forecasts.[97]

AEMO stated the purpose of MT PASA is to provide the market with information related to possible low reserve conditions and to assist market participants in making operational decisions, particularly related to generation and transmission outages.[98] AEMO argued the MT PASA is not the key publication that outlines investment opportunities, which is fulfilled by the ESOO.[99]

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92 Submissions to consultation paper: HV Broker, p. 1; Delta Electricity, pp. 2-3; ERM Power, pp. 1-2.

93 Submissions to consultation paper: BlueScope, p. 1; AEC, pp. 2-3; EnergyAustralia, p. 1; Snowy Hydro, p. 2; EUAA, pp. 1, 3; InterGen, p. 1; Alinta Energy, p. 2; 1stEnergy, p. 1; ERM Power, pp. 1-2; MEU, p. 4; AER, p. 2;

94 Submissions to consultation paper: 1stEnergy, p. 1; MEU, p. 4.

95 Submissions to consultation paper: 1stEnergy, p. 1; EUAA, pp. 1, 3.

96 ERM Power rule change request: Extension of MT PASA duration, 31 March 2019, p. 3.

97 AGL, submission to consultation paper, pp. 1-2.

98 AEMO, submission to consultation paper, pp. 6-7.

AEMO noted that any additional year in the MT PASA horizon would essentially be exactly the same in terms of inputs and methodology as is already conducted through the ESOO.[100] AEMO considered if ERM Power is of the belief that planned outages should be included over this horizon then implementing this through the ESOO process may be beneficial, acknowledging that any outages that are submitted would potentially increase the USE forecast in that publication.[101]

Planned outages

AEMO noted in the event that the market is unable to resolve the supply and demand balance, AEMO may procure RERT. AEMO argued a two-year MT PASA is hence a sufficient lead time for the market to resolve unit commitment/outage planning schedules.[102]

Accuracy

AEMO considered the quality of data on plant maintenance two years out is challenging. AEMO noted the number of generator outages submitted for the second year of the MT PASA time frame is already significantly lower than in the first year, and much more subject to change as time progresses. AEMO argued expanding the MT PASA time frame to a third year would likely result in a further reduction in the quality of inputs provided.[103] Origin also opposed extending the MT PASA outlook to three years as a longer outlook is likely to reduce the accuracy of the forecast.[104]

Cost to implement

Delta Electricity noted it expects very little change to its existing business processes to accommodate this change.[105] Similarly, the AEC expects that the additional initial and ongoing costs of doing so would be minimal.[106]

AEMO, however, noted increasing the requirement to three years, while offering limited value, and would impose a significant operational cost by increasing the simulation run time (approximately $150,000 per year), as well as causing difficulties in being able to complete an MT PASA simulation by the required time when significant updated information becomes available. These cost estimates exclude systems, development, and testing costs.[107]

Volume of regulatory reform

AGL broadly supported the concept, and Stanwell noted the market may benefit from a longer MT PASA forecast. Both noted that making such a change needs to be considered in the current context, complexity and volume of market reform.[108]

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99 AEMO, submission to consultation paper, pp. 6-7.
100 AEMO, submission to consultation paper, pp. 6-7
101 AEMO, submission to consultation paper, pp. 6-7.
102 AEMO, submission to consultation paper, pp. 6-7.
103 AEMO, submission to consultation paper, pp. 6-7.
104 Origin, submission to consultation paper, pp. 1-2.
105 Delta Electricity, submission to consultation paper, pp. 2-3.
106 AEC, submission to consultation paper, pp. 2-3.
107 AEMO, submission to consultation paper, pp. 6-7.
108 Submissions to consultation paper: Stanwell, p. 1; AGL, pp. 1-2.

Generator notice of closure

Macquarie considered the change would provide a better understanding of closure profiles of retiring generation units.[109] Some stakeholders considered if the duration should be further extended to three and a half to better align with the recently extended notice of closure.[110] [111]

Future investment

Some stakeholders noted a longer MT PASA would provide benefits for future investment, including:

- Better enable decisions to be made to invest in additional reliable generation, highlighting the importance of greater data access and transparency.[112]
- Promote investment in additional demand management or supply options than would otherwise be the case were the MT PASA to remain at its current two year duration.[113]

Other benefits

Stakeholders raised a number of other benefits, including:

- Greater transparency of AEMO's forecasts and information provided by participants.[114]
- Allow market participants to compete for retail customers in the third year.[115]
- Better capture the impacts of intermittent generation on supply adequacy.[116]

4.3 Analysis from draft determination

Issue being addressed

ERM Power argued that with new generation most commonly being intermittent in nature, and the margins of reserve capacity narrowing, there is a need for the weekly supply-demand balance in MT PASA to be assessed over a longer duration.[117] This would provide improved and earlier signals, than is currently the case, of the need for new supply capability or demand management over the medium-term time horizon.

What are the benefits of extending the MT PASA duration?

The Commission considered there are benefits to extending the MT PASA duration to three years. The Commission considered improving the ability for participants to act more prudently and efficiently when interacting with or entering the market would result in lower costs to the market and consumers.

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109 Macquarie, submission to consultation paper, p. 2.
110 Submissions to consultation paper: EnergyAustralia, p. 1; AEC, pp. 2-3; AER, p. 2; AGL, pp. 1-2.
111 NER, 2.10.1(c2)
112 Submissions to consultation paper: MEU, p. 4; Macquarie, p. 2.
113 ERM Power, submission to consultation paper, pp. 1-2.
114 Submissions to consultation paper: BlueScope, p. 1; AEC, pp. 2-3; Alinta Energy, p. 2; .
115 1stEnergy, Submission to consultation paper, p. 1.
116 Snowy Hydro, Submission to consultation paper, p. 2.
117 ERM Power rule change request: Extension of MT PASA duration, 31 March 2019, p. 2.

Specifically, this change would provide market participants with generation availability and reliability assessment information, at a daily resolution, over a three-year outlook. This would allow participants to respond, including through:

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

Planned outages

The Commission considered this change would provide transparency of generation capacity and when potential shortfalls in capacity might occur over a longer period, and would likely give generators greater confidence in planning their maintenance schedules.

Many generators will analyse currently available generation availability information to better understand the planned maintenance schedules of other generating units, as identified in chapter 3. Knowing this information is important when considering planned outages for a generator's own unit. This change would oblige generators to consider maintenance schedules beyond two years, while this is likely already occurring, this information would be published to the market. This would provide greater visibility of market conditions in the third year and likely result in generators better responding to market conditions, for example, adjusting planned maintenance to resolve a shortfall in supply.

Market liquidity

The Commission considered visibility of generation availability over a longer period may improve market liquidity and increase the length of contracting periods.

Contracting for supply in the third year is much lower than in the two years prior, which is largely due to there being less information available. The Commission understood, as highlighted by some stakeholders, this change would provide greater transparency of market conditions in the third year. The Commission considered this would likely improve confidence for the market, which may facilitate more hedging and may improve contract market liquidity beyond two years. The Commission noted this would be particularly relevant if a T-3 event is triggered through the RRO.

Investment in new supply

The Commission considered greater transparency and confidence in market conditions three years out may reduce uncertainty for new entrant generator or demand responders.

The Commission noted that generators require significant capital investment upfront and therefore require certainty in the ability to earn a reasonable return on their investment. The Commission considered a market more confident in future generation availability and wholesale market liquidity is more likely to provide greater certainty in returns on investment, including longer contracting periods, for new entrant generators.

Interaction with the ESOO

The Commission has considered whether the benefits of extending the MT PASA for an additional year are already provided for by the ESOO, which spans a ten-year time horizon. Table 4.1 compares key elements of the MT PASA and the ESOO.

Table 4.1: **Elements of MT PASA and ESOO**

ELEMENTS	MT PASA	ESOO
Projected outlook	Two years (proposed to be three years)	10 years
Availability resolution	Daily	Yearly
Frequency of update	Weekly	Yearly
Generation availability	PASA availability (provided by participants)	Availability assessed by AEMO
USE resolution	Monthly	Yearly
Planned outages	Included	Not included

The Commission noted that the 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.

What are the costs/negative impacts of extending the MT PASA duration?

Confusion regarding the respective roles of the MT PASA and the ESOO

AEMO argued that extending the MT PASA duration may confuse market participants as to the role of MT PASA and that of the ESOO. The Commission considered that market participants are generally aware of the respective roles played by the MT PASA and ESOO. In particular, the Commission noted that some stakeholders acknowledged the role the ESOO's reliability forecasts play in triggering the RRO, and that an extended MT PASA would complement the ESOO by improving the market's ability to respond to these capacity shortfalls.

Accuracy

The Commission considered the MT PASA is a projection aimed at reflecting the market into the future based on information available 'today'. It is based in part on generators' future plans for the availability of their generation fleet. As such, by its very nature the MT PASA's inputs are intended to change over time.

In any dynamic business environment, market participants intentions change for many reasons, both internal and external to business. In the case of generation plant availability, for instance, the timing, extent and duration of maintenance schedules could alter for budgetary reasons (internal) or due to other plant closures (external).

In other words, changes over time in generators' scheduled maintenance plans in the MT PASA do not necessarily reflect 'inaccuracies' in the forecasts, but may reflect the normal business decisions of a dynamic market environment facilitated by the operation of PASA.

The Commission considered that while an extended forecast is subject to change, the provision of this information, which would otherwise not be available, is useful and would provide market participants with greater transparency of future market conditions in the 'year three' time horizon and an opportunity to make better informed decisions when interacting with the market.

Cost

The Commission noted that AEMO estimate this change would increase its operating costs by approximately $150,000 per year.

Three years versus a three and a half year extension

The Commission did not consider extending the MT PASA to three and a half years, to align with the generator notice of closure, was necessary.

The generator notice of closure was extended to three and a half years to allow sufficient time for AEMO to assess a notice of closure's impact on the reliability assessment. The Commission noted the ESOO is the trigger for the RRO (a T-3 event), and considers a MT PASA of three and a half years is not necessary.

Draft decision

The Commission's draft decision was to extend the duration of the MT PASA from two to three years. The Commission considered AEMO would need 12 months to implement this change, so the change would be effective from 22 February 2021 (12 months after publication of the final determination and final rule).

The Commission considered extending the MT PASA to three years would:

- Improve the transparency and quality of information of the NEM over a longer period, enabling market participants to become better informed.
- Minimise costs by allowing participants to more efficiently allocate resources and reduce their overall costs, which may be passed onto consumers.
- Promote reliability of the power system. Market participants who have earlier information about forecast supply are more likely to make more efficient and effective maintenance and generation entry decisions that reduce the likelihood of shortfalls in electricity supply and best serve the NEM.

4.4 Stakeholder views on draft determination

The majority of stakeholders supported the draft determination to extend the duration of the MT PASA from two to three years. Stakeholders reiterated the benefits of the draft determination and agreed with AEMC's draft assessment to extend the MT PASA to three years.

AEMO opposed extending the MT PASA duration from two to three years, consistent with their response to the consultation paper, arguing that the change would not deliver the benefits outlined in the draft determination.[118] AEMO also put forward an implementation cost of the change, of approximately $800,000 which was not provided in AEMO's first round submission. This would be in addition to the annual operating cost of approximately $150,000.

AEMO proposed an alternative solution of only publishing generation availability for three years, noting this would provide the benefit stakeholders want for a fraction of the cost to implement a full three-year MT PASA with the reliability assessment for all three years.[119]

Overlap with the Electricity Statement of Opportunities (ESOO) and procurement of Reliability Emergency Reserve Trader (RERT)

AEMO reiterated that the ESOO is the primary mechanism for informing the market on the medium to long-term reliability outlook for the NEM.[120] AEMO also stated the ESOO 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.[121] [122] [123]

AEMO's view is that the ESOO is AEMO's most comprehensive view of reliability and will often take precedence over the MT PASA forecasts.

Cost

AEMO argued that undertaking the reliability assessment for MT PASA is a detailed, complex and relatively costly process. AEMO uses probabilistic modelling to determine the expected USE by NEM region.[124] AEMO noted this is done through time-sequential modelling at the interval level using Monte-Carlo simulations of security-constrained optimal dispatch, and it then compares the probability-weighted USE assessment against the reliability standard and identifies where the standard is exceeded.[125]

AEMO estimated the cost of extending the MT PASA to three years for upgrades would be approximately $800,000, in addition to an increase in operational cost of approximately $150,000 per annum.[126] Further to these costs, AEMO argued the upgrades would require it to allocate internal staff away from other activities regarded as more critical to the achievement of the NEO.[127]

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118 AEMO, draft determination submission, pp. 3-5.

119 Ibid, pp. 3-5.

120 Ibid, pp. 3-5.

121 Ibid, pp. 3-5.

122 https://www.aemc.gov.au/sites/default/files/documents/erc0283_-_draft_determination_-_victorian_jurisdictional_derogation_-_rert_contracting.pdf

123 While the Victorian jurisdictional derogation on RERT contracting rule change request proposed the ESOO would be the primary publication used to determine requirements for RERT three years out, the draft determination identified a Low Reserve Condition would need to be identified for the first year of a multi year contract. The inputs for an LRC declaration are set out in the Reliability Standard Implementation Guidelines.

124 AEMO, draft determination submission, pp. 3-5.

125 Ibid, pp. 3-5.

126 Ibid, pp. 3-5.

127 Ibid, pp. 3-5.

AEMO noted this cost estimate relates purely to the development of the MT PASA system and does not account for other costs which would be incurred to address the issue of including network augmentations over the third year, as outlined below under 'Modelling horizon'.[128]

Quality of data

AEMO considered the primary inputs that regularly change in the MT PASA process are the generator availability submissions from market participants and the inclusion of planned transmission outages.[129] AEMO argued that these inputs would be of poor quality in the third year, and 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.[130] AEMO considered:

- 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.[131]
- the frequency with which generator outages are submitted reduces beyond the first year, and considers this would further reduce for any subsequent period.[132]
- generator outages are very frequently shifted as they get closer, particularly in response to changes in the timing of planned transmission outages.[133]

The AEC supported a three-year MT PASA, but noted that the existing second year's accuracy is less than that of the first year, and acknowledged that calculations in the third year will necessarily have reduced accuracy.[134] Similarly, AGL noted the quality of information a generator can provide may decline over a longer time horizon.[135]

Modelling horizon

AEMO noted if MT PASA were extended to three years, this would require it to incorporate the impact of network augmentations on constraint equations within operational systems.[136] AEMO argued this would have a significant capital and operating expenditure impact, and require additional resourcing, which were not accounted for in the estimated implementation and operational costs AEMO provided.[137]

AEMO considered that there could be relatively limited time between the approval of network investment and the end of the MT PASA horizon.[138] Given this, AEMO argued there is 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.[139] AEMO considered this could

128 Ibid, pp. 3-5.
129 Ibid, pp. 3-5.
130 Ibid, pp. 3-5.
131 Ibid, pp. 3-5.
132 Ibid, pp. 3-5.
133 Ibid, pp. 3-5.
134 AEC, draft determination submission, pp. 1-2.
135 AGL, draft determination submission, p. 2.
136 AEMO, draft determination submission, pp. 3-5.
137 Ibid, pp. 3-5.
138 Ibid, pp. 3-5.

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).[140]

Retailer Reliability Obligation

A number of stakeholders reiterated that a three-year MT PASA would provide benefit in responding to T-3 events triggered through the Retailer Reliability Obligation (RRO).[141]

The EUAA noted that more detailed and frequently updated information is currently not available with the ESOO, and argued extending the MT PASA to three years would enable:[142]

- retailers to better manage their exposure to an RRO obligation when triggered, which lowers their risk and reduces costs that are passed on to consumers
- providers of demand response to better plan their potential offering to the market.

The MEU and ERM Power argued that extending the MT PASA is an essential element to help stakeholders become fully aware of the steps they may need to take, risks and obligations they are exposed to, if a T-3 reliability event is triggered under the RRO.[143] The MEU considered that the weekly update of MT PASA following a declaration of a T-3 event would provide participants sufficient time to identify how best to manage their exposure to any shortfall.[144] The MEU noted that while the ESOO provides a broad-brush view of the reliability gap, a regularly updated MT PASA would provide for a more granular analysis on a continuing basis, allowing retailers to regularly update their forecasts of need for additional reliable supply.[145]

Implementation

ERM Power requested the Commission consider if the proposed date for extending the MT PASA to three years could be brought forward to earlier than the proposed implementation date of 22 February 2021 on the basis that the change is only an extension of an existing process.[146]

Alternative solution

AEMO proposed that the benefits of extending the reliability outlook component of MT PASA could be delivered by publishing generation availability over the three-year period.[147] These benefits include;

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

139 Ibid, pp. 3-5.
140 Ibid, pp. 3-5.
141 Submissions to draft determination: Ergon Energy, p. 1; EnergyAustralia, pp. 1-2; AGL, p. 2; MEU, p. 2; ERM Power, pp. 1-2; EUAA, p, 1; Mondo, p. 2.
142 EUAA, draft determination submission, p, 1.
143 MEU, draft determination submission, p. 2.
144 Ibid, p. 2.
145 Ibid, p. 2.
146 ERM Power, draft determination submission, p. 1.
147 AEMO, draft determination submission, pp. 3-5.

- investment in new supply.

Both the AEC and AGL considered this alternative solution would be beneficial in lieu of extending the reliability outlook component of the MT PASA.[148]

The AEC argued, at a minimum, generation availability showing likely planned shut-downs and other maintenance would improve the market's ability to foreshadow supply-demand imbalances and price them accordingly.[149] The AEC considered this would be expected to improve market liquidity by encouraging financial market participants to offer longer-dated contracts.[150]

AGL noted it had no specific concerns with extending the MT PASA outlook, but that the quality of information a generator can provide may decline over a longer time horizon.[151] AGL considered that the MT PASA's live measure of unit availability could provide a helpful reference point to more 'static' ESOO forecasts.[152]

AEMO raised the alternative solution with the Commission once the draft determination was published. The Commission sought the views of stakeholders during the draft determination consultation period via over-the-phone meetings. Thirteen stakeholders responded to the Commission's request to discuss the alternative solution. Most of the stakeholders (nine of the 13) agreed with AEMO's proposed alternative solution, noting that most, if not all, of the benefit of a three-year MT PASA would be visibility of an additional (third) year of generation availability. Two of thirteen stakeholders still supported extending the full MT PASA to three years, while another two stakeholders had no view either way.

4.5 Final analysis and conclusion

The Commission considers the proposed alternative solution of publishing generation availability in the third year is likely to provide the benefit stakeholders are seeking from the draft decision to extend the MT PASA to three years, but for a much lower implementation cost.

Has new information been provided to reassess the draft decision?

The Commission notes that new and material information has been provided, which warrants a reassessment of the draft decision. In particular:

- an $800,000 implementation cost to extend the MT PASA
- a more thorough understanding from stakeholders on what aspects of the MT PASA are more useful in providing benefits in the third year e.g. greater contracting market liquidity, in particular during a T-3 event triggered through the RRO
- a least cost alternative solution of only publishing generation availability in the third year that provides most of the benefit of extending the MT PASA to three years.

148 Submissions to the draft determination: AEC, pp. 1-2; AGL, p. 2.
149 AEC, draft determination submission, pp. 1-2.
150 Ibid, pp. 1-2.
151 AGL, draft determination submission, p. 2.
152 Ibid, p. 2.

Implementation cost and network augmentation

The Commission notes the implementation cost of $800,000 was not provided at the time of the draft decision and that AEMO have noted further costs (not provided) would be incurred to include network augmentations in a three-year modelling horizon. The Commission accepts these are material considerations, and should be weighed against:

- the benefits provided from extending the MT PASA
- the cost to implement and benefits of only publishing generation availability in the third year (AEMO's alternative solution[153]).

Benefits of the alternative solution

The Commission notes most stakeholders consider the majority the benefit from a three-year MT PASA would come from knowing the generation availability, as this would allow more efficient scheduling of planned outages given the knowledge of other generators planned outages, and is one of the more important inputs into contract trading decisions.

T-3 events in South Australia

In light of these recently triggered T-3 events in South Australia, the Commission sought feedback from market retailers who would be obliged to have generation contracts in place to cover their share of a one in two year peak demand forecast in South Australia. The Commission notes these stakeholders considered generation availability in the third year would be the most beneficial part of a three-year MT PASA for contracting during the projected T-3 events in South Australia.

Backgroud

On 9 January 2020 the RRO was triggered in South Australia by the Minister for Energy and Mining projecting two potential T-3 events for the period January to March in 2022 and 2023.[154]

A T-3 event is typically a projected reliability gap three years out (the reliability gap is triggered at least 39 months out and a T-3 instrument is issued 36 months out) identified through the ESOO. In South Australia, however, a T-3 event can be triggered by the Minister as little as 15 months out (until 1 July 2022, after which the trigger will become 39 months) and the Minister does not need there to be a reliability shortfall projected in the ESOO or any other reliability forecast.

From 7 February 2020 large generation businesses in South Australia, namely Origin, AGL and Engie, were required to start offering contracts for the prescribed period on the ASX. This is a requirement under the Market Liquidity Obligation (MLO).[155]

153 AEMO, draft determination submission, pp. 3-5.

154 https://www.aer.gov.au/retail-markets/retailer-reliability-obligation

155 The MLO requires specified large generators in the relevant region to make available on a trading exchange (initially the ASX Energy platform) small-volume contracts covering the period of the T-3 event, enabling smaller buyers affected by the RRO to source suitable contract cover if required. The MLO applies to these generators until they have sold a specified volume of contracts or until Contract Position Day at T-1.

At T-1 (one year out from the potential reliability event), liable retailers (and any large end use customers who "opt-in" to manage their own RRO position) are required to report on the volume of qualifying contracts held as of this date against their market exposure for the one in two year peak demand forecast.

Conclusion

The Commission's final decision is to require AEMO to publish generation PASA availability, at the scheduled generating unit level, out to three years instead of two. This is a change from the Commission's draft decision, which was to extend the MT PASA duration from two to three years. The Commission considers AEMO and generators will need six months to implement this change, so the change will be effective from 20 August 2020.

This change will also require AEMO to update the spot market operation timetable (timetable) to reflect the extended three-year period for generation PASA availability. The final rule includes a transitional arrangement that requires AEMO to publish an updated timetable, which takes into account the final rule, by 20 August 2020.

5 TRANSPARENCY OF GENERATOR FORCED OUTAGE VALUES

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's proposal to publish maximum and minimum aggregated scheduled generating availability, adjusted for forced outage assumptions.

5.1 ERM Power's view

ERM Power stated that currently AEMO generate numerous simulations in the probabilistic MT PASA modelling process, each of which utilises assumptions about forced (i.e. unplanned) outages across the generation fleet. While ERM Power considered the outcomes are based on an average of the simulations, it was concerned that the degree of variability in available generation capacity across simulations, resulting from the forced outage assumptions, is not transparent.

ERM Power argued that publishing data on the variance in generation availability by region would provide benefit to the market through increased transparency. In particular, it would help market participants understand the impact on AEMO's forecasts on USE and allow better scheduling of planned outages.

Specifically, ERM Power proposed that AEMO be required to provide the:

- adjusted maximum aggregate scheduled generation availability
- adjusted minimum aggregate scheduled generation availability.

5.2 Stakeholder views on consultation paper

Stakeholders who supported this change said it would provide greater transparency of modelled generation availability outcomes. This would better inform participants and could lead to more efficient scheduling of planned outages in the market.

Stakeholders supportive of the change argued that it would:

- Be appropriate as the variance in aggregate generation levels is a key element of a probabilistic model.[156]
- Provide further transparency for participants that need a better understanding of the available generation capacity levels being assumed in the MT PASA modelling process,[157] and facilitate more efficient planning decisions.[158]

A number of stakeholders more generally supported the change.[159] EnergyAustralia supported the change provided that scheduled generator availability is published in aggregate to anonymise all generators.[160]

156 Submissions to consultation paper: Delta, p. 2; MEU, p. 4.
157 Submissions to consultation paper: Delta, p. 2; Origin, p. 2; EUAA, p. 2.
158 Delta, submission to consultation paper, p. 2.
159 Submissions to consultation paper: Intergen, p. 1; AER, p. 1; Snowy Hydro, p. 1.
160 EnergyAustralia, submission to consultation paper, p. 3.

AEMO supported publishing generation availability data that reflects forced outages and noted it is an enhancement that AEMO is intending to implement over the coming year.[161] However, AEMO considered that:

- The minimum and maximum aggregated scheduled generating availability requested by ERM, would not be informative.
- There is little value in implementing the proposed solution through the NER as the measures that best inform participants change over time and AEMO already plans to provide the information.[162]

Both AEC and Stanwell opposed the change. Stanwell noted that it does not see the inherent value in publishing the minimum and maximum values of the modelled simulations as a scheduled availability "band".[163] Stanwell added that publishing this information may impose associated costs on AEMO or have potential implications for RERT procurement given that the calculation for the required volume utilises forced outage rates.[164]

AEC considered that such information could improve market participants' understanding of forecast USE.[165] However, the AEC was concerned that disclosure might negatively impact generators; asset valuations could be unfairly affected by current or future investors taking a pessimistic view of generator returns based upon aggregated numbers.[166]

5.3 Analysis from draft determination

What are the benefits of publishing the maximum and minimum aggregated scheduled generation, adjusted for modelled forced outages?

The MT PASA process does not currently give market participants visibility of the variability in available generation availability, adjusted for forced outage rates, across modelled simulations. The Commission considered doing so would improve transparency of the possible available generation levels being assumed in AEMO's MT PASA modelling process. It would allow stakeholders to better understand the range of potential reliability outcomes, including over time, and this could facilitate more efficient investment, planned generator maintenance, and market intervention decisions.

What are the negative impacts of publishing the maximum and minimum aggregated scheduled generation, adjusted for modelled forced outages?

Commercial implications

The Commission considered this change is unlikely to have negative commercial implications for generators. Publishing adjusted maximum and minimum aggregate generation availability by region is an incremental change in information transparency and, as it is a regional-level aggregate, it is unlikely to result in generation asset valuations being unfairly affected by

161 AEMO, submission to consultation paper, p. 4.
162 Ibid, p. 4.
163 Stanwell, submission to consultation paper, p. 2.
164 Ibid, p. 2.
165 AEC, submission to consultation paper, p. 2.
166 Ibid, p. 2.

investors taking a pessimistic view of generator returns. The Commission noted information currently available through the ESOO (forced outage rates by technology and region) and considers that published generation actuals would be more likely to be used for asset valuations.

RERT procurement

The Commission considered this change is unlikely to negatively influence or bias procurement of RERT. We noted the process for contracting RERT considers the MT PASA but the RERT guidelines do not prescribe exactly how it is to be considered. The Commission found it is more likely that increased transparency of generation availability outcomes will result in a more accurate and efficient RERT procurement, when required.

Costs

As this data is generated in the modelling process, its publication was unlikely to impose a significant cost on AEMO.

Draft decision

The Commission was of the view that publishing the maximum and minimum aggregated scheduled generation availability, adjusted for modelled forced outages, provided market participants with greater visibility of the range of possible supply and reliability outcomes. The Commission did not consider this change would negatively impact or bias RERT procurement. The Commission considered AEMO would need six months to implement this change, so the change would be effective from 20 August 2020 (six months after publication of the final determination and final rule).

The Commission considered this change was likely to:

- Improve the transparency and quality of information. This would allow more accurate communication of market conditions.
- Promote reliability of the power system by allowing for more efficient scheduling of planned maintenance, reducing the likelihood of capacity shortfalls.

5.4 Stakeholder views on draft determination

There were only two submissions that commented directly on the Commission's draft decision to publish maximum and minimum aggregated scheduled generation availability, adjusted for modelled forced outages, with neither opposing the intent.

Mondo supported the draft decision.[167] AEMO suggested a better solution would be to publish a 10% and 90% probability of exceedance (POE) range of generation availability.[168] AEMO considered the aggregated maximum and minimum values would not be 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.[169]

167 Mondo, submission to draft determination, p. 2.
168 AEMO, submission to draft determination, pp. 5-6.
169 Ibid, pp. 5-6.

AEMO also noted the change could take some time to develop, test and implement, and requested that the implementation date be extended from 20 August 2020 to 22 February 2021 (12 months from when the final rule is published).[170]

AEMC staff engaged over-the-phone with ERM Power, the rule change proponent, and note it does not support AEMO's proposed alternative solution.

5.5 Final analysis and conclusion

Has new information been provided to reassess the draft decision?

The Commission considers, on balance, to retain the position provided in the draft decision.

The Commission recognises AEMO's concern that the decision may identify outliers in generation availability adjusted for modelled forced outages. However, the Commission considers AEMO's suggestion of publishing a 10% and 90% probability of exceedance (POE) range of generation availability (adjusted for forced outage modelling outcomes) has not been consulted on and does not deliver the full range of possible available generation modelling outcomes, as requested in the rule change request. The Commission also notes the rule change proponent does not support AEMO's proposed alternative solution.

The Commission notes AEMO's request for an extended implementation time and considers given the final positions taken on other issues in this final determination and consultation with AEMO, AEMO will need no more than six months to implement this change. As such, the change will be effective from 20 August 2020 (six months after publication of this final determination and final rule).

Conclusion

The Commission's final decision will remain as outlined in the draft determination, which is for AEMO to publish maximum and minimum aggregated scheduled generation availability, adjusted for modelled forced outages. The Commission considers AEMO will need six months to implement this change, so the change will be effective from 20 August 2020 (six months after publication of this final determination and final rule).

170 Ibid, pp. 5-6.

6 INTENDING GENERATION

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's rule change proposal that AEMO be required to include a preliminary 'committed generation' category in the MT PASA.

6.1 ERM Power's view

ERM Power argued it is unclear whether intending generation is included in the MT PASA process. ERM Power noted currently AEMO uses 'committed generation'[171] information in its ESOO process, including when assessing the reliability standard. By contrast for the MT PASA the NER does not require AEMO to include 'committed generation', only PASA availability which applies to scheduled, semi-scheduled and unscheduled generators and scheduled loads.

ERM Power's proposed change would require AEMO to:

- Incorporate into the MT PASA intending generation. This would be achieved through a preliminary classification for 'committed generation'.
- For generation within this classification, use the generic PASA availability profile for a scheduled generating unit and the unconstrained intermittent generation forecast if classified as a semi-scheduled generating unit.
- Amend the NER to make it clear that AEMO is to include intending generation in the MT PASA process and that the new preliminary classification would be defined in the RSIG (in consultation with project proponents).

6.2 Stakeholder views on consultation paper

Most stakeholders supported ERM Power's proposed rule change. Stakeholders stated it would increase the visibility of future generation capacity, better align the MT PASA process with that of the ESOO, and could reduce the likelihood of long-notice RERT contracts. Origin was the only stakeholder opposed to the change, while AEMO supported the change in principle but did not consider a rule change is needed.

Stakeholders supportive of the proposed rule change, identified the following, related benefits:

- Recognition in MT PASA forecasts that certain generation technology types (for instance, batteries and large scale solar) have the potential to impact the market within the MT PASA process as they can be built and operational within a relatively short periods of time (1 - 2 years). [172]
- More robust and accurate MT PASA.[173]

171 The term "Committed project" is defined in the NER clause 11.10A.1
172 Submissions to consultation paper: Alinta, p. 2; AEC, p. 2.
173 QEUN, submission to consultation paper, p. 1.

- Help avoid AEMO-determined low reserve conditions and thus prevent potentially unnecessary long-notice RERT contracts being entered into.[174]
- Reduce the potential to underestimate the amount of future supply in the market and thereby reduce the risk of over-investment in new generation.[175]
- Better alignment between the ESOO and the MT PASA processes.[176]

Snowy Hydro supported the change and noted that the Commission is currently considering other, complementary rule change proposals (such as transparency of new projects[177] and wholesale demand response mechanisms).[178] [179]

Stanwell supported the change, but recognised there may be potential limitations on the usability of the proposed proxy PASA profiles.[180] Stanwell noted the risk of data "noise" in MT PASA could be reduced by imposing a minimum lead time for committed generators to publish PASA.[181]

While AEMO agreed that intending generation should be included in the MT PASA, it did not consider the approach needed to be reflected in the NER. AEMO noted that the MT PASA already includes inputs from intending generators (as described in the MT PASA process description) once they are classified as 'committed generation'.[182] AEMO also highlighted that it has recently expanded the scope of intending generation to include new entrant generation that has started construction or installation (and not yet met all of AEMO's commitment criteria). As this arose from consultation on the RRO, AEMO's approach to intending generation in the MT PASA and ESOO are now aligned. AEMO has committed to formalising the approach through the RSIG.[183] [184] It suggested that there is no need or benefit to making the change in the NER, as doing so would not change AEMO's MT PASA modelling approach in practice and thus not impact forecast reliability outcomes.[185]

Origin opposed the change, pointing to the difficultly in accurately forecasting project completion dates.[186] Origin noted that AEMO's generation information page provides market participants with the most up to date information pertaining to proposed projects.[187]

6.3 Analysis from draft determination

Recent changes to AEMO's forecasts

174 Submissions to consultation paper: Alinta, p. 2; EnergyAustralia, p. 3.
175 MEU, submission to consultation paper, p. 4.
176 Submissions to consultation paper: Delta, p. 2; MEU, p. 4.
177 https://www.aemc.gov.au/rule-changes/transparency-new-projects
178 Snowy Hydro, submission to consultation paper, p. 2.
179 https://www.aemc.gov.au/rule-changes/wholesale-demand-response-mechanism
180 Stanwell, submission to consultation paper, p. 2.
181 Ibid, p. 2.
182 AEMO, submission to consultation paper, pp. 2, 4.
183 AEMO, submission to consultation paper, p. 4.
184 AEMO's Reliability Forecasting Methodology Final Report set out AEMO's current approach to the accuracy of the start-dates of these projects and how AEMO would develop a methodology and consult on an RSIG update.
185 AEMO, submission to consultation paper, pp. 2, 4.
186 Origin, submission to consultation paper, p. 1.
187 Ibid, p. 1.

The Commission understood that AEMO has recently expanded the range of intending generation projects it includes in both the ESOO and MT PASA. Through its ESOO reliability forecasting methodology report, AEMO sought stakeholders' comments on how to include intending generation in the ESOO. As a result, AEMO has defined a preliminary classification of committed generation, termed 'Committed*'.[188] AEMO has stated that it intends to include Committed* projects in the ESOO's reliability assessment and the MT PASA process.[189] The Commission noted that the NER currently do not define how intending generation is to be considered in the MT PASA.

What are the benefits of defining in the NER how intending generation is included in the MT PASA process?

The Commission agreed with the view of many stakeholders that defining in the NER how intending generation is included in the MT PASA process would benefit the market. The change would provide greater transparency and confidence to market participants that the MT PASA is using accurate and reasonable generation forecast information, reflective of current generation technology lead times. The Commission noted this change:

- Would provide more accurate signals to potential new entry generation about future generation capacity.
- Would provide regulatory certainty by aligning the ESOO and MT PASA approaches.
- May reduce costs to consumers by more accurately forecasting supply and thereby preventing potentially unnecessary long-notice RERT contracts being entered into.

What are the negative impacts of defining in the NER how intending generation is included in the MT PASA process?

The Commission considered the change is unlikely to result in forecasts of overestimates in generation availability, as AEMO will only include intending generation projects that meet the criteria for Committed and Committed* projects, with Committed* projects not included in the first year of MT PASA forecasts. These projects have a high certainty of being delivered. The Commission supported Stanwell's suggestion of introducing a minimum lead time for committed generators to publish PASA, this will allow participants prior notice of commencing Committed and Committed* projects.

The Commission has considered AEMO's view that this approach to intending generation need not be established in the NER as AEMO intends to incorporate it into their guideline documents (RSIG and MT PASA process description). On balance, the Commission considered that prescription in the NER will give market participants more clarity regarding the MT PASA approach, and greater confidence in the quality of the outputs produce by the MT PASA process.

Draft decision

188 Projects that have started construction and have meet all of AEMO's commitment criteria other than either the planning or components criteria.

189 AEMO, submission to consultation paper, pp. 2, 4.

The Commission's more preferable draft rule was for the NER to prescribe that AEMO is to include the capabilities of proposed generation in the MT PASA, consistent with the ESOO information requirements set out in clause 3.13.3A(a)(2) of the NER. The Commission considered AEMO would be able to implement this change from 20 February 2020 (the date of publication of the final determination and final rule).

The Commission considered this change would:

- Improve the transparency and quality of information and market forecasts.
- Promote reliability of the power system by providing greater visibility, and confidence, in forecast generation capacity.
- Facilitate more efficient decision-making by (current and future) participants regarding when and where to build new generation.

6.4 Stakeholder views on draft determination

AEMO and Mondo supported the draft decision to include sub categories of intending generation (Committed and Committed* projects) in the MT PASA process, with no submissions to the draft determination opposing it.[190]

6.5 Final analysis and conclusion

Has new information been provided to reassess the draft decision?

The Commission notes no new information has been provided, which requires reconsidering the Commission's draft decision.

Conclusion

The Commission's final decision will remain as outlined in the draft determination, which is for the NER to prescribe that AEMO is to include the capabilities of proposed generation in the MT PASA, consistent with the ESOO information requirements set out in clause 3.13.3A(a)(2) of the NER. The Commission considers AEMO will be able to implement this change by 20 May 2020, three months from the date of publication of this final determination and final rule on 20 February 2020.

190 Submissions to draft determination: AEMO, p. 6; Mondo, p. 2.

7 PEAK DEMAND FORECAST

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's proposal to publish an additional daily peak demand forecast with a 90 per cent POE (90POE).

7.1 ERM Power's view

In its rule change request, ERM Power stated that:

- AEMO calculate and publish daily 10 per cent and 50 per cent POE (10POE and 50POE) of peak load demands within the MT PASA time frame.
- In a separate process, defined in the RSIG, these peak demand forecasts are then used to model potential for USE. The 10POE USE outcomes are given a probability of 30 per cent, and the 50POE USE outcomes are given a probability of 70 per cent.
- The modelled USE is a conservatively high assumption since 50POE outcomes tend to have positive USE outcomes in a number of scenarios. In contrast, the 90POE outcomes would be zero or close to zero in all scenarios. The grouping of 50POE and 90POE assumes they have similar USE outcomes and results in an inflated expected USE.

ERM Power argued that requiring AEMO to publish daily peak demand forecasts of 90POE in the MT PASA output would increase the transparency of the demand forecasts.

7.2 Stakeholder views on consultation paper

Many stakeholders supported this change. They considered that publishing an additional daily peak load demand of 90POE would provide greater transparency of peak demand outcomes. AEMO, on the other hand, did not support this change. It argued that as AEMO no longer uses the daily 90POE peak demand forecast in the MT PASA reliability assessment, publishing the 90POE serves no clear purpose and may in fact confuse participants.

Stakeholders that supported the proposed change suggested it would deliver the following benefits:

- Improve transparency in the MT PASA around how AEMO does its forecasting to improve market confidence in the policy implications flowing from the forecasting.[191]
- Provide a clearer view of the range of potential demand outcomes under the published MT PASA and thereby help stakeholders better understand the risks to reliability and allow more efficient planning.[192] MEU argued this would lead to an overall better outcome for consumers.[193]
- Reduce the effect in the published MT PASA of skewing the calculation of most probable peak load to a higher figure than would otherwise be the case.[194]

191 EUAA, submission to consultation paper, p. 2.
192 Submissions to consultation paper: Delta Electricity, p. 2; MEU, p. 3.
193 MEU, submission to consultation paper, p. 3.
194 AEC, submission to consultation paper, p. 2.

CS Energy and Stanwell supported the change (but did not think 90POE demand forecasts should be included in reliability assessments). Stanwell considered doing so may put a downward bias on USE which would have flow-on implications for processes such as network planning and the RRO.[195]

Both EUAA and Delta Electricity expected the costs to be minor.[196]

Both EnergyAustralia and Origin were unclear on the benefits this change would bring about, and noted that if the change is made, AEMC should be convinced it would add value.[197]

AEMO opposed the proposal. AEMO highlighted that there is a difference between the demand forecasts used in the MT PASA reliability assessment, and the daily peak demands currently published at both the 10POE and 50POE levels.[198] According to AEMO it no longer uses the daily peak load forecasts in the MT PASA process for calculating expected USE. The demand forecasts it uses in USE modelling is half hourly traces, not daily maximum demand as was the case in the previous MT PASA process.[199]

AEMO argued that, rather than augmenting the published daily demand data, the requirement on AEMO to publish daily demands over a two-year horizon should be removed as it is obsolete, adds no value and may cause confusion.[200] AEMO pointed to the publication of seasonal demand targets in its forecasting data portal and the publication of half-hourly demand traces (based on these targets) through the ESOO model.[201]

7.3 Analysis from draft determination

ERM Power stated publishing an additional daily peak demand forecast of 90POE would provide greater transparency of demand forecast outcomes.

Would this change provide benefits?

The Commission did not consider publishing an additional daily peak demand forecast of 90POE would improve transparency of peak demand forecast outcomes, or the accuracy of forecast USE. The Commission noted:

- There is a misunderstanding among some participants that currently published daily peak demands of 10POE and 50POE are used in the reliability assessment and, if a daily peak demand forecast of 90POE were published, it would at a minimum aid understanding (and/or be used in the calculation of USE).
- AEMO stated the current daily peak demand forecasts of 10POE and 50POE are no longer used in the reliability assessment, and neither would a 90POE if it were published.

195 Submissions to consultation paper: CS Energy, pp. 2-3; Stanwell, p. 2.
196 Submissions to consultation paper: Delta Electricity, p. 2; EUAA, p. 2.
197 Submissions to consultation paper: EnergyAustralia, p. 2; Origin, p. 2.
198 AEMO, submission to consultation paper, p. 5.
199 Ibid, p. 5.
200 Ibid, p. 5.
201 Ibid, p. 5.

- The daily peak demand forecasts of 10POE and most probable peak load (interpreted as 50POE) are only published because it is required by the NER.[202]
- AEMO stated the current approach is to use nine demand traces, based on historic data, for each of the yearly peak demand forecasts of 10POE and 50POE.[203] These demand traces are modelled for USE and then averaged for the purpose of the reliability assessment.

The Commission noted that the reliability assessment in the MT PASA (i.e. how expected USE is calculated), is not within scope of this rule change as it was not proposed in the rule change proposal. AEMO will continue to perform this function according to the process outlined in the RSIG. However, the Commission noted that AEMO intends[204] to adjust the reliability assessment USE probability weightings in the MT PASA to effectively include a 90POE demand profile, consistent with the approach it is adopting for the ESOO. The Commission noted that AEMO does not intend to explicitly create demand traces for 90POE, as the USE outcomes would likely be zero or negligible.

Draft decision

The Commission considered publishing a daily peak demand forecast of 90POE was not likely to improve the transparency of peak demand forecast, and so determined not to make the proposed change to the Rules under the more preferable draft rule.

7.4 Stakeholder views on draft determination

ERM Power submitted[205] an early submission to the draft determination proposing an alternative solution of publishing the maximum and minimum values of daily maximum demand forecast from both the adjusted 50% and 10% POE load traces used in the reliability assessment. In practical terms, this would produce four numbers for each day of the MT PASA:

- a minimum peak load forecast for the 50% POE demand profile
- a maximum peak load forecast for the 50% POE demand profile
- a minimum peak load forecast for the 10% POE demand profile
- a maximum peak load forecast for the 10% POE demand profile

All stakeholders who commented on the alternative solution, supported it noting it would reduce the burden of participants doing the calculations themselves.[206]

ERM Power noted the alternative solution was not intended to replace the existing requirement on AEMO to publish the daily peak load demands of 10POE and 50POE,[207] as

202 Clause 3.7.2(f)(1) of the NER.

203 AEMO's Electricity Demand Forecasting Methodology Information Paper explains further how the demand traces for the reliability assessment are calculated.

204 AEMO, submission to consultation paper, p. 5.

205 ERM Power, early submission to draft determination, p. 2.

206 Submisions to draft determination: Ergon Energy, p. 1; Mondo, p. 2; AEMO, pp. 6-7; MEU, p. 2; AEC, p. 2; EUAA, p. 2.

207 NER, clause 3.7.2(f)(1)

these peak demands will have a critical role in improving the accuracy of AEMO demand forecasting as part of the forecasting improvement framework.[208]

AEMO noted their support for the alternative solution was on the condition of the removal of the NER clause[209] requiring AMEO to publish the daily peak 50POE and 10POE load forecasts. AEMO argued that the values currently published for the daily peak load demands of 10POE and 50POE are not used in the MT PASA process, provide no value to AEMO, and impose an additional cost for AEMO to produce.[210]

AEMC staff engaged directly with some stakeholders via over-the-phone meetings on the removal of these peak demand forecasts. Stakeholders said they used the forecasts for a number of purposes including network augmentations and wanted them retained.[211] AEMC staff also noted that ERM Power considered removing the daily peak 10POE and 50POE demand forecasts as out of scope of the rule change request.

7.5 Final analysis and conclusion

Has new information been provided to reassess the draft decision?

The Commission notes ERM Power has provided an alternative solution that is supported by all stakeholders who commented on the issue. The Commission considers the alternative solution is a better outcome than the draft decision of no change, as it provides enhanced transparency and usability of data currently published to the market by AEMO.

The Commission notes AEMO's concern with continuing to publish the 10POE and 50POE daily peak load forecasts required under NER clause 3.7.2(f)(1). However, it considers these peak load forecasts are useful to market participants, and the removal of them are outside of the scope of the rule change request.

Conclusion

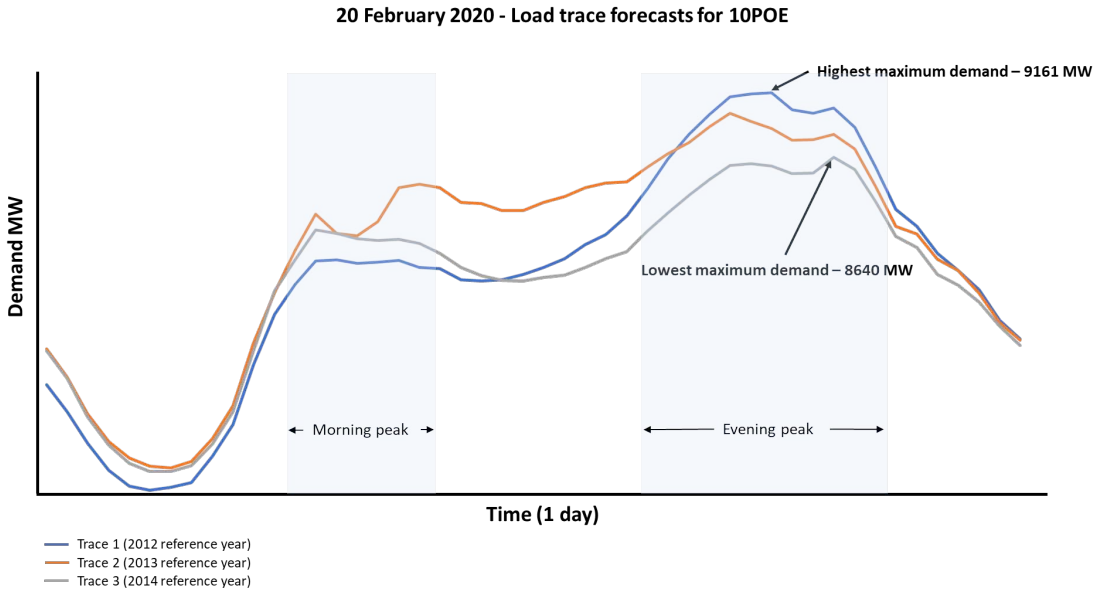
The Commission's final decision will change - from the draft determination of no rule - to requiring AEMO to publish the maximum and minimum values of the daily peak load forecasts from both the adjusted 50% and 10% POE load traces. The Commission considers AEMO will be able to implement this change by 20 August 2020, six months after the publication of this final determination and Rule on 20 February 2020. The example below explains what this means in practice.

In addition, the NER clause 3.7.2(c)(1) has been amended slightly for consistency with 3.7.2(f)(1A) so that it is clear that the implementation of 3.7.2(c)(1) results in multiple daily load forecasts for each of the 10% and 50% probability of exceedance seasonal maximum demand forecasts.

208 ERM Power, early submission to draft determination, p. 2.
209 NER, clause 3.7.2(f)(1)
210 AEMO, submission to draft determination, pp. 5-6.
211 AEMC staff meeting with: MEU, EUAA, Mondo

Example of Implementation

Figure 7.1: Maximum (highest) and minimum (lowest) values of daily maximum demand forecast from load traces



For each day of the two-year period covered by the MT PASA, AEMO forecasts a number of potential patterns of demand for that particular day. As shown in figure 7.1, these patterns may vary across the day. However, among them for that day there will be a highest maximum demand and a lowest maximum demand. In effect this gives you the range that AEMO forecasts for maximum demand on that day.

In practice, there are two sets of demand patterns for each day; one set of demand patterns for most likely demand (50POE) and another set of demand patterns for the less likely (10POE) demand. In practical terms, the obligation on AEMO would produce four numbers for each day of the MT PASA:

- for the 50% POE demand profile, the lowest maximum demand forecast
- for the 50% POE demand profile, the highest maximum demand forecast
- for the 10% POE demand profile, the lowest maximum demand forecast
- for the 10% POE demand profile, the highest maximum demand forecast

The simplified example shown in figure 7.1 presents only the 10POE demand patterns (called profiles) for 20 February 2020 for NSW. In this example under the final rule, AEMO would be required to publish the highest maximum demand of 9,161 MW and the lowest maximum demand of 8,640 MW.

In reality, AEMO forecast uses sets of nine demand patterns based on nine historic reference years.

8 TRANSPARENCY AND EASE OF USE OF DATA

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's proposal to align the formats of published demand forecasts and actual demand.

8.1 ERM Power's view

In its rule change proposal, ERM Power claimed that AEMO publishes forecast demand, and actual demand data, in different formats. ERM Power argued publishing the related data in different formats makes it difficult particularly for participants less familiar with AEMO's data publication processes to compare forecast to actual demand data.

ERM Power highlighted that AEMO currently provides forecast demand data in the MT PASA on an operational 'as sent out' basis. This then requires the addition of a separate estimated generator auxiliary load data to derive the value closest to the real time operational 'as generated' data.

ERM Power proposed in order to provide consistent and transparent information, that AEMO publish MT PASA demand forecasts in the same format as real time actual demand data.

8.2 Stakeholder views on consultation paper

The majority of stakeholders supported ERM Power's proposed rule change. They considered that aligning the formats of published forecast and actual demands would reduce confusion, and provide greater transparency and consistency in reporting.

Stakeholders supportive of the proposal considered the change would:

- Remove unnecessary confusion.[212]
- Improve data utility,[213] and help consumers understand the market.[214]
- Lower the chance of miscommunication and incorrect statements being made in the media.[215]
- Foster confidence in market planning and forecasting processes.[216]

AEMO held no strong objections to publishing forecast demand on an 'as generated' basis through the MT PASA system, but questioned its economic benefit and relevance to the MT PASA's objective, adding that:[217]

- The existing reporting table structures largely dictate the demand measures are published, consistent with the previous MT PASA process.

212 Submissions to consultation paper: Delta, p. 2; EUAA, p. 2; MEU, pp. 3-4; Origin, p. 2.
213 MEU, submission to consultation paper, pp. 3-4.
214 EUAA, submission to consultation paper, p. 2.
215 AEC, submission to consultation paper, p. 2.
216 Submissions to consultation paper: Delta, p. 2; EUAA, p. 2; MEU, pp. 3-4.
217 AEMO, submission to consultation paper, pp. 2-3.

- Any change in the demand measures published would need to weigh the implementation costs (to AEMO and market participants) against perceived benefits.
- AEMO does publish the auxiliary component through the forecasting data portal. Calculating as-generated peak demands from sent-out peak demands simply involves adding these two values.[218]

8.3 Analysis from draft determination

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.

The Commission considered the cost to implement this change would be minimal.

Draft decision

The Commission was of the view that AEMO aligning the formats of published forecast and actual demand would provide benefits to the market, and these would outweigh associated costs. The Commission considered AEMO would need three months to implement this change, so the change would be effective from 20 May 2020 (three months after publication of the final determination and final rule).

The Commission considered this change would:

- Improve the quality of information released by aligning forecast and actual demand formats published, making it easier for market participants to compare and analyse data.
- Improve regulatory certainty by providing greater confidence in market planning and forecasting processes providing.

8.4 Stakeholder views on draft determination

AEMO and Mondo supported the draft determination to align the formats of published forecast and actual demand, and no submissions opposed the draft decision.[219]

AEMO requested that the Commission clarify in the final determination the specific demand format AEMO will be required to publish the actual and forecast demand in.[220] AEMO noted it has interpreted this obligation as requiring the publication of forecast and actual demand on an 'as generated' basis through the MT PASA system.[221] AEMO noted this would 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.[222]

218 Ibid, pp. 2-3.
219 Submissions to draft determination: AEMO, p. 6; Mondo, p. 2.
220 AEMO, submission to draft determination, p. 6.
221 Ibid, p. 6.
222 Ibid, p. 6.

8.5 Final analysis and conclusion

Has new information been provided to reassess the draft decision?

The Commission notes no new information has been provided to consider changing the draft decision.

The Commission considers the intent of the rule change is to provide market participants with easily comparable forecast and actual demand data. That is, whichever format is used, it is consistent between the two demands. The Commission has not prescribed in the NER which demand format this should be, as this may change over time. Nonetheless, it is the Commission's understanding that currently the most appropriate demand format to be used is on an operational 'as generated' basis.

Conclusion

The Commission's final decision will remain as outlined in the draft determination, which is for the NER to prescribe that AEMO publish forecast and actual demands in the same format.[223] The Commission considers AEMO will be able to implement this change by 20 May 2020, three months after publication of this final determination and Rule on 20 February 2020.

223 NER, clause 3.7.2(g)

9 FREQUENCY OF DEMAND FORECAST UPDATE

This chapter discusses stakeholder feedback, and presents the Commission's analysis and conclusions, regarding ERM Power's proposal to require AEMO to update their demand forecast more frequently.

9.1 ERM Power's view

ERM Power noted that market participants are required to update their inputs into the MT PASA on a weekly basis. By contrast AEMO's demand forecasts, which are also inputs to the MT PASA, are typically only updated once a year.

ERM Power considered there is a case for AEMO updating their demand forecasts more frequently. For instance, the current MT PASA approach would over-estimate USE for the upcoming summer compared to the case where a more up-to-date demand forecast estimated lower demand (for instance, due to a cooler summer than previously forecast). ERM Power considered that this situation, arising from 'out-of date' demand inputs to the MT PASA, could potentially lead to the RERT being triggered unnecessarily.

ERM Power's rule change request proposed that AEMO update its peak demand forecasts in the MT PASA with respect to both:

- Frequency: AEMO should update its peak demand forecasts at least monthly.
- A metric: AEMO should have regard to the weather condition forecasts for the coming three-month period.

9.2 Stakeholder views on consultation paper

The majority of stakeholders supported ERM Power's proposed rule change. They considered that publishing more frequent updates to demand forecasts would improve the accuracy of the inputs, to and thereby outputs from, MT PASA and allow more effective management of system reliability. AEMO opposed the proposal on the basis that more frequent updating of the demand forecast is impractical and would provide no additional value.

Stakeholders in support of the proposal highlighted that the change would:

- Assist in making reliability forecasts as accurate as possible.[224]
- Reduce the temporal mismatch between supply of generator availability information (weekly) and forecast demand updates (yearly).[225]
- Allow AEMO to take advantage of more current data such as the Bureau of Meteorology's (BOM's) seasonal outlooks, which are issued monthly.[226]

224 Submissions to consultation paper: Delta Electricity, p. 2; 1stEnergy, p. 1; AEC, p. 2; Snowy Hydro, p. 2; Origin, p. 2.
225 Submissions to consultation paper: 1stEnergy, p. 1; AEC, p. 2.
226 AEC, submission to consultation paper, p. 2.

- Assist in more accurate forecasting of USE and RERT requirements.[227] In particular, Bluescope noted it would assist AEMO in summer preparedness and help more effectively manage system reliability costs.[228]
- MEU stated more frequent updates would more accurately reflect the quickly changing market.[229] MEU also noted the introduction of RRO and demand response into the market increases the importance of more frequent updates, as they allow the costs to consumers arising from these new tools to be minimised and their benefits to be maximised.[230]

Delta Electricity noted they expect additional ongoing costs of the change if made to be low.[231]

Energy Queensland supported the change, but considered there may be some challenges in accounting for inputs such as weather. Increasing the frequency of the demand forecast, Energy Queensland argued, may not improve the forecast accuracy if that frequency does not align with the 'forecastability' of the input variables (i.e. weather). [232]

Stanwell agreed that demand forecasts should be updated more regularly. But Stanwell questioned the proposed monthly frequency. Stanwell considered, given the importance of reliable forecasts for the RRO, the timing of demand forecasting changes for the MT PASA would need to be carefully considered.[233]

EnergyAustralia supported improvements to forecast accuracy where there are likely to be material benefits. For example, a large load announces closure. It suggested that AEMO be required to update demand forecasts if there is a 'material change' in demand for the MT PASA period.[234]

AEMO highlighted the following points on the forecasting process:

- Developing demand forecasts is a six-month process, requiring significant consultation.
- If required to update forecasting on a monthly basis, it would not have enough of the required information available that would warrant any update to the demand forecast.
- Demand forecasts are updated for weather in August, not May as stated by ERM Power.[235]

AEMO opposed updating demand forecasts monthly as AEMO already updates the forecasts when material changes occur, weather forecasts for the three-month time horizon are not usefully accurate, and AEMO should decide the frequency of demand forecast updates.[236]

227 Submissions to consultation paper: EUAA, p. 2; Bluescope, p. 1.
228 Bluescope, submission to consultation paper, p. 1.
229 MEU, submission to consultation paper, p. 3.
230 Ibid, p. 3.
231 Delta Electricity, submission to consultation paper, p. 2.
232 Energy Queensland, submission to consultation paper, p. 1.
233 Stanwell, submission to consultation paper, p. 1.
234 EnergyAustralia, submission to consultation paper, pp. 2-3.
235 AEMO, submission to consultation paper, pp. 5-6.
236 Ibid, pp. 5-6.

More specifically, AEMO stated it uses the most up-to-date information available when preparing the demand forecasts used in the ESOO.[237] Once the ESOO is published, AEMO noted it does not receive any readily usable new information that would impact the forecast of peak demand, except for potential changes in major large industrial loads. The NER requires AEMO to update this ESOO forecast if there are significant changes in input assumptions, such as major changes in industrial loads.[238]

AEMO noted while the use of weather data three months out would be valuable for the industry, this information is not yet technically realisable. AEMO argued seasonal weather forecasting is still in its infancy and not particular accurate at present. AEMO noted it is working closely with the BOM as part of their strategic partnership.[239]

Finally, AEMO stated that as it is responsible for the accuracy of the forecasts, it should determine whether revised input data warrants an updated demand forecast, rather than being bound to a regular cycle of forecast reviews.[240]

9.3 Analysis from draft determination

The Commission considered that demand forecasts should reflect the most current information available at the time of publication of the MT PASA, and only be updated when AEMO becomes aware of new information that would have a material impact on the forecast. The Commission also recognised the need for accurate inputs to the MT PASA in order to generate reliability forecasts that, by being as accurate as possible, minimise costs to consumers from RERT procurement.

What is AEMO's current approach to updating the demand forecast?

ERM Power noted the NER currently does not prescribe how often AEMO is required to update its demand forecasts for the MT PASA.

The Commission noted that AEMO produces a demand forecast at least once a year for the ESOO,[241] and this demand forecast is a required input to the reliability assessment for the MT PASA.[242] The Commission understood that:

- AEMO consults with stakeholders on its demand forecasting approach, assumption and inputs through AEMO's monthly Forecasting Reference Group and workshops.
- The demand forecasting model inputs represent the most up-to-date information available.
- In the 2019 ESOO, AEMO presented step change, central, and slow change demand forecasts.

Are there benefits to updating the demand forecast more frequently?

237 Ibid, pp. 5-6.
238 Ibid, pp. 5-6.
239 Ibid, pp. 5-6.
240 Ibid, pp. 5-6.
241 NER clause 3.13.3A(a).
242 RSIG, section 2.3.1.4

Temporal mismatch in updates to supply and demand information

The Commission did not consider a mismatch between the frequency of updates to generator availability information and forecast demand is necessarily an issue in relation to the accuracy of the MT PASA process. The Commission noted that generation availability information is easily accessible through a generator knowing its planned outage schedule, whereas a demand forecast update is a lengthy process with multiple inputs.

Accuracy

The Commission considered the existing NER requirements on updating the ESOO demand forecast for material changes[243] are adequate in maintaining a level of accuracy that is practical for AEMO to apply to the MT PASA.

The Commission noted that some stakeholders supported a more frequent update to the demand forecast as it would reflect changes in the market and provide more accurate reliability assessments, resulting in more accurate forecasts of USE and procurement of RERT. The Commission noted the demand forecast update is a lengthy process, and considers the existing NER are adequate in requiring[244] AEMO to update the demand forecast when new information, material in nature, becomes available.

Seasonal outlook

The Commission understood the BOM releases a number of climate outlooks ranging from one week to three months. The three-month outlook is also referred to as the seasonal outlook, which the BOM release twice a month.

The Commission understood from AEMO's submission that its demand forecast model is not compatible with the seasonal outlook. The Commission noted stakeholders' view that seasonal outlook should be considered in AEMO's demand forecast, and modelled USE outcomes should be adjusted accordingly. However, the Commission considered:

- AEMO's demand forecast traces are based on historic data, and would need at least six months' of actuals to adjust the demand profile.
- AEMO's USE calculations are based on a mathematical approach and would need quantitative analysis, not a qualitative assessment, to support a change to the probability weightings.
- In the ST PASA, AEMO uses the seven to 10 day outlook from the BOM.

ESOO forecasts

The Commission has considered, and rejected as impractical, the approach of utilising different ESOO demand forecasts (or weightings of the forecasts) in the MT PASA in response to the short-medium term weather outlook.

Discrete changes in energy demand

243 Clause 3.13.3A(b) of the NER

244 Ibid

The Commission considered the NER are adequate in requiring[245] AEMO to update the demand forecast when new information, material in nature, becomes available.

Draft decision

The Commission's view was that no change to the NER was required in relation to this issue. The NER currently allows for updates to the MT PASA demand forecast if material changes in relevant information become available. The Commission also noted that, if AEMO updates the demand forecast due to new information, AEMO is required[246] to inform the market as soon as practicable.

9.4 Stakeholder views on draft determination

Ergon Energy and Mondo supported the Commission's draft decision, and considered there is sufficient prescription in the NER to require AEMO to update the demand forecast and notify the market when material changes in inputs occur.[247]

Both CS Energy and Snowy Hydro opposed the draft decision, and reiterated the position in the rule change request proposing that AEMO be required to update the demand forecast on a more frequent basis.[248] Snowy Hydro argued there needs to be a better solution to provide more demand accuracy to best utilise the benefits of the introduction of the RRO and wholesale demand response.[249]

ERM Power provided an early submission to the draft determination proposing an alternative solution of requiring AEMO to publish a monthly market notice. This notice would inform the market whether or not AEMO had updated the demand forecast that month.[250]

ERM Power argued while the Rules require that AEMO update the ESOO demand forecast, this change does not come into practical application with regards to the weekly MT PASA reliability forecast until the publication of the next annual ESOO.[251] ERM Power considered that this time delay may result in the inefficient procurement of Reliability and Emergency Reserve Trader (RERT) contracts which are justified by an out-of-date demand forecast in the MT PASA modelling.[252]

- This alternative solution was supported by most stakeholders.[253]
- AEMO opposed the need to publish a market notice every month if there is no update to the demand forecast as it would be unnecessarily onerous and inefficient.[254]

245 Ibid
246 NER clause 3.13.3A(b)
247 Submissions to draft determination: Ergon energy, p. 1; Mondo, p. 3.
248 Submissions to draft determination: CS Energy, pp. 3-4; Snowy Hydro, p. 2.
249 Snowy Hydro, submission to draft determination, p. 2.
250 ERM Power, early submission to draft determination, p. 2.
251 ERM Power, early submission to draft determination, p. 2.
252 Ibid, p. 2.
253 Submissions to draft determination: AEC, p. 2; EUAA, p. 2, ENGIE, p. 2; CS Energy, pp. 3-4; MEU, phone conversation with AEMC.
254 AEMO, submission to draft determination, p. 7.

- Both CS Energy and ERM Power noted the Portland Smelter event in December 2016, where the smelter's demand decreased, causing a drop in the Victorian total demand by 7% and 5% for average and peak demands.[255] ERM Power noted that AEMO was notified of the drop in the smelter's demand but chose not to update the demand forecast.[256]

9.5 Final analysis and conclusion

The Commission considers the draft decision to make no rule is more preferable to the proposed alternative solution - of requiring a monthly market notice irrespective of whether AEMO has updated the demand forecast or not. After engaging with AEMO, the Commission considers that an update to the MT PASA Process Description document, describing how AEMO considers material changes to inputs to the demand forecast regarding the role of the MT PASA, would sufficiently enhance transparency of the demand forecast process to market participants.

Has new information been provided to reassess the draft decision?

The Commission notes the alternative solution proposed by ERM Power and supported by others, which is for AEMO to publish a monthly market notice (irrespective of whether AEMO has updated the demand forecast or not). However, the Commission considers that a monthly market notice would not provide greater transparency of the demand forecast process. If AEMO update the demand forecast, it is required to update the market as soon as practicable.[257] In the event there is no market notice, it can be understood by the market there has been no update to AEMO's demand forecast.

The Commission notes some stakeholders supported the original rule change request position, to require AEMO to update the demand forecast more regularly. However, the Commission considers this issue was addressed in analysis provided in the draft determination, see section 9.3.

AEMC staff engaged further with AEMO on the Portland smelter event. AEMO confirmed that it decided not to update the Victorian demand forecast as it was informed that the smelter intended to return to operation quicker than what eventuated. AEMO acknowledged, with hindsight, it would ideally have updated the Victorian demand forecast.

AEMC staff engaged and agreed with AEMO that the intent of this aspect of the rule change request is to provide the market with greater transparency of how material changes to the demand forecast are considered. AEMO agreed that further description would be added to the MT PASA Process Description document, about how AEMO considers if there has been material changes to the demand forecast.

The Commission understands that in August 2020, AEMO will release an updated version of the MT PASA Process Description. In this document, AEMO will include the following section to outline what AEMO accounts for when considering whether to update demand and energy forecasts as part of an ESOO update:

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255 Submissions to draft determination: ERM Power, pp. 2-3; CS Energy, pp. 3-4.

256 ERM Power, early submission to draft determination, pp. 2-3.

257 NER, clause 3.13.3A(b)

As per 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. One of the components of the rule under clause (a)(1) are the projections of aggregate MW demand and energy requirements for each region.

When considering whether a change to inputs is material enough to trigger an update to the ESOO and the associated demand and energy projections, AEMO gives consideration to a number of factors including:

- *The time at which the information becomes available relative to the previous and next ESOO release.*
- *The period over which the change is expected to impact demand.*
- *The region in which the change applies and the circumstanced in that region.*
- *Whether the change is likely to materially impact the ESOO assessment (i.e. change the level of expected USE).*
- *Any obligation on AEMO to protect the confidentiality of the input required.*

In considering updates to the demand and energy forecasts, and the subsequent publishing of information relating to these forecasts in MT PASA, AEMO will also consider whether updated information would be valuable to participants by providing information which may be useful for scheduling and coordination of generator maintenance.

The Commission considers that including this description in the MT PASA Process Description document is sufficient, and no rule change is required.

Conclusion

The Commission's final decision will remain as outlined in the draft determination, which is not to make a rule change. However, the Commission understands AEMO will update its MT PASA Process Description document to include a description of how AEMO considers material changes to inputs to the demand forecast. In particular, in the context of the role served by the MT PASA and how it considers when an update to the demand forecast is required.

10 CURRENT INTENTIONS AND BEST ESTIMATES

This chapter presents the Commission's analysis and conclusion, regarding the AER's proposal to introduce a requirement on market participants to provide information for the MT PASA on a current intentions and best estimates basis.

10.1 Stakeholder views on consultation paper

This issue was not raised in ERM Power's rule change request. Rather, the AER recommended in their submission to the consultation paper[258], that in amending the rules with a view to improve the accuracy of MT PASA, the standards for information provided by a scheduled generator or market participant should also be reviewed and strengthened.

The AER proposed that the MT PASA provisions should be made consistent with the requirement[259] for ESOO information to represent "the Registered Participant's current intentions and best estimates".[260]

In subsequent conversations with many stakeholders, all agreed with the change proposed by the AER.

10.2 Analysis from draft determination

The Commission considered this change would provide benefits, including:

- Aligning information requirements of the MT PASA with both the ST PASA[261] and the ESOO.[262]
- Aligning the quality of information provided across the market projections.
- Potentially increasing confidence in the MT PASA outputs.

Draft decision

The Commission considered there would be minimal costs to making this change.

The Commission's view was that the NER should be amended to require Registered Participant's to submit information to AEMO for the MT PASA, which represents the Registered Participant's current intentions and best estimates. The Commission considered market participants would be able to implement this change from 20 February 2020 (the date of publication of the final determination and final rule).

10.3 Stakeholder views on draft determination

AGL, ENGIE and Mondo supported this change in the draft determination, and no submissions opposed it.[263]

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258 AER, submission to consultation paper, p. 2.
259 NER clause 3.13.3A(g)(3)
260 AER, submission to consultation paper, p. 2.
261 NER clause 3.7.3(e)
262 NER clause 3.13.3A(g)(3)
263 Submissions to draft determination: AGL, p. 2; ENGIE, p. 3; Mondo, p. 3.

ENGIE noted, as a matter of good practice, it would want to take the opportunity to review its processes to confirm compliance with the new Rule requirements, and expects that other participants would wish to do the same. ENGIE requested that the implementation date of this element of the Rule change be deferred to 20 May 2020 to allow participants a reasonable time to confirm compliance.[264]

10.4 Final analysis and conclusion

Has new information been provided to reassess the draft decision?

The Commission considers that no new information has been provided to consider changing the draft decision.

The Commission supports ENGIE's request for a delay in the rule taking effect to allow participants to ensure their processes will comply with the new rule.

Conclusion

The Commission's final decision will remain as outlined in the draft determination. The NER will be amended to require the information that a participant submits to the MT PASA to represent that Registered Participant's current intentions and best estimates. The Commission considers market participants will be able to review their processes and implement this change by 20 May 2020, three months from the publication of this final determination and final rule on 20 February 2020.

264 ENGIE, submission to draft determination, p. 3.

11 ADDITIONAL ISSUES RAISED IN RESPONSE TO THE DRAFT DETERMINATION

11.1 Generators to explain why a unit is unavailable (submission reason)

Issue

In an early submission to the draft determination, ERM Power proposed a new change that would require generators to submit to AEMO an explanation of why a generating unit is unavailable.[265] ERM Power noted the intent would be for the information to be provided solely to AEMO and not shared with the market.[266]

In follow up engagement, ERM Power added that the reason for an outage, or change in outage, could be limited to a few options, for example, routine, new, update to outage dates, and updates to outage duration. ERM Power considered this change would provide greater transparency of the market to AEMO.[267]

Stakeholder views

AEMO supported the intent of ERM Power's proposed new change, and considered that a better approach would be for scheduled generators or market participants to identify the type of outage when submitting individual MT PASA submissions. [268] AEMO noted the information would enable it to more effectively plan and operate the system, and allow it to undertake historical analysis to understand the reasons for outages, which is not possible with the current level of information provided.[269]

CS Energy supported the proposed change as long as the information remained only with AEMO and the AER.[270] EUAA also supported the change.[271]

Snowy Hydro, AGL, AEC, and EnergyAustralia opposed the change on the basis that it would provide little value, if any, and would divert resources from other more important tasks.[272]

Analysis and conclusion

The Commission's decision is to not make this proposed change.

The Commission considers:

- The proposed change is out of scope of the intent of the rule change request and would not provide greater transparency to the market of the MT PASA process, or its inputs and outputs.

265 AEMO, submission to draft determination, p. 3.
266 Ibid, p. 3.
267 Ibid, p. 3.
268 AEMO, submission to draft determination, p. 7.
269 Ibid, p. 7.
270 CS Energy, submission to draft determination, p. 4.
271 EUAA, submission to draft determination, p. 2.
272 Submissions to draft determination: Snowy Hydro, p. 2; AGL, p. 2; AEC, p. 2; EnergyAustralia, p. 1.

- There has been limited engagement on this issue due to the timing of it being raised. Also, it is unclear what information generators would need to provide, and the expectations and cost of compliance.

The Commission accepts the provision of a 'submission reason' for planned outages may be useful information for AEMO to know and operate the system, and considers AEMO could systematically request this information from generators on a voluntary basis.

11.2 Recall times

Issue

In its submission to the draft determination, AEMO proposed that generators be required to include a 'recall time' when submitting an outage.[273] That is, generators would be required to identify how much notice the generator requires to get the unit back online if called upon by AEMO to do so. AEMO acknowledged it currently does acquire this information on a regular basis through directly contacting generators.[274]

AEMO considered this automatically submitted information would allow it to more efficiently manage the reliability and security of the power system .[275]

AEMO argued[276] having access to recall times would:

- boost AEMO's visibility over the supply-side
- cut down the need to respond to queries from market participants about recall times, which currently places an additional significant workload on AEMO's operational team
- reduce any additional administrative burden on market participants.

AEMO suggested the requirement could be limited to a one-year outlook, as near-term information is likely to be most accurate and beneficial to AEMO.[277]

AEMO noted this change would require a minor adjustment to its systems to accommodate a recall time field, and potentially minor changes to market participants systems/processes, however AEMO considered this is likely to involve minimal cost.[278]

Stakeholder views

Stakeholders did not have an opportunity to respond in writing as this issue was raised in AEMO's submission to the draft determination.

AEMC staff did engage with stakeholders on this issue informally, and note that most stakeholders did not support the change.

Analysis and conclusion

The Commission's decision is to not make this proposed change.

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273 AEMO, submission to draft determination, p. 8.
274 Ibid, p. 8.
275 Ibid, p. 8.
276 Ibid, p. 8.
277 Ibid, p. 8.
278 Ibid, p. 8.

The Commission considers:

- The proposed change is out of scope of the intent of the rule change request. The change would not provide greater transparency to the market of the MT PASA process, or its inputs and outputs.
- There has been no formal engagement on this issue, due to the timing of it being raised.

The Commission accepts the provision of a 'recall time ' for each planned outage may be useful for AEMO to know and operate the system, and considers AEMO could request this information from generators on a voluntary basis.

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
BOM	Bureau of Meteorology
Commission	See AEMC
DUID	Dispatchable Unit Identification
ESOO	Electricity Statement of Opportunity
MCE	Ministerial Council on Energy
MT PASA	Medium Term Projected Assessment of System Adequacy
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
NOS	Network Outage Schedule
PASA	Projected Assessment of System Adequacy
POE	Probability of Exceedance
RERT	Reliability and Emergency Reserve Trader
RRO	Retailer Reliability Obligation
RSIG	Reliability Standard Implementation Guidelines
ST PASA	Short Term Projected Assessment of System Adequacy
USE	Unserved Energy

A SUMMARY OF OTHER ISSUES RAISED IN SUBMISSIONS

This appendix sets out the issues raised in the first round of consultation on this rule change request and the AEMC's response to each issue. [If an issue raised in a submission has been discussed in the main body of this document, it has not been included in this table.]

Table A.1: Summary of other issues raised in submissions

STAKEHOLDER	ISSUE	AEMC RESPONSE
Queensland Energy Users Network (QEUN), submission to consultation paper, p. 1.	QEUN noted the rule change request was silent on the current inability of consumers to access MT PASA data. QEUN's noted that previously MT PASA data was available on AEMO's website in a consumer friendly graph format on their Data Dashboard. QEUN argued the MT PASA outputs should be published publicly.	The Commission noted AEMO is required to publish the outputs of the MT PASA* and do so through their www.nemweb.com.au website, which is accessible to the public. The Commission considered stakeholders should engage directly with AEMO on the format of published data.

Source: *See NER clause 3.7.2(a)

B LEGAL REQUIREMENTS UNDER THE NEL

This appendix sets out the relevant legal requirements under the NEL for the AEMC to make this final rule determination.

B.1 Final rule determination

In accordance with s. 102 and 103 of the NEL the Commission has made this final rule determination in relation to the rule proposed by ERM Power.

The Commission's reasons for making this final rule determination are set out in section 2.4.

A copy of the more preferable final rule is attached to and published with this final rule determination. Its key features are described in section 2.2.2.

B.2 Power to make the rule

The Commission is satisfied that the more preferable final rule falls within the subject matter about which the Commission may make rules. The more preferable final rule falls within s. 34 of the NEL as it relates to regulating the operation of the NEM and to regulating the activities of persons (including registered participants) participating in the NEM (NEL ss. 34(1)(a)(i) and (iii)).

B.3 Commission's considerations

In assessing the rule change request the Commission considered:

- it's powers under the NEL to make the rule
- the rule change request
- submissions received during first round consultation
- the Commission's analysis as to the ways in which the final rule will or is likely to, contribute to the NEO.

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.[279]

The Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of AEMO's declared network functions.[280] The more preferable final rule is compatible with AEMO's declared functions because it does not regulate AEMO's declared network functions.

279 Under s. 33 of the NEL the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the Federal, State and Territory Ministers responsible for energy. On 1 July 2011, the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. The amalgamated council is now called the COAG Energy Council.

280 Section 91(8) of the NEL.

B.4 Civil penalties

The Commission cannot create new civil penalty provisions. However, it may recommend to the COAG Energy Council that new or existing provisions of the NER be classified as civil penalty provisions.

The Commission's final more preferable rule amends clause 3.7.2(d) of the NER. This rule is currently classified as a civil penalty provision under Schedule 1 of the National Electricity (South Australia) Regulations.

Clause 3.7.2(d) of the NER requires that certain MT PASA inputs be submitted by each relevant Scheduled Generator or Market Participant in accordance with the timetable. It is proposed to amend the clause to require that those inputs must also represent the Scheduled Generator or Market Participant's current intentions and best estimates.

The Commission considers that clause 3.7.2(d) should continue to be classified as a civil penalty provision and therefore does not propose to recommend any change to its classification to the COAG Energy Council.

The Commission does not consider any other provisions of the final rule should be classified as civil penalty provisions.

B.5 Conduct provisions

The Commission cannot create new conduct provisions. However, it may recommend to the COAG Energy Council that new or existing provisions of the NER be classified as conduct provisions.

The final rule does not amend any rules that are currently classified as conduct provisions under the NEL or National Electricity (South Australia) Regulations. The Commission does not propose to recommend to the COAG Energy Council that any of the amendments made by the final rule be classified as conduct provisions.

B.6 Review of operation of final rule

The final rule does not require the Commission to conduct a formal review of the operation of the rule. The Commission may however self-initiate a review of the operation of the rule at any time if it considers such a review would be appropriate, pursuant to s. 45 of the NEL. In addition, any person (other than the Commission) may request a change to the NER under s. 91 of the NEL.