Australian Energy Market Commission

RULE CHANGE

CONSULTATION PAPER

National Electricity Amendment (Reporting of aggregate generation capacity for MT PASA) Rule 2018

Rule Proponent(s)
AEMO

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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.

1 Introduction

On 21 December 2017, the Australian Energy Market Operator (AEMO) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission).[1] The request seeks to amend the National Electricity Rules (NER) to remove the requirement to consider network constraints when publishing aggregate generation capacity for each region in the medium-term projected assessment of system adequacy (MT PASA). Network constraints will continue to be taken into account in other relevant outputs of the MT PASA.

This consultation paper has been prepared to facilitate public consultation on the rule change request and to seek stakeholder submissions.

This paper:

- provides a summary of, and background to, the rule change request;
- identifies a number of questions and issues to facilitate consultation on this rule change request; and
- outlines the process for making submissions.

1.1 Background

1.1.1 MT PASA

The NER require that AEMO administer the PASA processes.[2] 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 require AEMO to administer the PASA for both a medium term and short term period.[3] The subject of this rule change request relates to the medium term process, or MT PASA.

The MT PASA assesses the adequacy of expected electricity supply to meet demand across a two-year horizon through regular assessment of any projected failure to meet the reliability standard.[4] The primary objective of the MT PASA is to provide sufficient

1 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2018. See: https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

2 Rule 3.7 of the NER.

3 Ibid. AEMO also runs a pre-dispatch PASA process even though it is not required by the NER.

4 Rule 3.7.2(6) of the NER. The reliability standard is set by the Reliability Panel and expresses the level of reliability sought from the NEM's generation and transmission interconnection assets. The current reliability standard is a maximum expected unserved energy in a region of 0.002 per cent of the total energy demanded in that region for a given financial year. In other words, the reliability standard requires that there be sufficient generation and transmission interconnection in a region such that at least 99.998 per cent of forecast annual demand for electricity is expected to be

information on the expected level of medium-term capacity reserve and hence allow market participants to schedule planned outages of generating units and network maintenance. AEMO also uses the MT PASA to alert the market of any days on which a low reserve condition is forecast to occur, and seeks a market response.[5] If a market response is not forthcoming, AEMO may intervene, up to 10 weeks ahead, through the procurement of reserves using the reliability and emergency reserve trader (RERT).[6]

Inputs analysed in the MT PASA process are provided by both AEMO and market participants, including demand forecasts, network constraints, generation capacity, energy constraints, intermittent generation forecasts and planned network outages. Network constraints are based on information provided by networks, specifically, an outline of planned outages and availability of interconnectors.[7]

1.1.2 MT PASA redevelopment

In 2016, AEMO engaged a consultant to recommend improvements to the MT PASA process.[8]

This was because the current MT PASA process and associated rules were developed prior to the NEM commencing in 1998, when there was negligible intermittent wind and solar generation in the NEM and consumers were less active in managing their energy consumption. The current MT PASA process uses a predominantly deterministic approach for analysing inputs. The way AEMO assesses the reliability standard in the current process relies on pre-computed static minimum reserve levels to capture inter-regional reserve sharing capability, network system normal constraints, and generation forced outage probabilities. These calculations have not been updated since 2010.

The NEM has since changed considerably in character, with more intermittent generation installed in the power system, a change in generation mix and consumer engagement increasing, leading to a rise in demand-side participation. In its rule change proposal, AEMO argues that this evolution of the NEM has led to greater uncertainty in forecasting both the supply and demand sides of the NEM, resulting in a

supplied. See:
https://www.aemc.gov.au/markets-reviews-advice/reliability-standard-and-settings-review-2018

5 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2017. See:
https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

6 Rule 3.20 of the NER. AEMO has recently submitted two rule changes in relation to the RERT, including one to reinstate the long-notice RERT which proposes to increase the procurement lead time to nine months. See
https://www.aemc.gov.au/our-work/changing-energy-rules/rule-changes

7 For more information on the MT PASA process, please see Appendix C of the Reliability Frameworks Review interim report available at:
https://www.aemc.gov.au/markets-reviews-advice/reliability-frameworks-review

8 See:
https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Data/Market-Management-System-MMS/Projected-Assessment-of-System-Adequacy

need to reassess the current MT PASA methodology to maintain its effectiveness and thereby improve the decision making of stakeholders and AEMO.[9]

As a result, in 2016, AEMO commenced a redevelopment process to assess whether the current MT PASA methodology was fit for purpose, and to elicit options for improvement.

AEMO consulted extensively as part of the MT PASA redevelopment process to understand the limitations of the current methodology, the value of MT PASA information, propose alternative methodologies and solutions for implementation. As a result of the redevelopment process, a new MT PASA system is currently being adopted. This new process probabilistically assesses the risk and uncertainties of power system operation, running 1,600 Monte-Carlo simulations to reflect the operation of the NEM. It probabilistically determines whether the reliability standard is projected to be met, as opposed to using a deterministic and static reserve level.[10]

Implementation of the new probabilistic methodology therefore means that the MT PASA is consistent with the other processes AEMO uses to assess the reliability standard, i.e. the Electricity Statement of Opportunities and the Energy Adequacy Assessment Projection, which also use similar probabilistic methodologies. Aligning these processes creates efficiencies and improves the quality and consistency of information provided to the market.

It is anticipated the redeveloped MT PASA production release will occur towards the end of April 2018, but no later than 30 May 2018.

While the new process is largely compliant with the NER, AEMO has identified two clauses of the NER in relation to the MT PASA which it states are not compatible with the new MT PASA process.[11] This is discussed next.

1.2 Issue raised in the rule change request

Clause 3.7.2 of the NER details the requirements for the administration of the MT PASA, including the requirement that AEMO publish multiple MT PASA outputs covering different aspects of the NEM. This rule change request concerns clauses 3.7.2(f)(5A) and (5B), which require AEMO to distinguish between, and separately report on, aggregate capacity of scheduled generation in a region that can and cannot

9 Ibid, p.4.

10 See: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Data/Market-Management-System-MMS/Projected-Assessment-of-System-Adequacy

11 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2017, p.2. See: https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

be generated continuously at the PASA availability,[12] and forecast generation of semi-scheduled generating units after allowing for the impact of network constraints.[13]

In the rule change proposal, AEMO states that in developing the new MT PASA methodology, the MT PASA output reports have been designed to satisfy, as far as possible, the requirements of clauses 3.7.2(f)(5A) and (5B). However, assessment of the impact of network constraints in this context is not practical, and is incompatible with the probabilistic modelling approach that is now being adopted in the redeveloped MT PASA.[14]

AEMO argues that this is because whether or not a particular generator will be constrained in any given period due to network limitations depends on a number of factors. These factors include the dispatch pattern across all generators, and geographical distribution of all demand and intermittent generation including intermittent generator levels and other generation dispatch, many of which are not known when the MT PASA is published.

According to AEMO, the aggregate capacity that may or may not be constrained can no longer be calculated without making gross deterministic approximations of all of these uncertain attributes, which would be inconsistent with the random assumptions used in the probabilistic modelling. AEMO considers that any attempt to approximate the impact of network constraints into the information published under clauses 3.7.2(f)(5A) and (5B) would risk misinforming the market and other users of the MT PASA.[15]

Question 1 Issues

- **What are stakeholders' views on the issue raised by AEMO?**
- **Are there any other issues relevant to this rule change request that the AEMC should consider?**

12 PASA availability is defined in Chapter 10 of the NER as "the physical plant capability (taking ambient weather conditions into account in the manner described in the procedure prepared under clause 3.7.2(g)) of a scheduled generating unit, scheduled load or scheduled network service available in a particular period, including any physical plant capability that can be made available during that period, on 24 hours' notice."

13 Consideration of network constraints was added to the two clauses in the NER that describe these two outputs at the request of AEMO as part of a larger rule change on the MT PASA in 2010. AEMO requested they be added to reflect what was already happening from an operational perspective at the time. See: https://www.aemc.gov.au/rule-changes/amendments-to-pasa-related-rules

14 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2017,p.10. See: https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

15 Ibid.

1.3 Proposed solution

AEMO's rule change request proposes to amend the NER by removing the network constraint consideration requirement from clauses 3.7.2(f)(5A) and (5B) of the NER.[16]

AEMO states that the removal of the network constraint consideration from these clauses will allow it to publish aggregate supply side information taking into account energy constraints in a way that is compatible with the new MT PASA. In the rule change proposal, AEMO argues that any attempt to meet the current network constraint consideration obligation devalues that information and is impractical.[17] AEMO states that the rule, if made, would facilitate the publication of information that better informs the planning and operational decisions participants need to make in relation to their generation and load facilities.[18]

AEMO states that extensive consultation with stakeholders during the PASA redevelopment project indicates that the value of the information reported in clauses 3.7.2(f)(5A) and (5B) would be improved by not attempting to make any approximation of the impact of network constraints in that context.[19]

Furthermore, in 2017, as a precursor to this rule change proposal and as part of the MT PASA redevelopment, AEMO assessed the value of the information provided in clauses 3.7.2(f)(5A) and (5B) through the Reliability Standard Implementation Guidelines (RSIG) consultation process.[20] It also tested whether this value would increase, and promote the NEO, if published more frequently without consideration of network constraints.[21] Based on feedback received through the consultation process, AEMO indicated in the final report and determination for the 2017 RSIG consultation that it intended to propose a rule change to report energy constrained and unconstrained information in the absence of network constraints as an alternative to the current NER obligation.[22]

In its rule change proposal, AEMO states that the new MT PASA system, which directly simulates power system operation, will much more accurately take network constraints into account when determining reliability, and when assessing the impact

16 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2017, p.18. The rule change request contains the proposed deletion of the words "after allowing for the impact of network constraints" from clauses 5.7.2(f)(5A) and (5B) of the NER.

17 Ibid, p.12.

18 Ibid.

19 Ibid.

20 Ibid, p.8. The RSIG outline how AEMO will implement the reliability standard, including how it is applied in the MT PASA process. In redeveloping the MT PASA, AEMO consulted with stakeholders, including the Reliability Panel, on the necessary amendments that had to be made to the RSIG to align it with the redesigned MT PASA process.

21 Ibid.

22 AEMO, Reliability Standard Implementation Guidelines, Final Report and Determination, 15 August 2017, p. 14.

of network constraints on generation dispatch and load.[23] This information, covering a range of possible but uncertain power system conditions that may become binding network constraints on dispatch of generation or load, will be reported under clause 3.7.2(f)(6)(v) of the NER. This clause requires that the MT PASA identify and quantify when and where network constraints may become binding on the dispatch of generation or load.

The rule change request, including the proposed rule, can be found on the AEMC website.[24]

Question 2 Proposed solution

- **Does the proposed rule address the issue stated by AEMO?**
- **Are there alternatives to the proposed rule that would address the issue stated by AEMO?**
- **Do stakeholders envisage any costs of implementing the proposed rule?**

1.4 Assessment framework

1.4.1 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).[25] This is the decision making framework that the Commission must apply.

The NEO is:[26]

> "To promote efficient investment in, and efficient operation and use of, electricity services for the longer 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 AEMC considers that the relevant aspect of the NEO is the promotion of efficient investment in and use of electricity services with respect to the reliability of the

23 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2017. See: https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

24 https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

25 Section 88 of the NEL.

26 Section 7 of the NEL.

national electricity system. In determining whether the proposed rule is likely to promote the NEO, the Commission will have regard to the following principles:

- **Transparency and quality of information:** The provision of relevant, consistent and transparent information to parties who require and value such information to carry out their responsibilities under the NER is important in supporting the efficiency of the power system.

- **Regulatory certainty:** Clear regulatory responsibilities for AEMO when preparing the MT PASA minimises ambiguity and supports enhanced forecasting capability, thus improving energy reliability.

The assessment framework will consider if the benefits of the proposed rule outweigh the costs. The benefits of removing the consideration of network constraints from the aggregate generation capacity outputs for the MT PASA should outweigh the costs or risks of such a change.

Question 3 Assessment framework

- **Is the assessment framework appropriate for considering the proposed rule change request?**

- **Are there other relevant considerations that should be included in the assessment framework?**

From 1 July 2016, the National Electricity Rules (NER), as amended from time to time, apply in the Northern Territory, subject to derogations set out in Regulations made under the NT legislation adopting the NEL.[27] Under those Regulations, only certain parts of the NER have been adopted in the NT.[28] As the proposed rule related to parts of the NER that currently do not apply in the Northern Territory, the Commission will not assess the proposed rule against additional elements required by the Northern Territory legislation.[29]

27 National Electricity (Northern Territory) (National Uniform Legislation) (Modifications) Regulations.

28 For the version of the NER that applies in the Northern Territory, refer to : http://www.aemc.gov.au/Energy-Rules/National-electricity-rules/National-Electricity-Rules-(Northern-Territory).

29 National Electricity (Northern Territory) (National Uniform Legislation) Act 2015.

2 Process for this rule change

2.1 Treatment as a non-controversial rule change

The Commission considers that the rule change request is a request for a non-controversial rule because it is unlikely to have a significant impact on the national electricity market.[30] It is not anticipated to have a significant cost impact on NEM participants, and accordingly should not result in additional costs to consumers. In addition, AEMO states in its rule change request that it engaged with stakeholders through the RSIG consultation process in 2017 where the issue this rule change request seeks to address was put to stakeholders and support was provided for the change AEMO is proposing.[31]

Rule changes that are considered to be non-controversial may be processed under an expedited (faster) process under which there is only one round of consultation and the AEMC must publish its final rule determination within six weeks of commencing the rule change process.[32]

The Commission has decided to use an expedited process to consider this rule change request provided that it does not receive any valid requests not to use the expedited process by 26 April 2018. To be valid, an objection should set out the reasons why the rule change request will have a significant impact on the national electricity market.

2.2 Key dates

Given the tightly defined nature of the issue, and the background information provided in the rule change request, this consultation paper is brief. Nevertheless, submissions are invited in relation to the matters identified above, and any other relevant issue.

The **key dates** for stakeholders in this process are as follows:

- Commencement of this rule change process: 12 April 2018
- Objections to an expedited process to be received by: 26 April 2018
- Submissions to the proposal to be received by: 10 May 2018
- Final decision to be published under an expedited process by: 24 May 2018

30 Section 87 of the NEL.

31 AEMO, Reporting of aggregate generation capacity (MT PASA), rule change request, 21 December 2017, p.9. See: https://www.aemc.gov.au/rule-changes/reporting-of-aggregate-generation-capacity-for-mt

32 The AEMC has published a notice under sections 95 and 96 of the National Electricity Law to commence and assess this rule change request as a non-controversial rule.

3 Lodging a submission

The Commission invites requests not to make a rule under the expedited process and written submissions on this rule change proposal.

All enquiries on this project should be addressed to Elizabeth Bowron on (02) 8296 0619.

3.1 Lodging a request not to make a rule under an expedited process

Written requests not to make a rule under the expedited process in section 96 of the NEL must include reasons for the request, and must be lodged with the Commission by 26 April 2018, either online or by mail.

3.2 Lodging a submission to this rule change request

Written submissions on the rule change request must be lodged with Commission by 10 May 2018, either online or by mail, in accordance with the requirements specified below.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions on rule change requests[33]. The Commission publishes all submissions on its website, subject to a claim of confidentiality.

3.3 Lodging a submission electronically

Electronic submissions, or requests not to make a rule under the expedited process, must be lodged online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code ERC0232.

The request or submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

3.4 Lodging a submission by mail

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The request or submission should be sent by mail to:

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

The envelope must be clearly marked with the project reference code: ERC0232

33 This guideline is available on the Commission's website www.aemc.gov.au.

Abbreviations

AEMC	Australian Energy Market Commission
Commission	See AEMC
AEMO	Australian Energy Market Operator
MT PASA	Medium-Term Projected Assessment of System Adequacy
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
RSIG	Reliability Standard Implementation Guidelines