



ST PASA Procedure and related documents

Final Report – Standard consultation
for the National Electricity Market

Published: 24 February 2025

aemo.com.au

New South Wales | Queensland | South Australia | Victoria | Australian Capital Territory | Tasmania | Western Australia
Australian Energy Market Operator Ltd ABN 94 072 010 327

© 2025 Australian Energy Market Operator Limited. The material in this publication may be used in accordance with the [copyright permissions on AEMO's website](#).

Executive summary

The publication of this final report concludes the standard consultation procedure conducted by AEMO to consider proposed procedures for the Short Term Projected Assessment of System Adequacy (ST PASA) process (**Procedures**) and amendments to related documents (the **proposal**) under the National Electricity Rules (**NER**).

AEMO thanks all stakeholders for their feedback on the proposal, which was undertaken as required by NER 11.149.1, following the procedure in NER 8.9.2.

The *National Electricity Amendment (Updating Short Term PASA) Rule 2022*¹ (**Amending Rule**) requires AEMO to develop and publish the Procedures in accordance with NER 3.7.3 as in force from 31 July 2025, when Schedule 1 of the Amending Rule commences (**new NER 3.7.3**).

The Amending Rule will introduce a principles-based framework, linked to the PASA objective, to guide AEMO's administration of ST PASA. Other changes introduced by the Amending Rule include a requirement for AEMO to publish availability information for individual scheduled resources and amended definitions of PASA availability and energy constraints.

AEMO developed the initial Procedures to broadly reflect the content covered by the existing Short Term PASA Process Description², updated to address the information requirements of new NER 3.7.3. Submissions received from the initial consultation suggested some ideas for AEMO to consider to improve transparency of the ST PASA process, and some issues that were out of scope for this consultation.

AEMO received five submissions to its draft Report and responded to these ideas and issues in the summary table in Appendix B, and after consideration of the following key points, has included them into the final ST PASA Procedure:

- AEMO's interpretation of recallable capacities and recall period scenarios and examples
- Further clarity around Scheduled Bidirectional Units and ST PASA's modelling assumptions.

AEMO's final determination on the proposal is to make the **ST PASA Procedure** in the form published with this final report, with an effective date of **31 July 2025**.

¹ The Amending Rule as made and all AEMC consultation materials are available on the AEMC's website at <https://www.aemc.gov.au/rule-changes/updating-short-term-pasa>.

² AEMO, Short Term PASA Process Description, 21 June 2016, at <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/projected-assessment-of-system-adequacy>.

This consultation also covers minor amendments to the Reliability Standard Implementation Guideline (**RSIG**), the Spot Market Operations Timetable, and SO_OP_3703: Short Term Reserve Management, with an effective date of **31 July 2025**.

Contents

Executive summary	3
1. Stakeholder consultation process	6
2. Background	8
2.1. Context for this consultation	8
2.2. NER requirements	8
2.3. The national electricity objective	9
3. List of material issues	10
4. Discussion of material issues	11
4.1. How the procedures explain recall period, including clarity on what exactly is required from market participants and when	11
4.2. Concerns around administrative burden	12
4.3. Whether the issues raised and considered out of scope will be considered in ST PASA replacement project	13
5. Other matters	13
5.1. Consequential changes to related documents	14
6. Final determination on proposal	15
Appendix A. Glossary	16
Appendix B. List of Submissions and AEMO Responses	17

Tables

Table 1 List of material issues	10
---------------------------------------	----

1. Stakeholder consultation process

As required by National Electricity Rules (**NER**) 11.149.1, AEMO is consulting on Short Term Projected Assessment of System Adequacy (**ST PASA**) Procedures and related documents (the **proposal**) in accordance with the standard rules consultation procedure in NER 8.9.2.

The proposal also covers consequential changes to the following documents, which are required as a result of the Amending Rule:

- Reliability standard implementation guidelines (**RSIG**).
- SO_OP_3703: Short term reserve management.
- Spot market operations timetable.

Note that this document uses terms defined in the NER, which are intended to have the same meanings. There is a glossary of additional terms and abbreviations in Appendix A.

Consultation steps	Dates
Generator recall workshop	4 July 2024
Feedback from stakeholders on generator recall workshop	19 July 2024
Procedure consultation workshop	24 July 2024
Feedback from stakeholders on Procedure consultation workshop	9 August 2024
Consultation paper published	3 September 2024
Submissions due on consultation paper	1 October 2024
Draft report published, including draft Procedures and marked up consequential amendments to other impacted documents	28 October 2024
Submissions due on draft report	2 December 2024
Information session with Stakeholders	20 January 2025
Final report and documents published	24 February 2025 (completed with this publication)

AEMO's consultation webpage for the proposal is at

<https://www.aemo.com.au/consultations/current-and-closed-consultations/st-pasa-procedures-and-related-documents-consultation>, containing all previous published papers and reports, written submissions, and other consultation documents or reference material.

In response to its consultation paper on the proposal, AEMO received **five** written submissions.

AEMO thanks all stakeholders for their feedback on the proposal to date, which has been considered in preparing this draft report, and has resulted in changes to the

clarification of treatment of energy storage systems and loads as well as generator recall information.

In response to its draft report, AEMO received **five** written submissions. AEMO has responded to these ideas and issues in the summary table in Appendix B, and after consideration of the following key points, has included them into the final ST PASA Procedure.

AEMO thanks all stakeholders for their feedback on the proposal throughout this consultation, which has been considered in preparing this final report.

2. Background

2.1. Context for this consultation

The Australian Energy Market Commission (**AEMC**) made the Amending Rule in May 2022. From 31 July 2025, the Amending Rule will replace the existing short term PASA framework in the NER with a principles-based framework. It will also revise the definitions of ‘energy constraint’ and ‘PASA availability’, which relate to some of the information provided by market participants as inputs to the short term PASA.

The Amending Rule requires AEMO to develop and publish the Procedures by 30 April 2025³.

This final report sets out AEMO’s final Procedures, in accordance with NER 3.7.3 as replaced by the Amending Rule (**new NER 3.7.3**). Included with the final Procedures are minor amendments that are required for three other AEMO published documents as a result of the Amending Rule.

2.2. NER requirements

The NER⁴ require AEMO to prepare and publish the PASA in two timeframes:

- short term PASA covers each 30-minute period in the seven trading days from and including the day of publication; and
- medium term (MT) PASA covers 24 months from the Sunday after the day of publication with a daily resolution.

For ST PASA, AEMO uses the inputs from registered participants and information produced by its own systems to forecast reliability and security conditions up to seven days ahead of real time. The Amending Rule provides a certain amount of flexibility to redevelop and update the information in the ST PASA in a way that best meets the ‘PASA objective’ in NER 3.7.1(b):

The PASA is a comprehensive program of information collection, analysis and disclosure of medium term and short term system security and reliability of supply prospects so that Registered Participants are properly informed to enable them to make decisions about supply, demand and outages of transmission networks in respect of periods up to 2 years in advance (or up to 3 years in advance, where specified).

³ NER 11.149.1

⁴ NER 3.7.2 and 3.7.3

As outlined in the Consultation Paper⁵, the ST PASA Procedures are to include the elements described in new NER 3.7.3(c).

2.3. The national electricity objective

Within the specific requirements of the NER applicable to this proposal, AEMO has sought to make a determination that is consistent with the national electricity objective (**NEO**) and, where relevant, to select the option best aligned with the NEO.

The NEO is expressed in section 7 of the National Electricity Law as:

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; and*
- (c) the achievement of targets set by a participating jurisdiction—*
 - (i) for reducing Australia’s greenhouse gas emissions; or*
 - (ii) that are likely to contribute to reducing Australia’s greenhouse gas emissions.*

⁵See <https://www.aemo.com.au/consultations/current-and-closed-consultations/st-pasa-procedures-and-related-documents-consultation>.

3. List of material issues

The key material issues raised in submissions to the draft report are listed in Table 1. This final report only discusses those issues. Please refer to the draft report itself for AEMO's consideration of issues arising at earlier stages of consultation.

Table 1 List of material issues

No.	Issue	Raised by
1.	How the procedures explain recall time, including clarity on what exactly is required from market participants and when	AEC, Origin, AGL
2.	Concerns around administrative burden	AGL, Mercuria
3.	Whether the issues raised and considered out of scope will be considered in ST PASA replacement project	AEC, Origin, AGL, Alinta, Mercuria

A detailed table of issues raised by stakeholders in written submissions to the draft report, together with AEMO's responses, is contained in Appendix B.

Each of the material issues in Table 1 is discussed in Section 4.

Other issues, such as issues that are out of scope for this consultation are discussed in Section 5. Additions to the Procedure such as additions on the clarity around how bidirectional units (BDUs) are to be considered in PASA, and contributions from scheduled resources to regional LOR reserve are also discussed in in Section 5.

4. Discussion of material issues

4.1. How the procedures explain recall period, including clarity on what exactly is required from market participants and when

4.1.1. Issue summary and submissions

Through submissions, stakeholders expressed their concern around a lack of clarity on how AEMO uses the information provided as recall period. Stakeholders expressed confusion about the requirements for recall period and what is required by stakeholders including around the intended use of generator recall information.

4.1.2. AEMO's assessment

AEMO can provide information on what participants are to provide as market information. The ST PASA information is market information and is provided by Stakeholders in accordance with *AER Rebidding and Technical Parameters Guideline*⁶.

To improve clarity in the ST PASA Procedure on how recall period will be interpreted by AEMO and used for recallable capacity, AEMO developed and included a set of scenarios in section 3.

From 1 July 2025, market participants can enter the recall period associated with *PASA Availability*. AEMO will use recall period for operational decision making from 31 July 2025.

The scenarios set out what AEMO's systems interpret following the input of values from market participants. The scenarios are available as Table 1 in the ST PASA Procedure and can be summarised as follows:

- Participants can provide PASA availability and associated recallable plant capacity and the recall period (hours).
- Recall period must be greater than or equal to 0 hours.
- If the PASA Availability = Available Capacity is available in 0 hours, the ST PASA will assume the units are not available for recall, and the recall period is ignored.
- The maximum value AEMO will accept is 24000 hours, which is equivalent to 1000 days and in line with the maximum value in MT PASA.
- The maximum value is also the default value i.e. 24000 hours.
- If recall period is left blank;

⁶ As at https://www.aer.gov.au/system/files/2024-10/AER%20-%20Rebidding%20and%20Technical%20Parameters%20Guidelines%20-%20updated%20October%202024_0.pdf

- on the web bidding portal, then AEMO’s system will default to 24000 hours.
- in the API submission, the recall period attribute needs to be removed for AEMO systems to default to 24000 hours. If there is a non-numeric value, the bid will be rejected.
- If 0 is entered, AEMO’s systems consider the available physical plant is immediately recallable.
- If any non-numeric values are entered, then the bid will be rejected.
- Recallable plant capability with recall periods greater than 168 hours (7 days) is beyond the ST PASA timeframe and cannot be used for operational decision making. Therefore, the default value of 24000 hours is interpreted as not available.
- If Participants want to indicate to the market that unit recall is available, on for example a 3-day recall, then the recall period must reflect this.
- Recall period can be up to 2 decimal places. A bid rejection will occur for 3 decimal places.

4.1.3. AEMO’s conclusion

AEMO has included the scenario examples in Table 1, section 3 of the ST PASA Procedure for stakeholder reference and information.

AEMO recommends that stakeholders read the scenarios for more information on how AEMO’s systems interpret data provided by market participants to the market to indicate plant capacity recall availability.

4.2. Concerns around administrative burden

4.2.1. Issue summary

AGL notes in its submission that “Filling out updated recall times for every instance there is a change to generator conditions will be very onerous. It will require frequent communication with generator operations and trading teams. A single change to generator timings would cascade across a range of bidding system inputs. The additional administrative burden would equate to a material ongoing resourcing requirement.”

4.2.2. AEMO’s assessment

AEMO notes this concern and agrees that this concern is valid. The requirement to provide information to market is part of the PASA Objective, to better inform the market on supply adequacy. AEMO has provided in the ST PASA Procedure (Table 1)

with the intent to provide clarity around timings and regularity of the information to be entered.

4.2.3. AEMO's conclusion

AEMO has summarised examples in Table 1 of the ST PASA Procedure to assist stakeholders in understanding how the information they provide is interpreted by AEMO. This is intended to demonstrate how often the recall period value can be provided and hopefully alleviate these concerns raised around administrative burdens.

4.3. Whether the issues raised and considered out of scope will be considered in ST PASA replacement project

4.3.1. Issue summary

Stakeholders are concerned that AEMO will not re-consider the issues that have been raised during this consultation that were considered out of scope in the ST PASA Replacement Project.

The ST PASA Replacement Project will commence a separate consultation process where stakeholders will be able to engage and provide issues and feedback to the ST PASA and the application of the new Rule NER 3.7.3.

4.3.2. AEMO's assessment

AEMO has had to minimise the scope of this consultation due to the requirements and obligations set out under the rule 'Updating Short term PASA'. AEMO needs to satisfy these requirements to enable it to be compliant with the NER from 31 July 2025.

AEMO is confident that it has captured the issues that stakeholders have brought throughout this consultation process that were identified as out of scope, and will re-consider them for the ST PASA Replacement Project consultation.

4.3.3. AEMO's conclusion

AEMO thanks stakeholders for their patience with AEMO's ST PASA Replacement Project which has been delayed beyond the commencement of the new Rule.

AEMO encourages all stakeholders to engage with the ST PASA Replacement Project and to raise issues that they consider important for AEMO to consider and re-consider.

5. Other matters

AEMO has included clarity around modelling assumptions for scheduled generators and bidirectional units and semi-scheduled generators. This includes additional explanation that:

- ST PASA only includes scheduled and semi-scheduled generating units, bidirectional units (generation-side) and Wholesale Demand Response (WDR)
- ST PASA excludes scheduled loads and bidirectional units (load-side)
- ST PASA is only capable of modelling Daily Energy Constraints, and for BDUs only the generation side is modelled

For energy constrained plants, the ST PASA includes a process for allocating the contribution of energy limited plant to certain times in a day that maximises reserves throughout each day of the PASA period. This contribution is illustrated through Figure 2 in the Procedure.

AEMO has also confirmed that contributions from scheduled generation with daily energy constraints and from BDUs for regional LOR reserve are reported under the 'Constrained Capacity' for the region. Contributions from scheduled generation with no daily energy constraints and from semi-scheduled generating units for regional LOR reserve are therefore reported under the 'Unconstrained Capacity' for the region.

5.1. Consequential changes to related documents

AEMO has also finalised the minor consequential amendments, without making any further changes to the versions published with the draft consultation paper, to the Reliability Standard Implementation Guideline (**RSIG**), the Spot Market Operations Timetable, and SO_OP_3703: Short Term Reserve Management, with the effective date of **31 July 2025**.

6. Final determination on proposal

Having considered the matters raised in submissions to the draft report and at stakeholder information sessions, AEMO's final determination is to make the ST PASA Procedure and related documents in the form published with this final report, in accordance with NER 11.149.1.

The final amendments to the **ST PASA Procedure and related documents** differ from the draft determination in the following material respects, for the reasons discussed in section 4 of this final report:

- AEMO's interpretation of recallable capacities and recall period scenarios and examples
- Further clarity around Scheduled Bidirectional Units and ST PASA's modelling assumptions.

As stated in Section 2.3, AEMO has sought to make a determination that is consistent with the national electricity objective (NEO) and considers how the ST PASA contributes to the efficient operation and use of energy and capacity services with respect to reliability and security of supply of electricity, and the reliability and security of the national electricity system.

Effective date

The effective date for the ST PASA Procedure is 31 July 2025.

Appendix A. Glossary

Term or acronym	Meaning
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator Limited
Amending Rule	<i>National Electricity Amendment (Updating short term PASA) Rule 2022</i>
BDU	Bidirectional unit
DUID	Dispatchable unit identifier
FUM	Forecast uncertainty measure
HH	A 30 minute period ending on the hour and each continuous period of 5 minutes thereafter and, Half-hour (30-minute period) where identified by a time, means the 30 minute period ending at that time.
LOR	Lack of reserve
LRC	Low reserve condition
NEO	National Electricity Objective
NER	National Electricity Rules ⁷
PD PASA	Pre-dispatch projected assessment of system adequacy
6-day PASA	Projected assessment of system adequacy covering the period of six trading days starting from the end of the trading day covered by the most recently published pre-dispatch schedule.
RSIG	Reliability standard implementation guidelines
ST PASA	Short term projected assessment of system adequacy ⁸
WDR	Wholesale Demand Response

⁷ NER followed by a number refers to a rule or clause of the National Electricity Rules

⁸ The *Amending Rule* requires ST PASA to cover PD PASA and 6-day PASA.

Appendix B. List of Submissions and AEMO Responses

No.	Stakeholder	Issue	AEMO response
1	Australian Energy Council (AEC)	The key issue we consider is in the statement is “so that Registered Participants are properly informed to enable them to make decisions”. It’s unclear to our members that the current consultation process is seeking to achieve this objective. Our members remain concerned by the very high levels of false positive LOR declarations and the move to more conservative inputs and assumption as well as the modelling process by AEMO. It’s critical for the PASA process that timely and accurate information is provided to the Market.	AEMO has included more explanation in this Final Consultation Paper as well in the Procedure to give participants more clarity on how the inputs and modelling assumptions are used in ST PASA. Re-designing the current ST PASA is out of scope for the changes to be implemented on 31 July 2025. Refinement of reserve level declarations will be considered in the ST PASA Replacement project.
2	Australian Energy Council (AEC)	A key concern for stakeholders is whether the issues raised in this consultation (that have been passed to the ST PASA replacement project) will be considered on their merits as part of that project. The AEC and its members believe that it is critical that these issues move through to the replacement project.	AEMO has recorded all issues raised, with those considered out of scope and relevant to the ST PASA Replacement project categorised to review once the ST PASA Replacement project consults on the ST PASA Procedure.
3	Australian Energy Council (AEC)	With respect to unit recall times, the submissions have made it clear that AEMO needs to provide more clarification as to how the procedures will operate.	AEMO has provided more information and developed scenarios to give clarity to stakeholders how recall period is used by AEMO and what is published.
4	AGL	AGL notes AEMO has proposed several changes following the AEMC Amending Rule. While the latest proposal does not include any material changes to the existing procedures for the preparation of ST PASA, we consider it is unclear what changes will be incorporated in the future as part of AEMO’s ST PASA Replacement Project. AGL requests further clarity regarding this project; specifically, whether the issues identified by stakeholders during the latest series of consultations will be addressed and the planned timing of the project.	AEMO has recorded all issues raised, with those considered out of scope and relevant to the ST PASA Replacement project categorised to review once the ST PASA Replacement project consults on the ST PASA Procedure.
5	AGL	We consider the ST PASA procedure would benefit from more clarity on what exactly is required from market participants and when. Additional examples illustrating a range of scenarios would be beneficial. Further clarity should be provided around reporting of recall times of less than an hour. We note AEMO has stated recall times should be reported to the nearest whole hour. We consider the procedure should clearly clarify whether recall times of less than an hour should be rounded up to an hour.	AEMO has included more explanation in this Final Consultation Paper as well in the Procedure to give participants more clarity on how the inputs and modelling assumptions are used in ST PASA. Recall periods can be up to 2 decimal places. For AEMO data consistency purposes, a bid rejection will occur for 3 decimal places.

No.	Stakeholder	Issue	AEMO response
6	AGL	We note existing bidding systems will need to be modified to accommodate the submission of recall times. Filling out updated recall times for every instance there is a change to generator conditions will be very onerous. It will require frequent communication with generator operations and trading teams. A single change to generator timings would cascade across a range of bidding system inputs. The additional administrative burden would equate to a material ongoing resourcing requirement.	The recall period needs to be amended only if a material change to the outage plan occurs. Participants can apply their judgement on this. Recallable capacity with relatively short recall during a period with reserve conditions requires careful review of the recall period.
8	Origin	We consider AEMO should provide further clarification around the intended use of generator recall information. If a mandatory reporting requirement were to be explored, we strongly recommend AEMO conduct cost-benefit analysis and clearly articulate how the benefits outweigh the costs given the potential for significant administrative burden on market participants.	AEMO has provided a table within the ST PASA Procedure to guide participants on how the recall period information is used within the ST PASA system. This final consultation paper and the updated ST PASA Procedure explain how AEMO implements the <i>Amending Rule</i> .
9	Alinta Energy	We support the draft ST PASA Procedure, noting that the scope of changes at this point is necessarily narrow due to the commencement date of the rule in July next year. We do however reiterate the concerns raised by some participants during this consultation that there is no timeline for AEMO to consult on more substantive changes as part of the ST PASA replacement project and request that AEMO consider and provide further clarity in this matter.	AEMO consultation on the ST PASA Replacement Project will include concerns raised by participants in this consultation that are in scope.
10	Mercuria	Mercuria would like to reiterate the importance of AEMO's role not just of operating the system, but of providing information to industry to assist them with decision making – with the system transitioning to one dominated by energy-limited battery and variable renewable resources, it is critical that AEMO address current gaps in information provision in these areas.	AEMO updated the ST PASA Procedure including relevant information on how PD PASA and 6-day PASA model bi-directional units (BDUs) as well as the modelling limitations in the current PASA design.
11	Mercuria	AEMO's response that "PASA availability is not collected for semi-scheduled generation" is unsatisfactory given the request was for a PASA equivalent technical availability measure, specifically the lesser of UPPERMWLIMIT and that informed by ELEMENTSUNAVAILABLE. Changes to PASA are few and far between – semi-scheduled information has deficient for more than 10 years, and we cannot afford for this to remain the case for another 10 years.	AEMO has provided clarity in the Final Procedure that: <ul style="list-style-type: none"> • modelling assumptions for scheduled generators and bidirectional units and semi-scheduled generators. This includes additional explanation that <ul style="list-style-type: none"> – ST PASA only includes scheduled and semi-scheduled generating units, bidirectional units (gen-side) and WDR – ST PASA excludes scheduled loads and bidirectional units (load-side) – ST PASA is only capable of modelling Daily Energy Constraints, and for BDUs only the generation side is modelled.
12	Mercuria	Mercuria would like to highlight that there is no forward-looking measure of semi-scheduled technical availability, and as such no visibility into outage plans for these assets. It is imperative that participants be able to form a view	From 31 July 2025, DUID availability reports will be published. DUID availability reports will contain Available Capacity, PASA Availability and Recall Period for all

No.	Stakeholder	Issue	AEMO response
		on outage rates, and interrogate upcoming asset outage schedules – this is done at length for scheduled assets but is not currently possible for semi-scheduled generators.	<i>scheduled resources</i> (These reports will be published half hourly in the PD PASA period and hourly in the 6-day PASA period). Hence participants will have the visibility of the availability of semi-scheduled generation up to 7 days ahead.
13	Mercuria	AEMO should be publishing BDU energy utilised per interval in PD and STPASAs tables. It is a simple matter of aggregating outputs, which AEMO does in PASA and elsewhere, and should be a straightforward enhancement.	This is out of scope for changes to be implemented on 31 July 2025. There is no NER provision supporting this requirement. AEMO might consider this as part of the STPASAs replacement project.

