# Projected Assessment of System Adequacy Compliance Bulletin

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AUSTRALIAN ENERGY REGULATOR

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# 1 Introduction

The AER has published this compliance bulletin to assist Market Participants to comply with critical Projected Assessment of System Adequacy (PASA) obligations under the National Electricity Rules (NER).

The PASA is the principal method of indicating to AEMO and Market Participants a forecast of the overall balance of supply and demand for electricity in the National Electricity Market (NEM). This allows AEMO to forecast the adequacy of the power system to stay within the reliability standard.[1] PASA submissions are used by AEMO to forecast capacity (supply) in the market over the coming days, months and years.

The objective of the PASA is to ensure that participants are properly informed to enable them to make decisions about supply, demand and outages of transmission networks.[2] The PASA process ensures sufficient information is published to enable the market to operate effectively with a minimal amount of intervention by AEMO.[3]

The ongoing, overarching obligation to ensure all information is up to date is set out in NER clause 3.13.2(h), which requires Market Participants to notify AEMO of any changes to submitted information within the times prescribed in the timetable published by AEMO.[4]

AEMO prepares PASA over 2 timeframes:

- Medium Term PASA (MT PASA) covers up to 36 months from the Sunday after the day of publication with a daily resolution (clause 3.7.2)
- Short Term PASA (ST PASA) covers each 30-minute period (or such shorter period as determined by AEMO) in at least 7 trading days from and including the date of publication (clause 3.7.3).[5]

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1 The reliability standard is a measure of the effectiveness, or sufficiency, of installed capacity to meet demand in the NEM. It is defined in clause 3.9.3C(a) of the NER and is described further in the Reliability Standard Implementation Guideline, amended and published by AEMO on 31 July 2025.

2 NER cl. 3.7.1(b). The 'PASA objective'.

3 NER cl. 3.7.1(d).

4 The spot market operations timetable is published by AEMO under clause 3.4.3 for the operation of the spot market and the provision of market information.

5 The ST PASA timeframe was updated in July 2025 following the AEMC's rule change determination released in 2022. See section 2 of this compliance bulletin for more detail on the ST PASA timeframe.


## MT PASA

MT PASA assesses the adequacy of expected electricity supply to meet demand across the three-year horizon through regularly identifying and quantifying any projected failure to meet the reliability standard.

MT PASA assessment is carried out weekly using 2 different model runs: the Reliability Run and the Loss of Load Probability Run.[6] Each week, participants must submit forecasts of availability to AEMO for the next 36 months, commencing from the first Sunday after the latest MT PASA run.

The main objective of the Loss of Load Probability Run is to determine which days have higher relative risk of loss of load to help participants schedule outages outside of these periods and indicate when AEMO may be required to direct or contract for reserves under the Reliability and Emergency Reserve Trader (RERT). MT PASA outputs produced by AEMO in the MT PASA Reliability Run include identification and quantification of:

- any projected failure to meet the reliability standard as assessed in accordance with the Reliability Standard Implementation Guidelines (RSIG)
- projected violations of power system security
- forecast interconnector transfer capabilities
- information on constraints that may be binding on generation or load.[7]

The MT PASA timeframe is critical to AEMO's early detection of low reserve conditions (LRC) and forward planning. AEMO identifies LRC based on determined capacity reserve levels and may respond depending on the extent of projected supply shortfall and the projected timeframe.[8]

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6 The MT PASA Reliability Run serves to identify and quantify potential reliability standard breaches and assess aggregate constrained and unconstrained capacity in each region, system performance and network capability. The MT PASA Loss of Load Probability Run serves to assess days most at risk of load shedding. Both are conducted weekly. More information on the reliability run can be found in AEMO's MT PASA Process Description.

7 The MT PASA outputs produced by the reliability run are specified in the NER clause 3.7.2(f)(6). More information on MT PASA outputs can be found in AEMO's MT PASA Process Description.

8 AEMO, Reliability Standard Implementation Guidelines, Australian Energy Market Operator, 31 July 2025.

We expect participants to apply the same level of rigour to determining, submitting and updating MT PASA inputs as is applied to ST PASA inputs.

## ST PASA

AEMO uses ST PASA results to identify lack of reserve (LOR) conditions to inform its decisions about whether market intervention is required to maintain a reliable and secure electricity system. AEMO will seek a market response from participants as a priority where possible and, as a last resort, utilise its safety net mechanisms such as the RERT mechanism, issuing directions or more disruptive actions such as load shedding.

AEMO uses the available capacity and daily energy availability submitted by participants in ST PASA to calculate regional reserve values. This process also takes into account 50% probability of exceedance (POE) demand forecasts, LOR threshold levels and network constraints representing the power transfer capability of the transmission network, including planned network outages.

AEMO's main use for the PASA availability input in the ST PASA timeframe is to assist it to identify capacity that could be made available by a Market Participant above that offered in the market to assist it to determine which units are, or could be, available for direction. AEMO does not use PASA availability in reserve calculations in the ST PASA timeframe.

# 2 PASA Compliance Bulletin Purpose

This compliance bulletin sets out participants' key obligations for communicating, regularly updating, and providing information for MT and ST PASA. Participants should review their practices in light of the information set out in this compliance bulletin and the associated compliance checklist[9] and update them as appropriate.

This bulletin is not a substitute for any provisions of the NER or an exhaustive statement of the AER's expectations. It is the responsibility of participants to understand and comply with all PASA obligations under the NER, some of which can attract substantial civil penalties, and to make decisions about how best to operate, guided by independent legal advice where appropriate.

Participants sometimes contact the AER seeking clarification of NER obligations relating to PASA. We encourage such communication, which along with our ongoing monitoring and compliance work, will assist us to determine whether further AER guidance may be appropriate or to inform our policy position. Seeking clarification is not, however, a substitute for independent legal advice.

This guide does not have legal force. The AER cannot provide a definitive interpretation of the relevant legislation because that is the role of the Courts. The AER will approach each potential compliance and enforcement matter on a case-by-case basis, considering all relevant circumstances, and by applying the factors set out in our Compliance and Enforcement Policy.[10]

AEMO has procedures and process descriptions for PASA covering the short and medium term. For more technical details about PASA inputs and AEMO's uses for various inputs that are not covered in this bulletin, we encourage participants to review the PASA resources on AEMO's website.[11]

This bulletin outlines:

- requirements around the accuracy and timeliness of submissions across ST and MT PASA timeframes
- changes to the timeframe for ST PASA
- changes to MT PASA to include unit state and unit recall submissions
- requirements around monitoring and submission of available capacity for ST PASA, PASA availability across ST and MT PASA, and energy constraints and availability for energy-constrained plants for ST and MT PASA.

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9 AER, PASA Compliance Checklist, 29 August 2025.

10 AER, Compliance and Enforcement Policy, Australian Energy Regulator, 13 July 2021.

11 AEMO, Projected Assessment of System Adequacy, Australian Energy Market Operator.

# 3 PASA obligations

## MT PASA

NER clause 3.7.2(d) requires a Scheduled Generator or Market Participant to submit the following MT PASA inputs:

- PASA availability of each of each scheduled generating unit, scheduled bidirectional unit (BDU), scheduled load or scheduled network service for each day taking into account the ambient weather conditions forecast at the time of the 10% PoE peak load (as described in AEMO's MT PASA Process Description):
  - for a 36-month period in respect of each scheduled generating unit and scheduled BDU
  - for a 24-month period in respect of each scheduled load or scheduled network service
- weekly energy constraints applying to each scheduled generating unit, scheduled BDU or scheduled load for a 24-month period.

NER clause 3.7.2(d1) requires a Scheduled Generator or Market Participant to submit the following MT PASA inputs for each scheduled generating unit for each day:

- the unit state, which must distinguish between a physical and economic reason for unavailability in accordance with the RSIG as appropriate
- the unit recall time, if required by AEMO for a unit state as specified in the RSIG.

## ST PASA

NER clause 3.7.3(h) requires a Registered Participant to submit the following ST PASA inputs:

- available capacity of each of the Registered Participant's scheduled resources in each relevant 30-minute period (or such other period specified in the ST PASA Procedures)
- PASA availability of each of the Registered Participant's scheduled resources in each relevant 30-minute period (or such other period specified in the ST PASA Procedures)[12]
- energy constraints or wholesale demand response (WDR) constraints for scheduled generating units, scheduled BDUs, scheduled loads or WDR units
- any other information set out in AEMO's ST PASA Procedures.[13]

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12 New rules integrating price-responsive resources in the NEM, in particular new obligations for voluntary scheduled resources (VRSs) to submit energy constraints in the ST PASA timeframe, come into effect on 27 May 2027. We encourage participants to familiarise themselves with the upcoming changes and to prepare for their introduction accordingly, including by monitoring and participating in any AEMO consultations, as relevant.

13 AEMO prepares the ST PASA Procedures pursuant to subparagraph 3.7.3(c) of the NER.

The values submitted to AEMO across both PASA timeframes must be submitted in accordance with the timetable and must represent the participant's current intentions and best estimates.[14]

Where a scheduled generating unit, scheduled BDU, scheduled load or WDR unit is energy constrained (such that it has fuel to run, but not at maximum capacity across the entire trading day), NER clause 3.7.3(h)(2) requires the relevant Registered Participant to convey this to AEMO through ST PASA energy constraint submissions. The ST PASA process prioritises the allocation of fuel-constrained plant to periods of low surplus reserve.

# Other relevant obligations

Demand Response Service Providers (DRSP) are required to submit available capacity inputs to AEMO for the purposes of ST PASA.[15] The AER's Wholesale Demand Response Participation Guidelines[16] (and the related determination) set out the factors that a DRSP must consider when submitting available capacity, and other relevant obligations.

Scheduled Generators are required to advise AEMO of their intention to self-commit and synchronise or self-decommit and de-synchronise a generating unit.[17] Clauses 4.9.6 and 4.9.7 of the NER outline when and how often a Scheduled Generator should inform AEMO of its intentions for commitment and decommitment of a scheduled generating unit.[18]

Semi-Scheduled Generators are required under NER clause 3.7B(b) to submit to AEMO, in accordance with the timetable, the plant availability of each semi-scheduled generating unit for AEMO's use in the PASA process.[19] AEMO uses these submissions to determine the unconstrained intermittent generation forecast as it is required to prepare in accordance with clause 3.7.2(c)(4) for MT PASA. Under clause 3.7B(b), a semi-scheduled generator is required to:

- submit plant availability for each semi-scheduled generating unit as soon as it becomes aware that the plant availability of the unit is at least 6 MW below or above the nameplate rating of the unit
- notify AEMO as soon as it becomes aware of any changes to the submitted plant availability until the plant availability is no longer at least 6 MW below or above the nameplate rating of the unit.

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14 NER, cl. 3.7.2(d) and 3.7.3(h).

15 NER, cl. 3.8.2A(b).

16 AER, Wholesale Demand Response Participation Guidelines, Australian Energy Regulator, 22 October 2021.

17 NER, cl. 3.8.17(f) and 3.8.18(d).

18 The AER provides more guidance on clauses 3.8.17, 3.8.18, 4.9.6, and 4.9.7 in its NEM Readiness Guide.

19 The AER's Semi-Scheduled Generator Compliance Bulletin provides further information on the factors a Semi-Scheduled Generator should consider when submitting plant availability for use in the PASA process and other relevant obligations.

# 4 Maintaining accurate PASA submissions

Because participants submit inputs up to 36 months ahead of time for MT PASA and 7 days ahead of time for ST PASA, participants should promptly update their submissions to AEMO following any changes to plant capabilities, intentions or other relevant information. This is to ensure that submitted values remain consistent with the participant's current intentions and best estimates.

We consider that 'best estimates' does not mean best-case scenario. The requirement to provide best estimates and current intentions is focused on ensuring that Market Participants consider all relevant information available when formulating an estimate of the most reasonably likely availability and recall time. These estimates should take into consideration future intentions, plans and relevant experience from comparable past events. Estimates should be revised in line with any new information that becomes available, and submissions updated accordingly.

This includes when AEMO has identified LOR conditions over the ST PASA timeframe and issues an LOR notice. Participants should consider whether the LOR notice affects their decisions around scheduled maintenance or commercial approach and update PASA submissions accordingly for the ST PASA timeframe.

It is also important that participants with responsibilities under PASA obligations have a practice of continually monitoring current output or plant capabilities and comparing that to the pre-dispatch schedule and the relevant dispatch targets from AEMO. Where the current capabilities are unlikely to meet the pre-dispatch schedule or target, the participant should inform AEMO of this through rebids and, if appropriate, also by contacting AEMO's control room directly.

**Good practice for forward planning**

We are aware that many participants conduct daily and weekly team meetings across different areas of the business to discuss weather forecasts, plant availability and other relevant factors. This forward planning can promote a common understanding of the plant capability for the forecast conditions and whether the PASA offers submitted to AEMO should be revised in response. We consider this to be good practice and recommend that such communications should be common practice for all businesses.

Further, where there are third-party contractors performing operational and bidding roles for the Registered Participant, it is crucial that the Registered Participant sets up processes to ensure each third party has the relevant information required. The Registered Participant is still required to meet relevant obligations under the NER where third-party contractors are engaged.

We note there is increasing utilisation of automated systems in bidding by Market Participants. The use of these systems does not relieve participants of their obligation to ensure that PASA submissions reflect current intentions and best estimates as required by the NER.

# 5 ST PASA timeframe

ST PASA requires AEMO to cover each 30-minute period (or such shorter period as determined by AEMO in its ST PASA Procedures) in at least the 7 trading days from and including the day of publication.[20] AEMO seeks to meet this requirement by determining and publishing pre-dispatch PASA (PD PASA) and 6-day PASA, together referred to as ST PASA.

AEMO has been empowered with flexibility under clause 3.7.3(c) to update ST PASA so that it remains fit for purpose as the market develops, with an accompanying requirement to develop and publish procedures describing the ST PASA process.[21] These procedures must describe the inputs it prepares for ST PASA, the processes and methodology it will apply to produce the ST PASA information, and the detailed ST PASA information AEMO will publish to meet its requirements under the NER. The procedures must also describe the period to be covered by ST PASA and any other information AEMO considers necessary to implement the PASA objective.

Participants should maintain awareness of any updates by AEMO to the ST PASA Procedures as described in clause 3.7.3(c).

**ST and PD PASA are now combined**

Previously, ST PASA and PD PASA were separate timeframes. Following the 2022 rule change, PD PASA and ST PASA processes were combined and are now referred to collectively as ST PASA. This amendment was intended to improve the transparency and governance of the PD PASA process and improve consistency between the rules and what AEMO publishes.

PD PASA was not previously referred to in the NER. However, with the combination of the PD and ST PASA timeframes, ST PASA obligations now cover both timeframes. Participants are now required to continue to update ST PASA inputs during the pre-dispatch period to reflect any relevant changes to these inputs. This ensures that AEMO has the best information to inform its decisions about market intervention.

20 NER, cl.3.7.3.

21 See AEMC, Updating Short Term PASA for more information about the Updating Short Term PASA rule change.

# 6 Available capacity

Available capacity is submitted for ST PASA only. It represents the total MW capacity by a scheduled generating unit, semi-scheduled generating unit, scheduled BDU or scheduled load available for dispatch in each interval over the ST PASA timeframe (or maximum plant availability).

Many factors will be influential in determining a generator's available capacity, such as:

- current fuel quality[22] (availability should be reflected in the daily energy constraint)
- operational risks or technical limitations
- the historical performance of a generator in similar conditions
- local environmental limitations such as water temperature or air pollution
- local temperature and weather alerts.

Participants should have systems and processes in place to formulate an informed view of their assets and provide an accurate, reliable and contemporaneous estimate of their capability under the expected market conditions.

Participants should give consideration ahead of time to how market conditions will change across the day and submit available capacity values with a corresponding profile. This sculpted profile would show the greatest degradation of plant capability during periods where ambient conditions are expected to be the most adverse. Submitting values as described may reduce intraday rebidding due to changes in ambient conditions.

**Good practice for considering weather forecasts in available capacity**

Ambient weather conditions include factors such as air temperature, humidity, wind direction and speed, and dust storms. Participants may consider using equipment that can improve the maximum output capabilities during high ambient temperatures, such as evaporative cooling or fogging.

When considering weather forecasts, we recommend the use of localised weather forecasts rather than forecasts for the major regional load centre, where possible, because they should provide a more accurate representation of the likely conditions at the power station.

Participants should be checking local temperature alerts and plan accordingly.

[22] For example, coal stations may have a stockpile with a lower calorific value, which reduces the amount of maximum energy that can be produced.

# 7 PASA availability

PASA availability refers to a generating unit's physical plant capability (taking ambient weather conditions into account) and any additional physical plant capability that can be made available within a given recall period. This does not mean what would be available for dispatch, but what capacity could reasonably be made available within a given recall period.

While available capacity describes the total MW amount that is available for dispatch, PASA availability refers to what could be made available within a recall period specified by the Market Participant. AEMO compares PASA availability to available capacity to identify additional generating unit capacity that is, or may be, available for direction.

**The previous definition of PASA availability**

In the 2022 ST PASA rule change, the definition of PASA availability was updated. Previously, the definition referred to physical capability within 24 hours. The new definition refers to a "given recall period".

The recall period is defined by AEMO in its ST PASA Procedures as 7 days for ST PASA. AEMO does not use recallable plant capability with recall periods greater than 7 days, or 168 hours, for operational decision making in ST PASA.

The inclusion of a recall period in PASA availability submissions allows participants to communicate to AEMO the number of hours within which MW capacity can be recalled. We consider that participants should accurately reflect the amount of capacity and the number of hours within which it could be recalled in its PASA submissions.[23]

We recognise there may be instances where participants have more than one option for bringing back capacity with different recall times (for example, where there is more than one outage and there is an option to bring back capacity in tranches with different recall times). In this situation, participants should submit capacity available in the earlier timeframe. We also encourage participants to observe market events and ensure that they alert AEMO to extra capacity that could be made available where an LOR is declared.

To reflect charge times, participants with BDUs are able to submit the time required to charge from fully discharged state to fully charged state at the ramp rate, in hours, as the recall period.

We consider that participants should include capacity in ST PASA availability if they could source fuel (and transport, if applicable) within the ST PASA timeframe or as specified in their recall time submission. This includes, for example, amendments to the conditions of a participant's current fuel supply contracts (e.g. gas take-off rates) which may be possible within the submitted recall time.

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[23] AEMO's ST PASA Procedure provides more detail on the ST PASA Process, including AEMO's interpretation of recallable capacities and recall periods.

We understand from participants that where a direction from AEMO is issued (or even contemplated), short-term fuel contracts can become more accessible. If it is reasonable to expect that the fuel could be secured if the participant was under direction from AEMO, then the capacity should be included in ST PASA availability. Any risks to attaining this fuel can be communicated to AEMO through the rebid reason field or by direct contact with AEMO's control room.

We recognise that there are situations where there is no possibility or reasonable expectation that fuel will be available in the ST PASA timeframe (for example, some hydro generators which have no access to additional water). In those instances, the capacity which would require that fuel for operation should not be included in ST PASA availability submissions because the fuel supply could not be replenished or become available within a recall period that fits within the ST PASA timeframe.

**Good practice for determining the value of PASA availability for ST PASA**

We understand that a common approach taken by participants to determining the value of PASA availability for the ST PASA process is to use available capacity as the basis of the PASA availability value and add any additional capability that can be made available within a given recall period.

As required by clause 3.7.3(h), ST PASA availability values are based on current intentions and best estimates. We consider that the participant's submission under clause 3.7.3(h)(1) should represent what it anticipates will be physically available given the information at hand when the submission is made (regardless of cost). If that information changes, the participant should update the PASA availability submission.

In 2023, the Federal Court found that a Market Participant breached the NER by failing to disclose to AEMO that the full capacity of its power station was available during heat wave conditions in February 2017. AEMO had declared an LOR 3 event and the Market Participant did not disclose to AEMO that one of the generators at its power station was capable of being made available on 24 hours' notice. As a result, AEMO was unaware it had the ability to issue a direction to the Market Participant to make the full capacity of its power station available.[24]

The PASA availability definition has now changed to refer to physical capability within a recall period specified by the Market Participant, rather than a set 24-hour period. Participants must now submit physical capability reflecting both commercial availability and technical availability that can be made available within a given recall period within the ST PASA timeframe. While the PASA availability definition has changed, we consider that the accurate and timely updating of plant capacity in ST PASA availability within the given recall period is crucial for AEMO's ability to forecast supply in the market. We encourage all participants to closely review their practices in line with PASA obligations in the NER and AEMO's ST PASA Procedures.

[24] *Australian Energy Regulator v Pelican Point Power Ltd (No 3) [2024] FCA 277*. See AER, Pelican Point Power Limited penalised $900,000 for National Electricity Rules breaches during 2017 heat wave, news release, Australian Energy Regulator, 27 March 2024..

In relation to the MT PASA timeframe, we consider that Market Participants should update PASA availability as soon as they become aware of any changes in availability. MT PASA availability values should be submitted based on current intentions and best estimates and regularly updated as availability changes. This includes current intentions and best estimates for new units coming online, units being decommissioned and expected outages.

Plant availability for each semi-scheduled generating unit must be submitted as soon as the Semi-scheduled Generator becomes aware that the plant availability of the unit is at least 6 MW below or above the nameplate rating of the unit.[25]

We recognise that some participants with batteries have entered System Integrity Protection Scheme (SIPS) reserve contracts with AEMO over various periods. Where such a contract is in place, participants may reflect SIPS reserve capacity in PASA availability submissions as follows:

- for MT PASA – bid capacity excluding the SIPS reserve capacity, so that this is reflecting the supply condition available to the market more accurately
- for ST PASA – bid capacity including the SIPS reserve capacity, so this reflects capacity available to AEMO for direction.

[25] NER cl.3.7B(b)(1).

# 8 Unit state and recall time in MT PASA

As a result of the 2022 rule change, participants are now required to provide their unit state in the form of a reason code and, for applicable reason codes, 'unit recall times', alongside PASA availability and weekly energy constraints from the next Sunday for a 36-month period.[26]

- Unit state describes a unit's availability or unavailability and the reason for its availability or unavailability. The reason must indicate whether the unit is unavailable for economic reasons (e.g., due to anticipated low prices making operation uncommercial) or physical reasons (e.g., planned maintenance).
- Unit recall time describes the time the participant expects the unit to take to return the unit to full availability under 'normal conditions'. AEMO determines if this is required and is specified in the RSIG.

The rule builds on existing MT PASA requirements, which require generators to indicate how many megawatts (MW) they could make available each day over the MT PASA horizon via PASA availability. These inputs are provided alongside weekly energy constraints from the next Sunday for a 36-month period. AEMO determines which unit states will require a unit recall time to be submitted in its MT PASA Process Description.[27]

Unit state and unit recall times should be submitted to AEMO based on best estimates and current intentions.

**Good practice for providing reason codes for MT PASA**

We encourage all participants to review AEMO's RSIG and MT PASA Process Description and ensure that their reason codes are accurate and correspond to the unit state in order to provide satisfactory explanation for PASA availability to AEMO.

For example, participants intending to mothball a unit should update unit state according to the specific code[28] determined by AEMO in its MT PASA Process Description. For mothballed unit states, submitting a recall time is mandatory. The recall time should reflect the type of storage – that is, wet or dry. The recall time should be submitted according to current intentions and best estimates and updated as changes to those intentions and estimates occur.

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26 AEMC, Enhancing information on generator availability in MT PASA, Australian Energy Market Commission,18 August 2022.

27 AEMO's MT PASA Process Description details unit states, shortform codes, reasons, and recall time requirements. Participants should regularly review the process description.

28 For example, the shortform code for a mothballed unit state in AEMO's MT PASA Process Description is 'Mothballed'. AEMO, MT PASA Process Description, Australian Energy Market Operator, 24 April 2023, p. 9.

# 9 Energy constraints

In the 2022 rule change, ST PASA rules updated the definition of 'energy constraint'. An energy constraint is a limitation on the quantity of energy (expressed in MWh) that a scheduled generating unit, scheduled BDU or scheduled load can produce or consume in a specified period.[29]

The AEMC considered that the previous definition of energy constraint unnecessarily referred to fuel types and didn't refer to constraints on load when consuming energy. It also considered that the time period for energy constraint should not be defined in the NER as it is used in different parts with different applicable periods across the NER. Instead, the period for energy constraints in the context of ST PASA is specified by AEMO in its ST PASA Procedures.

The submission of energy constraints is necessary for AEMO's identification of LOR conditions in the ST PASA time horizon and actions to respond to those conditions. As the fuel availability situation in the NEM is constantly evolving, it is critical that participants monitor their fuel availability and update PASA energy constraint submissions to reflect any changes. This will ensure PASA forecasts are made using the most accurate information.

During the June 2022 market events, challenges with fuel availability and quality impacted some participants' ability to operate.[30] We remind participants that, although fuel limitations have historically been considered most relevant to hydro generators, energy constraint submissions are technology-neutral obligations. Where relevant, other types of generators with other fuel sources (such as coal, fuel oil, gas or other) should be submitting accurate and timely energy constraints.

The new definition of energy constraint encompasses constraints other than fuel limitations. We encourage participants to monitor for other energy constraints affecting their units. This includes the submission of energy constraints for scheduled BDUs due to charging limitations. We consider partial or full outages of BDUs should be reflected in the maximum energy constraint throughout the duration of the outage.

Participants should consider a number of factors when determining their daily or weekly energy constraints. These factors are specific to generator type and may include (but are not limited to):

- transportation
- on-site storage
- refuel rates
- coal quantity and mine constraints

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29 Previously, an energy constraint was defined as 'A limitation on the ability of a generating unit or group of generating units to generate active power due to the restrictions in the availability of fuel or other necessary expendable resources such as, but not limited to, gas, coal, or water for operating turbines or cooling.'

30 See more in the AER's June 2022 market events report.

- gas pipeline linepack.

**Good practice for submitting energy constraints to AEMO**

We encourage participants to consider the following guidance on how to submit energy constraints to AEMO:

1) Ensure consistency of submissions in ST PASA and MT PASA, recognising that these timeframes are linked. Any energy constraints that apply at the end of the ST PASA timeframe will also apply at the start of the MT PASA timeframe and submissions to the 2 processes should reflect this.
2) If fuel is limited or not available (e.g. due to spot market gas shortages or coal supply/quality issues), consider:
   - the time period that the constraint will likely apply for and reflect the constraint in your submissions over that whole period – it is not sufficient to submit the constraint for the next day or 2, it should be submitted across the whole period where the constraints are likely to continue
   - how fuel will become available again – that is, will the fuel supply be fully replenished immediately (a step change), or will it return gradually – submissions should accurately reflect this.
3) Submit energy constraints that represent a probability-weighted, most likely view of energy availability, rather than an optimistic view as this alerts AEMO to potential risks. Where the view changes and the energy constraint submitted is no longer the most likely view, submit updated inputs to AEMO.
4) For MT PASA, submit sustainable weekly constraints that reflect the medium-term capability of the plant, not a constraint for the week considered in isolation.
5) Provide AEMO with qualitative information relevant to energy constraint submissions. This can be done using the rebid reason field or, if the situation cannot be accurately reflected that way, by contacting AEMO.
6) Ensure you have considered energy constraints other than fuel limitations that may constrain a unit.

A submission of zero for the ST PASA energy constraint means that the generating unit is fully constrained (for example, it has no fuel).[31] If no value is submitted (i.e. a null entry), ST PASA interprets this as the generation unit is not constrained. Similarly, for MT PASA, a zero submission for the weekly energy constraint under clause 3.7.2(d)(2) means that the generating unit is fully constrained. We encourage participants to review their processes to ensure they are consistent with this approach.

As for other ST and MT PASA inputs, the energy constraint submission must represent current intentions and best estimates. Accordingly, we expect participants to base any

[31] Note this approach changed with the introduction of 5-minute settlement. We encourage participants to update their systems and processes accordingly.

submissions on what they would reasonably expect to occur given the current information and past experience, rather than a best or worst-case scenario.

For example, a gas generator should take planned transport outages into account when determining its daily energy availability, but it should not assume that there will be a pipeline issue affecting gas delivery, unless there is information to suggest this is the case.

We also expect participants to be mindful of any environmental requirements that affect the operation of their plant when determining daily energy availability values.