

High Level Implementation Assessment (HLIA)

ST PASA Procedure and Recall Period

2024

Prepared for stakeholders by
Wholesale Reform Delivery for
feedback on how the rule change
may be implemented by AEMO





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1 Introduction

1.1 Introducing greater flexibility into ST PASA

In May 2022, the AEMC made a final determination to amend the NER to introduce greater flexibility to the short term projected assessment of system adequacy (ST PASA), revise some ST PASA definitions and obligations and require the commencement of the new ST PASA from 1 July 2025.

The National Electricity Amendment (Updating Short Term PASA) Rule 2022¹ (Amending Rule) introduced a principles-based approach for AEMO to administer ST PASA, included an obligation to publish a ST PASA Procedure, and make changes to ST PASA publication timetable, the definition of 'energy constraint', 'wholesale demand response constraint' and PASA availability in accordance with new NER 3.7.3.

This document sets out the high-level impact assessment of the Rule's implementation arrangements by:

- Publishing new Procedures which will not materially change the operation and administration of ST PASA other than in relation to the new information requirements;
- Outlining how AEMO's system and related changes will occur; and
- Enabling participants and other stakeholders to understand and plan for system, process and operational changes as required to implement the Rule through consultation and key implementation dates.

1.1.1 ST PASA Replacement project

AEMO is separately integrating a new ST PASA system to replace the existing ST PASA system. This new system will involve significant changes to processes and procedures, that will involve detailed engagement and consultation with participants. This will be completed through the ST PASA Replacement project².

1.2 High Level Implementation Assessment (HLIA) document context

The approach taken in developing this HLIA is to decouple the implementation of the ST PASA Procedure and Recall Period project from the integration of the ST PASA Replacement project.

The purpose of this document is to provide information to participants on how the changes to implement the Rule will be undertaken by AEMO. This is intended to assist and inform participants in the development of their own implementation timelines and impact assessments.

1.3 HLIA document purpose

This HLIA is guiding AEMO's development of the ST PASA Procedure and Recall Period and describes how AEMO will undertake the changes across its business.

¹ <https://www.aemc.gov.au/rule-changes/updating-short-term-pasa>

² <https://www.aemo.com.au/initiatives/trials-and-initiatives/st-pasa-replacement-project>

Specifically, this HLIA will outline:

- Which procedures are impacted for change and what changes are required.
- How AEMO will publish forecasts of the available capacity of individual scheduled resources as well as forecasts of PASA availability of individual scheduled generating units, scheduled bidirectional units, scheduled loads, scheduled network services and wholesale demand response units.
- The integration from the changes to the definitions of PASA availability and energy constraint into AEMO's documents and system, including how AEMO proposes new recall period would be submitted in bids to supplement PASA availability.

1.4 Changes between the Draft and Final HLIA

AEMO published a Draft HLIA for ST PASA for consultation on 3 September 2024 for stakeholder feedback. Written feedback was received from one participant, Origin Energy.

Following that feedback and AEMO's continued consideration of ST PASA's implementation, the following additions have been made to the Final HLIA.

1. Implementation of ST PASA will be consolidated with the implementation of Enhanced Reserve Information (ERI). Section 6.1 Timeline delivery and readiness milestone dates are aligned to milestone dates for ERI implementation.
2. Section 7 Industry Readiness Approach has been updated to reflect the consolidated delivery approach.

1.5 Key implementation dates

AEMO must have the required ST PASA Procedure published by **30 April 2025**, three months before the commencement of the Amending Rule to provide industry time to comply with the ST PASA Procedure before its effective date. The effective date is **31 July 2025**, when all documents need to be updated and system updates are live.

Table 1 Timetable for key implementation dates

Stage	Timeline
AEMC Final Rule Determination	05 May 2022
AEMO to publish Final High Level Implementation Assessment	15 October 2024
AEMO to publish Consultation Paper	2 September 2024
AEMO to publish Technical Requirements (draft)	October 2024
AEMO to publish ST PASA Procedure	March 2025
Rule Commencement	31 July 2025



1.6 Stakeholder feedback

AEMO received one response from Stakeholders, confirming the approach for industry testing and readiness to be combined with the ERI Reform. AEMO thanks all stakeholders for their engagement in this HILA process.

1.7 Stakeholder engagement

The NEM Reform Program supports affected market participants in each reform phase from implementation design, procedures development, solution delivery and through to industry testing. AEMO intends to keep interested stakeholders up to date on the progress of the changes through the following ways:

- [NEM Reform Forums](#)
- Initiative webpage: [AEMO | ST PASA Procedure and Recall Period](#)
- Mailbox: NEMReform@aemo.com.au

2 AEMO summary of key impacts

The diagram below depicts the key impacts to AEMO’s systems and processes impacted.

Figure 1 Summary of Impacts for ST PASA Procedure and Recall Period



Table 2 View of key AEMO impacts

Focus Area	Impact Description	Impact – External facing
Operate Energy Systems	Updates to existing documents and NEM reports Developing of new reports	Developing ST PASA Procedure Updates to existing document: <ul style="list-style-type: none"> • Reliability Standard Implementation Guidelines (RSIG) • Spot Market Operations Timetable • SO_OP_3703 Short term reserve management New definition of PASA availability

Focus Area	Impact Description	Impact – External facing
Operate Energy Markets	Publish documentation and information Updates to existing bidding interface applications	Changing bidding interface Changing NEM reports (MMS Data model update) New DUID Availability report

3 AEMO procedure impacts

To facilitate and meet the requirements of the Amending Rule, AEMO will be developing a new ST PASA Procedure to be consistent with new NER 3.7.3. AEMO is also proposing a consequential minor amendment to the Reliability Standard Implementation Guideline (RSIG), the Spot Market Operations Timetable and SO_OP_3705 Short Term Reserve Management as part of implementation.

Table 3 Overview of impacted documents

Type of document	Title	Effort required	Content to be changed	Due by
	ST PASA Process Description		This document will be superseded. Development of new ST PASA Procedure will replace this document.	
NER Required document	Reliability Standard Implementation Guidelines (RSIG)	Low	Consistent with the change to the NER definition of 'PASA availability', amend references to "24 hours" to refer to capacity that can be made available in a given timeframe within a 7-day outlook period, based on participant inputs to be made in accordance with the Procedures.	31 July 2025
NER Required document	Spot Market Operations Timetable	Low	NER clauses to be updated Amend include the current pre-dispatch PASA timeframe (which is not required in the timetable)	31 July 2025
NER Required document	SO_OP_3703 Short Term Reserve Management	Low	Amend to align with the new framework and remove Low Reserve Conditions analysis	31 July 2025

3.1 Development of ST PASA procedure

AEMO has commenced the development of the new ST PASA Procedures by using the content of the existing ST PASA Process Description³ as a base, and updating it to incorporate the requirements of the new NER 3.7.3. The material changes resulting from the Amending Rule are:

- Publication of available capacity for scheduled resources at an individual level (by DUID),

³ AEMO. 16 March 2012. ST PASA Process Description. https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/pasa/stpasa-process-description.pdf

- Incorporation in the ST PASA of capacity that can be made available on any notice period (shorter or longer than 24 hours) within the next seven days, which will necessitate a change in the input requirements for relevant scheduled resources.

The consultation for the Procedures⁴ does not include any material changes to the existing process for the preparation of ST PASA. AEMO is continuing to progress its ST PASA Replacement Project, and expects that this will lead to more extensive changes to the Procedures which will be consulted on through a separate consultation process.

The sub-sections below describe AEMO's proposal for each element of the Procedures under amended NER 3.7.3(c).

- how AEMO prepares inputs for ST PASA
 - forecast network constraints and notified network outages;
 - any other factors AEMO considers relevant having regard to the PASA objective.
- Processes and methodologies AEMO uses to produce the ST PASA information
- the detailed ST PASA information AEMO publishes regarding;
 - load forecasts at a range of probability of exceedance levels;
 - forecasts of the available capacity of individual scheduled resources; and
 - forecasts of PASA availability of individual scheduled generating units, scheduled bidirectional units, scheduled loads, scheduled network services and wholesale demand response units.
- the period to be covered by the ST PASA in the seven trading days from and including the day of publication, at a resolution of 30 minutes or any shorter period determined by AEMO; and
- any other information that AEMO considers reasonably necessary.

3.1.1 Consultation considerations

AEMO is consulting on key technical concepts and requirements for the new Rule, that form part of the consultations, namely:

- ST PASA inputs and information outputs (including publication requirements),
- Including the definitions for energy constraint and PASA availability,
- consideration of other ST PASA information that could enhance system adequacy forecasts.

3.1.2 Additional considerations or elements of implementation

The AEMC has incorporated changes made in the *Integrating Energy Storage Systems into the NEM* rule change into NER 3.7.3, which commenced on 3 June 2024.

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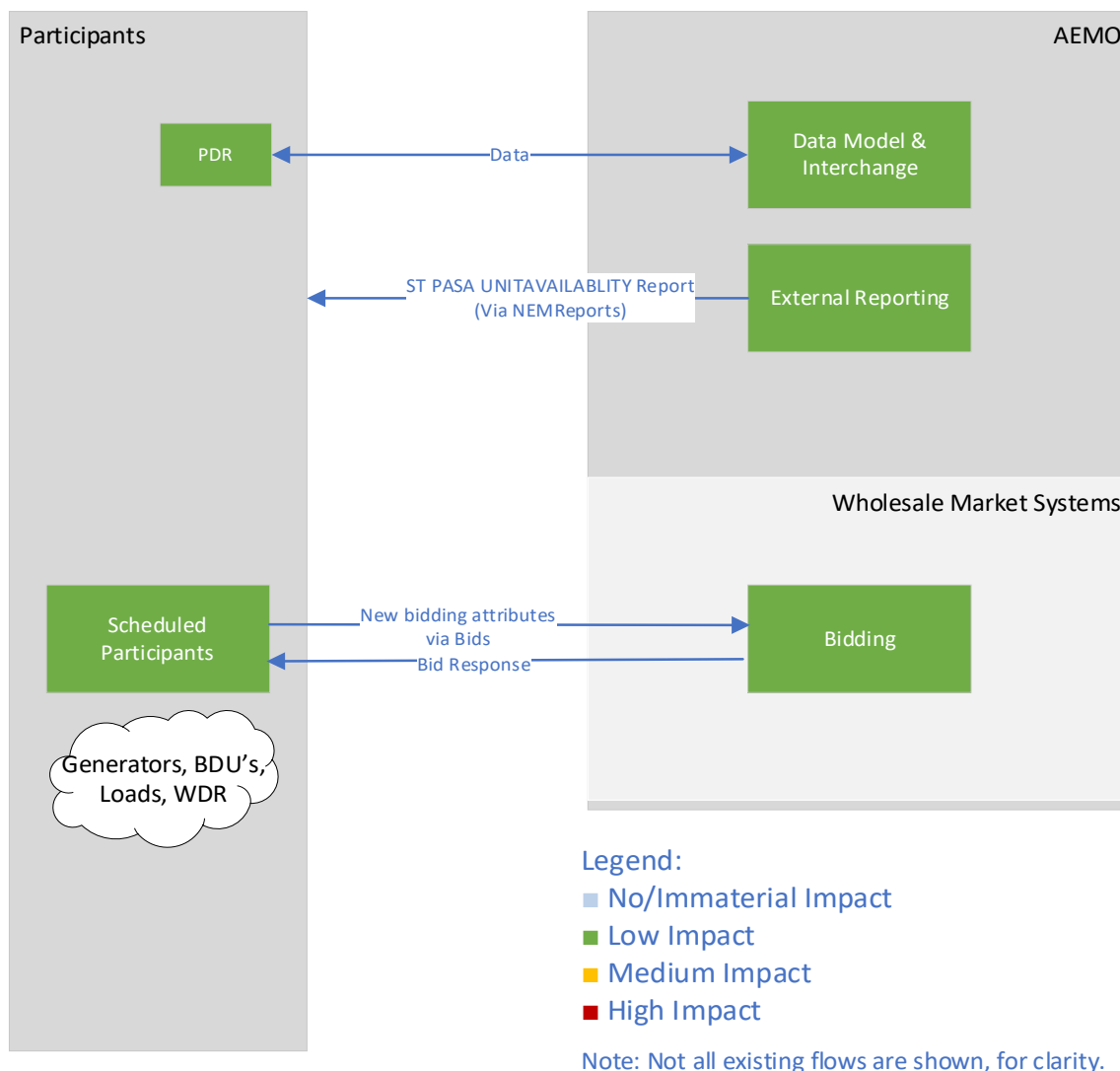


3.2 Consultation timeframe

Consultation Process	Indicative Dates
Procedure consultation workshop	24 July 2024
Feedback from stakeholders on Procedure consultation workshop	9 August 2024
Consultation Paper published	2 September 2024
Submissions due on Consultation Paper	30 September 2024
Draft marked up procedure published	28 October 2024
Submissions due on draft procedure	2 December 2024
Final ST PASA Procedure published	10 February 2025

4 System impacts

The following diagram depicts the system impacts associated with this initiative.



T 1 Tabular view of system impacts from ST PASA draft rule

AEMO System	Summary
<p>■ Low System Impact</p>	
<p>Reporting and Data Model</p>	<p>The existing Bidding Reports will extend to accommodate the new attribute and they will feed into the Participant Data Model to a corresponding field that will be added to the table BidOfferPeriod.</p> <p>A new Report STPASA_UNITAVAILABILITY will be published every 30-minutes to satisfy the AEMC requirement to: “improve the information provided to market participants by specifying that AEMO must publish availability and PASA availability information at a DUID level, as well as enabling AEMO to include additional information following consultation with stakeholders. This will better inform the market of generation availability, and allow market participants to make better decisions regarding scheduling planned maintenance and expected reliability and security conditions.”</p> <p>Proposed fields:</p> <ul style="list-style-type: none"> o Run_DateTime o Interval DateTime (Half-hour ended) o DUID o Generation Maximum Availability (MW) o Generation PASA Availability (MW) o Generation Recall Period (hours) o Load Maximum Availability (MW) o Load PASA Availability (MW) o Load Recall Period (hours)
<p>Settlements, Billing & Payments</p>	<p>A new Bidding Period attribute for Participant submissions, for Energy Bids for Scheduled Resources. This will be the number of hours a Unit would take to achieve the declared PASAAvailability MW value, for the given Trading interval.</p> <p>The attribute will be optional and a default value of 0 (zero) will be assumed where it is not provided. This will be interpreted as an immediate Recall.</p> <p>This will be affected for Bids to the NEM</p> <p>FTP API Webbidding interface</p>

5 Participant impacts

This section identifies a list of changes AEMO has identified and AEMO’s view of the impact on different participant types, based on the overall design. It does not address updates that participants may make within their systems to support business processes and given the diverse levels of system maturity and automation across participants, AEMO cannot predict the exact scale or nature of impacts for each participant. AEMO recommends that each participant perform their own detailed analysis based on the information contained within this HLIA.

Table 4 Indicative Participant change impacts

Impacted Participant type	Identified change
Generators (Scheduled and Semi-Scheduled); Integrated Resource Providers, Market Network Service Provider	Current process for bidding will continue, with recall period associated with the PASA availability added into processes All participants to provide the recall period in the new ST PASA time frame, or noting that entering null will be assumed to be immediate recall and automatically stored as zero.

6 Implementation pathway

6.1 Timeline

To provide sufficient time for AEMO and industry to implement the ST PASA Procedure, AEMO consultation will occur in Q4 2024 to Q2 2025. Concurrent to this consultation, the Technical Specification for recall period will be published so that participants can commence their system changes. The timeline also reflects the consolidated delivery approach for ST PASA and Enhancing Reserve Information (ERI).

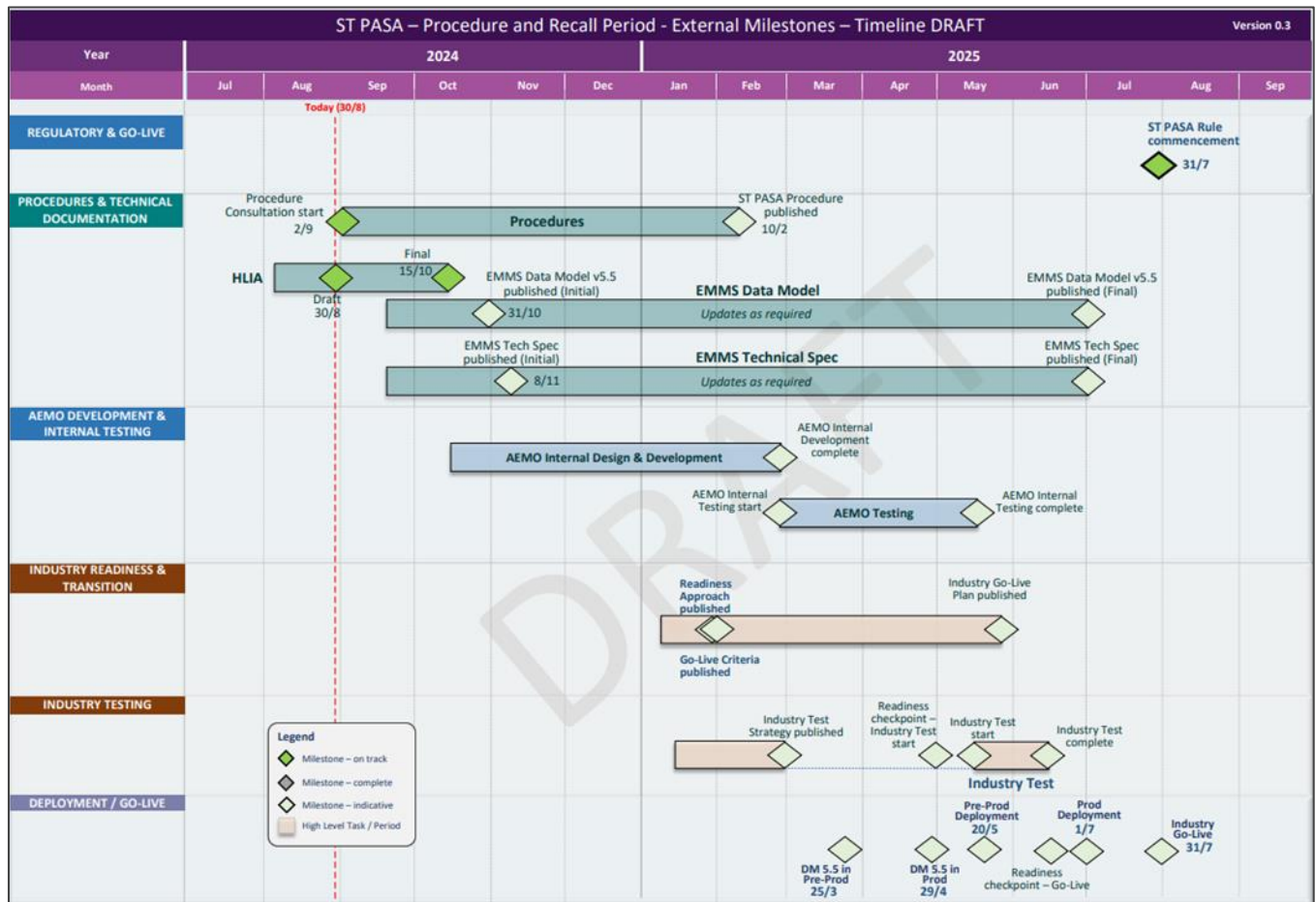


Figure 2 Timeline

6.2 Delivery Risks and Issues

AEMO has identified the following risks, noting that the project is in its early stages. AEMO will identify, monitor and manage risks as the project progresses, and proposes to report these via the Implementation Forum.

Table 5 Indicative assessment of delivery risk and issues

Identified Risk	Current Risk rating	Mitigation Strategy	Residual Rating
Delivery of ST PASA Procedure	High	Commence consultation in Q3 2024	Low
Dependency and overlap of ST PASA Replacement Project –for changes to new ST PASA Procedure to occur at the same time or overlap	Medium	Engage internally and externally with stakeholders so that changes to ST PASA Procedure from the two different projects do not overlap.	Low
Compressed timelines to meeting required rule commencement date	Medium	Commence consultation in Q3 2024	Low

Refer to Appendix A1 for risk rating descriptions.

7 Industry readiness approach

Based on AEMO’s decision to deliver the ERI and ST PASA Procedure and Recall projects as a consolidated delivery, this readiness approach has been updated to reflect the following:

- Technical specifications, Data Model release timings and industry test timeframes have been aligned to support industry participants impacted by both initiatives (with data model timings also aligned for FPP Financial Operations introduction).
- For upcoming readiness activities, Industry Test Strategy and Industry Go-live Plan, the intention is to create a single deliverable addressing both initiatives.
- Go-live criteria have been defined for each initiative separately, but AEMO intends to track and report on readiness as one.
- Industry readiness milestone dates for ST PASA to adopt equivalent milestone timeframes for ERI.

The readiness approach for ST PASA has been updated to reflect the consolidated delivery approach. Figure 3 provides the view of the combined readiness approach, consistent with the NEM reform readiness strategy and framework. Table 6 provides details on each component of the industry readiness approach.

The readiness approach assumes that AEMO and industry will prepare for ERI and ST PASA initiative implementations based on the current scope for each initiative. For ERI, refer to the High Level Implementation Assessment on AEMO’s ERI website⁵ for system and participant impacts. For ST PASA, changes are identified in section 4 System impacts and section 5 Participant impacts and that no additional system impacts will result from the ST PASA procedure consultation to be completed in February 2025.

⁵ <https://aemo.com.au/initiatives/major-programs/nem-reform-program/enhancing-reserve-information-project>

Figure 3 Consolidated industry readiness approach

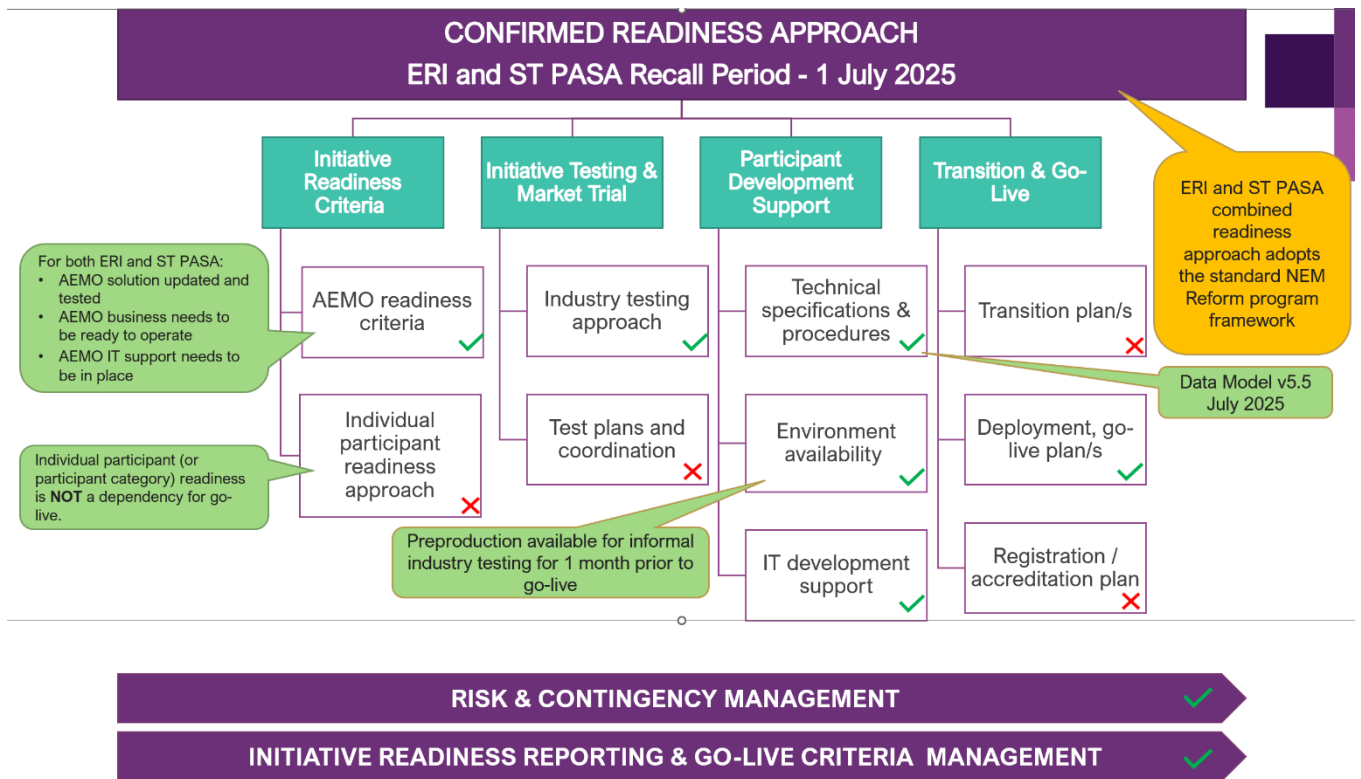


Table 6 AEMO Industry readiness approach for ERI and ST PASA

READINESS AREA	INITIAL VIEW OF INDUSTRY READINESS	
ERI – Initiative readiness criteria	Individual participant readiness approach	<ul style="list-style-type: none"> Individual participant (or participant category) readiness is not a dependency for go-live. However, rule commencement may require impacted participants to make timely system/process changes to comply with rule commencement 1 July 2025.
	AEMO readiness criteria	By the ERI rule commencement date (1 July 2025) AEMO's: <ul style="list-style-type: none"> solution needs to be updated and tested (Bidding, Dispatch, NEM Reports and Data Model changes) business needs to be ready to operate. IT support needs to be in place.
ST PASA – Initiative readiness criteria	Individual participant readiness approach	Individual participant (or participant category) readiness is not a dependency for go-live. However, impacted participants are obligated to make system/process changes to comply with rule commencement 31 July 2025 .
	AEMO readiness criteria	By the ST PASA rule commencement date, AEMO's: <ul style="list-style-type: none"> solution needs to be updated and tested (Bidding, NEM Reports and Data Model changes) business needs to be ready to operate. IT support needs to be in place.
Industry Testing	Industry test strategy	<ul style="list-style-type: none"> Industry test approach along with detailed timings will be confirmed with the issue of a combined Industry Test Strategy for both initiatives (31 Jan 2025*). Test release cycle for both ERI and ST PASA Recall Period will be combined as bidding changes required for both affect the same application. AEMO will allow a 1-month period, from 21 May 2024*, to conduct industry testing. Note, for ST PASA this is approximately 2 months prior to the rule commencement date and 1 month before technical go-live. This will allow participants to simultaneously test for both ERI and ST PASA:

READINESS AREA	INITIAL VIEW OF INDUSTRY READINESS	
		<ul style="list-style-type: none"> ○ Their bidding processes. ○ Their ability to ingest the updated data model and use the reports within their systems. ○ Capped energy availability by maximum storage capacity in Dispatch process (ERI only) ● Scoping and planning will occur in collaboration with industry.
	Test plans and coordination	<ul style="list-style-type: none"> ● Test plans are to be developed independently by impacted participants appropriate to own requirements. ● Industry Test Working Group (ITWG) sessions available for updates on testing progress and for additional support. Sign up
Participant development support	Procedures	<p>ERI:</p> <ul style="list-style-type: none"> ● no procedure consultations required <p>ST PASA:</p> <ul style="list-style-type: none"> ● Final rule obligates AEMO to publish ST PASA procedure by 30 April 2025, giving stakeholders 3 months to comply with the procedures prior to the rule commencing on 31 July 2025. AEMO intends to have completed the consultation and publish the procedure by 10 Feb 2025*. ● Procedure consultation process is planned between Sep 2024 to Apr 2025 and will NOT result in any system changes as it has been confirmed to be purely an administrative process consultation.
	Technical specifications	<ul style="list-style-type: none"> ● EMMS data model changes expected to be delivered in DM v5.5 for both initiatives. ● Initial technical specification available from 31 Oct 2024 with monthly updates as required through to go-live. ● DM Preproduction release – 25 Mar 2025 ● DM Production release – 29 Apr 2025 <p>For ST PASA only:-</p> <ul style="list-style-type: none"> ● EMMS Technical Specification with details of structural changes to bidding interfaces and generator availability for reporting available from 1 Nov 2024 through to go-live. ● Market Systems User Group (MSUG) sessions available for additional support. Sign up details.
	Environment availability	<ul style="list-style-type: none"> ● Preproduction will be available to support combined industry testing of ERI and ST PASA changes from 21 May 2025 for a period of 1 month. ● For ST PASA, there is a possibility that the test period may be extended if required, given test period commences 2 months prior to rule commencement. ● No additional development support environment deemed necessary for early testing as changes to AEMO's systems and data model requires only an incremental change to existing systems/data model. It is therefore expected that development support can be managed in the preproduction environment.
	IT development support	<ul style="list-style-type: none"> ● High Level Implementation Assessments (HLIA) have been published on AEMO's public website for each initiative. and . ● AEMO will run ITWG Q&A sessions during the Industry Test period to support participants. ● As the ST PASA solution will be deployed to Preproduction 2 months prior to rule commencement, allowing 1 month of industry testing, AEMO will review during the test period if support needs to be extended to support participant preparations or issue resolution. ● As required, AEMO will provide industry support via NEM Reform forums, information sessions, focus groups and daily stand-ups for affected participants. These engagements would be scheduled as the IT design and approach is formalised to support participants development.
Transition and go-live	Transition plans	<ul style="list-style-type: none"> ● No obligated transitional requirements for rule commencements
	Go-live plan	<ul style="list-style-type: none"> ● ERI and ST PASA will be deployed to the production environment as one combined release on 1 July 2025 to align to ERI rule obligation date.

READINESS AREA	INITIAL VIEW OF INDUSTRY READINESS
	<ul style="list-style-type: none"> • For ST PASA, this release represents technical go-live only. ST PASA industry go-live aligns to rule commencement of 31 July 2025. • One Industry Go-live plan for production release of both initiatives, in consultation with industry, to confirm detailed deployment and capability availability timeframes in the lead up to respective rule commencements including: <ul style="list-style-type: none"> ○ When data model will be populated with new/changed data and reports available. ○ For ST PASA, timeframes for when participant bids are to be finalised under current ruling and when participant bids will be required under new ruling. • Draft/Final plan to be published 13 May 2025 / 30 May 2025*
Registration or accreditation plans	<ul style="list-style-type: none"> • ERI and ST PASA rule changes do not indicate changes to registration or accreditation frameworks. • For ERI, additional registration data required from scheduled BDUs was made available from 1 July 2024 (via IESS initiative). Ongoing requirement to maintain registration data via annual data confirmation process is currently managed under BAU. • Accreditation Plans are not required as there are no changes to MDP / MP requirements
Risk & contingency management	<ul style="list-style-type: none"> • Will be developed in consultation with industry
Initiative readiness reporting & go-live criteria management	<ul style="list-style-type: none"> • Formalised participant readiness reporting is not required on the basis that there are no mandatory participant transition or preparation activities that if not performed will impact technical readiness for market or other participants • AEMO will report to industry, progress against confirmed L1/L2 industry readiness milestones for the combined initiatives on a regular basis through NEM Reform forums • AEMO will schedule formal checkpoints against go-live criteria for each initiative, 3 and 1 month prior to go-live, to provide assurance of implementation preparations, allowing time for finalising AEMO's and participants business preparations: <ul style="list-style-type: none"> ○ 3 months checkpoint – 11 Apr 2025* ○ 1 month checkpoint – 23 May 2025*
*Dates tentative	



A1. Impact ratings

Description of AEMO's reform impact ratings for industry systems, processes and documentation

Impact rating	Description
No impact	No change's to AEMO or industry systems, processes, guidelines, or procedures. Stakeholder consultation not required.
Immaterial	Immaterial administrative changes to AEMO procedures and/or guidelines, purposes of consistency. Immaterial changes or additions to existing business processes and/or technology systems. Stakeholder consultation not required.
Low	Minor changes, additions, or updates to AEMO procedures and/or guidelines, purposes of consistency. Minor changes, additions, or updates to existing business processes and/or technology systems.
Medium	Material changes or additions to AEMO procedures and/or guidelines, Significant changes or additions to existing business processes and/or technology systems. Stakeholder consultation required.
High	Significant changes, additions, or creation of new AEMO procedures, and/or guidelines, Significant changes, additions, or the creation of new business processes and/or technology systems. Stakeholder consultation required.