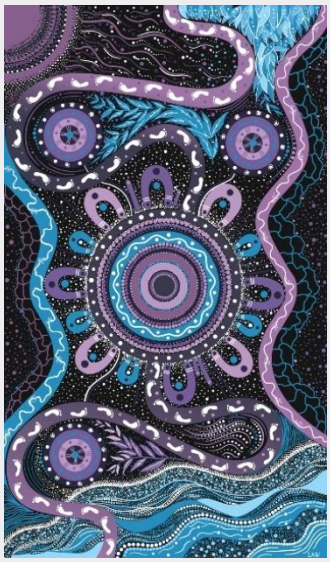
FINAL Implementation Assessment for Digital Lifecycle FY26 – RTMS Improvements

November 2025

Ref: IA-2025-05

Preliminary assessment of the changes, impacts and risks to implement a new initiative that will start addressing emerging issues and ongoing risks associated with the Real-Time Market Submission system.



We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO Group is proud to have launched its first Reconciliation Action Plan in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation - a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Important notice

Purpose

AEMO has prepared this document to provide preliminary information about the implementation of the RTMS Enhancements initiative.

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Version control

Version	Release date	Changes
1	15/09/2025	N/A
2	03/11/2025	Amended from Draft to Final version, following consultation. Added review of MPWG feedback. Updated information on approach to provisioning older data and data age threshold. Added further consultation processes.

Contents

1 At a glance

Problem	AEMO's Real-Time Market Submission (RTMS) system faces fast data growth causing slower database queries and increasing timeouts. With most stored data rarely needed, continued growth will push storage into costlier tiers and could require significant system upgrades.
Proposed solution	In a first stage of work to address this issue, AEMO plans to cease storing some RTMS data older than a pre-defined number of days (the data age threshold) in the RTMS database. The data will continue to be stored in AEMO's Enterprise Data Platform (EDP). This change will help manage performance and costs for the RTMS system. Following consultation on the Draft IA, AEMO is investigating an alternative approach to supplying Market Participants with RTMS submission data older than the data age threshold, which it will consult on through the Industry Testing Forum (ITF) in November 2025.
Timing	Estimated release date, March 2026.
Estimated cost	Estimated cost of $1.8 million (including capex and opex), plus contingency allowance of $0.2 million. Note: this estimate covers the cost of Stage 1 changes only.
Impact on market participants	Market Participants: • Performance of the RTMS system will be maintained and risks to service availability will be considerably reduced. • The mechanism by which older submission data will be made available to participants will be confirmed pending further consultation planned for November 2025. However, AEMO anticipates relatively minor changes to how participants currently access this data. . • Minor documentation updates. Other Stakeholders: • No impacts identified.

2 Introduction

2.1 Purpose of the IA

This Implementation Assessment (IA) describes how we (AEMO) propose to address the declining performance and rising storage costs associated with the RTMS system. It outlines the proposed system, process and operational changes and the estimated costs and timeline for implementing these changes. This IA also provides our indicative assessment of what these changes may mean for market participants and other stakeholders.

The purpose of this IA is to inform interested parties of our plans and invite feedback on our proposed investment and implementation approach. It will also allow affected market participants to develop their own implementation plans and impact assessments, where necessary.

2.2 Providing feedback

In the Draft version of this IA, AEMO invited feedback on the proposed implementation approach, highlighting the questions posed in Table 1 (below). We received feedback from several MPWG members, which is summarised in Appendix A6. Our responses to all the items raised are set out next to each item in the same appendix and we have updated this Implementation Assessment in line with those responses.

Table 1 Specific feedback sought, by chapter

Chapter of this IA	Suggested feedback topics
Problem and response	• Do you agree with AEMO's characterisation of the hierarchy of requirements for the RTMS market interface? • Do you consider that AEMO has misunderstood or overlooked important use cases for older RTMS data that would suggest high-frequency access to this data is required? • Do you consider that AEMO's proposal to set the data age threshold at 180 days is appropriate? If not, what would be a better setting from your perspective and why? • What alternative options would you suggest to better achieve the goal of safeguarding the operational reliability and sustainability of the RTMS system?
System impacts	• Do you agree with the impacts and impact ratings AEMO has identified regarding changes to AEMO's systems? • What changes, deletions or additions would you propose and why?
DocumentationImpacts on published documentation	• Do you agree with the impacts and impact ratings AEMO has identified regarding changes to procedures? • What changes, deletions or additions would you propose and why?
External impacts	• What is your experience of the performance of the RTMS system? • Do you agree with the impacts and impact ratings AEMO has identified for Rule Participants besides AEMO? • What changes, deletions or additions would you propose and why?
Implementation	• Have the key implementation risks been adequately captured? If no, what's missing or incorrect?

Comments should be sent via email to majorprojects@aemo.com.au.

3 Problem and response

3.1 The problem

3.1.1 Background

The WEM Reform Program implemented a security constrained economic dispatch (SCED) market in which supply solutions are co-optimised to find the most cost-effective approach to satisfying energy and security needs. The RTMS system was introduced as part of this change and allows Market Participants to bid into energy and fast contingency essential system service (FCESS) markets in very granular ways. For participants, establishing interfaces with the RTMS system was one of the most critical changes associated with the start of the new market on 1 October 2023. For these reasons, the RTMS system had to be released earlier than other new components, which constrained how RTMS was designed, developed and optimised.

Issues arising from this include the following.

1. The RTMS system lacks a data lifecycle policy, specifically a policy consistent with the hierarchy of requirements for the RTMS market interface summarised in the callout box (inset right).
2. The application logic of the RTMS system does not optimise the data that it writes to the database. As a result, considerable quantities of redundant data are currently being stored to the RTMS database.

Hierarchy of requirements (RTMS market interface)

AEMO notes the following key requirements for the RTMS system in terms of the market interface that it must provide. These requirements are shown in descending order of priority (AEMO's perspective).

1. AEMO must ensure:
   - market participants can reliably submit bids, access their prospective consolidated submissions and make rapid adjustments; and
   - the RTMS system makes these consolidated submissions available to WEMDE to be considered in dispatch solutions.
2. AEMO must ensure market participants have ready access to recent submission data to support frequent ex-post analysis – for instance to review incidents or to inform short-term operational optimisation.
3. AEMO must ensure market participants have adequate access to the full history of their submission data, as may be needed from time-to-time to support less common analysis, such as occasional strategic reviews.

3.1.2 Current issues and increasing risks

The volume of data stored in the RTMS system's operational database increases at a rate of approximately 1% per week. As data volumes grow, issues with the RTMS system are now emerging, while broader risks are gradually increasing.

Growth in the RTMS database volume and number of rows is increasing the time required to complete a query on the RTMS database. This results in longer response times for RTMS queries (i.e. increased latency). At best

this will be a source of irritation, at worst it may have financial consequences for a market participant facing a narrow time window to make, confirm and adjust their submissions ahead of gate closure.

The data volume is approaching a capacity threshold above which a new pricing tier will be triggered, increasing operating costs by up to $10,000 per month. AEMO estimates that we will reach this pricing tier in around six months. If we do nothing to address the data growth, the volume will exceed the capacity of the top service tier available and a new system architecture would be required to allow the system to continue to operate. We estimate it will reach this limit in around 16 months.

In addition to the cost and sustainability implications of growth in storage volumes, the number of rows in some RTMS tables is driving down system performance. The RTMS database contains many millions of rows to iterate through and over 1,000,000 rows are added each day. This is driving up latency for many database operations.

Longer query processing times are also driving more frequent timeouts: queries from participants and AEMO staff that cannot be fulfilled within the system-permitted time. Users experience these timeouts as error messages in API responses or on the MPI screen, as well as inadequate latencies experienced when submitting RTMS. To address this, AEMO must manually perform database maintenance tasks on a near weekly basis. These measures will become progressively less effective, or more disruptive, as the underlying volume increases.

3.1.3 Data age versus utilisation

The RTMS database currently retains all RTMS data since the system was first made available prior to the October 2023 go live. For the purposes of this IA, we define the age of all RTMS data in terms of the number of Trading Days that have elapsed since the Trading Day of the Primary Dispatch Interval (PDI) to which a given submission relates.

Analysis of API data requests made of the RTMS system leads us to focus on usage patterns for the 'consolidated' endpoint alone – this being the only endpoint for which we believe market participants are in practice seeking to obtain RTMS data older than 7 days. While we do see many calls for very old data in the case of the 'submission' endpoint, we have been able to attribute all of these calls to a single market participant that appears to be using the calls as a "health check" rather than for the purposes of obtaining specific historical data. See Appendix A3 for more detail on our analysis.

Our analysis of the queries made to the consolidated endpoint show the vast majority of data requests relate to data less than 7 days old (99.975%). Considering the 0.025% of queries for data older than 7 days, we see a similar age-related skew. Calls to the consolidated endpoint for data older than 180 days account for only 0.009% of all calls (~1 call per day).

Conversely, the data covering the most recent 180 days constitutes around 25% of all the data stored in the RTMS database – a share that's continually declining. This implies that the current approach to storing RTMS data sees 75% of its data storage workload being notionally attributable to 0.009% of requests. This finding suggests an opportunity to manage the resources of the RTMS system more efficiently.

3.2 Response

3.2.1 A staged approach

AEMO plans to address the RTMS issues in two stages:

- Stage 1 – we will reduce the volume of data stored in the RTMS database in the short term, by purging older data and storing it in the Enterprise Data Platform (EDP) instead.
- Stage 2 – we will update the application code to optimise database access patterns and reduce redundant data.

This IA covers Stage 1 only. Stage 2 and any subsequent upgrades will be covered in a future IA.

3.2.2 Stage 1

We will develop and implement a lifecycle data policy to manage storage growth. Once implemented, this lifecycle data policy will see RTMS data retained in the RTMS database until it reaches a specified age (the "data age threshold"), at which point it will be purged from that database (see section 0). This will place a loose ceiling on the total storage capacity required for the RTMS database. RTMS data is already copied daily to the EDP, meaning that any older data purged from the RTMS database would still be retained by AEMO. New arrangements will need to be put in place to provide Market Participants with continued access to this older RTMS data.

The cost of solely using the EDP to store older RTMS data over the long term will be considerably lower than continuing to store these data in both the RTMS database and the EDP, in addition to reducing the data storage burden on the RTMS database to mitigate the growing operational risks noted earlier. Therefore, the smaller the data age threshold, the smaller the costs and risks borne by the market.

Changes in approach since the Draft IA

Narrowed extent of impact

Since the Draft IA was published, AEMO has narrowed the focus of Stage 1 changes, having identified that it can achieve most of the benefits sought, by purging data from just one of the data tables stored in the RTMS database. Specifically, AEMO now expects to:

- implement the data age threshold for the data table that supports the 'submission' API endpoint; and
- maintain all of the historical data stored in the data tables that service queries to the 'consolidated' and the 'gateClosureViolation' API endpoints.

In the discussion that follows regarding the value of the data age threshold and the options to maintain participant access to RTMS data beyond that threshold, the reader should be mindful that only the data obtained through the 'submission' endpoint is now at issue.

Additional Stage 1 scope

Since the Draft IA was published, AEMO has given further consideration to the apparent practice of some participants to call the Consolidated endpoint as a health check. AEMO is exploring the option of providing a dedicated health check API endpoint. This would give participants a defined mechanism to check the health of the RTMS system, that places no load the current RTMS endpoints and can't be confused with true demand for system data.

Approach to provide external access to older data

In the Draft IA, AEMO noted that implementing the data age threshold will remove the ability for users of those services to query the affected data through the existing API and WEMS MPI services. While noting that we receive very few API queries for older RTMS data, AEMO is committed to ensuring market participants retain access to older data by other means and proposed two options to achieve this, namely manual provision through an email request and a new API to retrieve older data from the EDP (Appendix A4.1 provides further detail on these options).

Having considered the feedback received through the MPWG and new insights emerging from further investigation, AEMO has:

- Decided against establishing a dedicated API that accesses the EDP on grounds of cost and complexity;
- Identified a third option that can support external self-serve access to the full RTMS submission history[1]; and
- Decided to undertake additional consultation through the Industry Testing Forum (ITF) to explore and test this new option with participants.

Defining the "data age threshold"

In the Draft IA, AEMO originally proposed a value of 180 days for the data age threshold. Feedback on the Draft IA points to a preference on the part of some participants for the data age threshold to be set at 12 months. Details of AEMO's original analysis concerning the data age threshold is provided in Appendix A4.2.

As noted above, since the Draft IA was published AEMO identified a third option that can support external self-serve access to the full RTMS submission history. AEMO believes that this approach would, if adopted, greatly diminish the importance to end users of the data age threshold applied to the data table that currently underpins the 'submission' API endpoint. Nonetheless, there may be some minor trade-offs for users that AEMO considers are best explored directly with Market Participants' IT representatives through the ITF. Therefore, we have noted the preference for a data age threshold of 12 months and will leave this question open until later in the project.

[1] This option would exploit some of the data redundancy referred to earlier by repurposing a different data table to support the 'submission' endpoint.

3.2.3 Subsequent stages of work

AEMO will consider the timing and more detailed design of the next stage(s) of improving the RTMS system in one or more subsequent IAs or updates to this IA.

3.3 Energy System and Market Rules considerations

Not applicable.

The changes described in the IA to improve the RTMS system are initiated by AEMO to better manage existing obligations and to reduce operational risks. They are not driven by changes to the Electricity System and Market (ESM) Rules.

4 System impacts

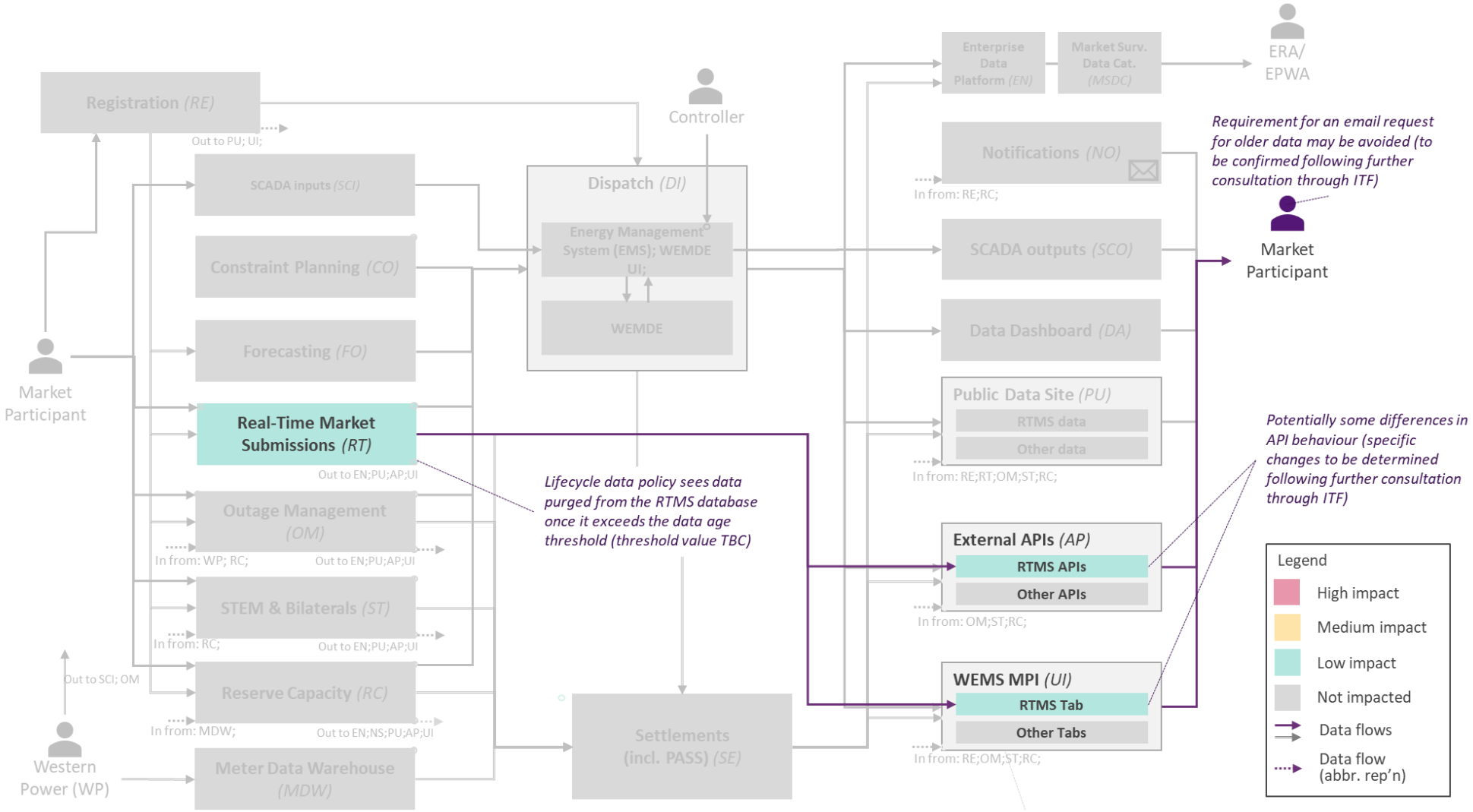
This section provides a high-level summary of the system changes that the response(s) put forward will require. It focusses on system elements that are participant-facing and presents a simplified depiction of AEMO's internal system architecture for that reason.

4.1 RTMS system changes

4.1.1 System impact illustration

The high-level system impacts are illustrated in Figure 1, over page.

Figure 1 Overview of impacts to AEMO systems



4.1.2 System impact summary

System impacts are summarised in the table below.

Table 2 System impacts

System / Component	Impact rating	Summary of impacts
External APIs	Low	• For data <=data age threshold (value TBC): No change to functionality. Performance of all GET and POST operations maintained or improved relative to today. • If the newly identified approach referenced in Section 3.2.2 is confirmed: – This threshold will not apply to the 'consolidated' and 'gateClosureViolation' endpoints – Access to all historical data will be retained for the 'submission' endpoint, with some restrictions on API filter functionalities. • The approach will be confirmed subject to the outcome of further consultation through the ITF (see Section 7.2.
WEMS MPI	Low	• Same implications for RTMS-related functionality, performance and data access as for External APIs.
RTMS	Low	• No change to functionality. • Implementation of lifecycle data policy sees some data older than the data age threshold purged – specifically from the data table that currently supports the 'submission' endpoint. • The purging of these data is expected to significantly improve system performance and robustness.
EDP	Nil	• AEMO has decided against the option of establishing an external API connection to the EDP. • RTMS data is already archived in the EDP and the changes upstream to the RTMS system discussed in this IA do not affect this process.

5 Impacts on published documentation

This section lists those published artefacts AEMO will need to update or create as a result of the response(s) put forward and describes the basic nature of the new or modified information to be covered.

We have identified minor amendments will be required to two pieces of existing published documentation, as detailed in Table 3.

Table 3: Summary of published documents affected by RTMS Enhancements initiative

Document name	Complexity of changes	Changes or content	External briefings or consultation proposed?
Developer Portal | RTMS API Landing Page **(Existing)**	Low	Update to reflect the data availability scope	Yes. Briefing to the Industry Testing Forum (ITF). Approximately 1 month prior to release date (see Implementation section below)
WEMS MPI User Guide: Real-time Market Submissions (RTMS) **(Existing)**	Low	Update to reflect the data availability scope	Yes. Briefing to the ITF. Approximately 1 month prior to release date (see Implementation section below)

6 External impacts

This section sets out AEMO's assessment of the specific impacts on market participants, Western Power, Energy Policy WA and the ERA.

Note: AEMO cannot predict the exact scale or nature of responses required for each external stakeholder. Therefore, this IA does not identify what specific changes stakeholders may need to make. We recommend each stakeholder performs its own assessment based on the information in this IA and any additional information provided in advance of each release.

6.1 Indicative impacts on external stakeholders

The following table summarises our preliminary assessment of the impacts on external stakeholders associated with the proposed enhancements to the RTMS system.

Table 4 Indicative impacts on other Rule Participants and related regulatory entities

Function or Capability	New/Existing	Entity type	Impact rating	Related AEMO functions (WEM)	Remarks
Making a real-time market submission (API: POST operations; WEMS MPI: JSON upload)	Existing	Market Participant	Nil	Real-Time Market Monitoring	No new functionality. Non-functional performance unchanged.
Querying submissions, submission status, consolidated submission etc (up to data age threshold)	Existing	Market Participant	Nil	Real-Time Market Monitoring	No new functionality. Non-functional performance unchanged.
Querying submissions, submission status, consolidated submission etc (beyond data age threshold)	Existing	Market Participant	Low	Real-Time Market Monitoring	If the newly identified approach referenced in Section 3.2.2 is confirmed, there would be some restrictions on the filters available when querying older historical data. Consequently, participants may need to adjust API calls to the 'submission' endpoint and the logic used to parse responses.

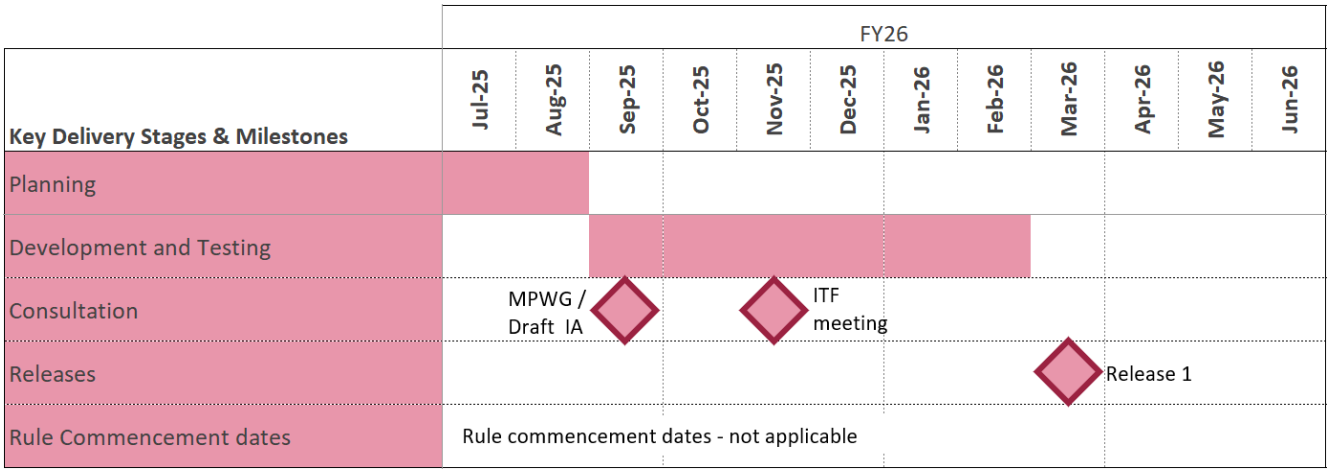
7 Implementation

This section provides a high-level summary of the timeline and cost to implement the initiative and sets out the main implementation risks.

7.1 Indicative implementation timeline

The figure below sets out an indicative implementation pathway for the changes described in this IA to implement the changes to deliver the first stage of improvements to the RTMS system described in Section 3.2.2. The estimated date for deploying Release 1 to Production is around March 2026.

Figure 2 Indicative delivery timeline



The above timeline reflects resourcing constraints as understood at the time of writing. Actual release dates may be affected by resource contention and the ongoing prioritisation of initiatives.

7.2 Market readiness approach

The approach to supporting market readiness for the single release planned for March 2026 will be as follows.

- AEMO will engage with stakeholders through the ITF in November 2025 to explain and discuss the newly identified approach. Through this engagement, AEMO plans to:
  - explore and refine an alternative approach to managing the provision of older RTMS data
  - reevaluate the costs and benefits of that approach and
  - determine a suitable setting for the data age threshold.

- AEMO will notify stakeholders as soon as possible after that consultation of the outcomes including the approach to publishing older RTMS data and the value of the data age threshold (AEMO aims for this to occur no later than early February 2026).
- AEMO will provide a pre-release briefing to the ITF. We estimate the timing for this will be between one and three weeks prior to the Pre-Production release.
- AEMO will publish release notes and issue a Market Message shortly before the Pre-Production release[2].
- AEMO will issue a Market Advisory shortly before the release to Production.

7.3 Indicative implementation cost – AEMO

The preliminary assessment of the cost to implement this change is $1.8 million (including capex and opex) plus a contingency allowance of $0.2 million, over the life of the project. Note: this estimate covers the cost of Stage 1 changes only.

We will report the current approved implementation budget (including contingency) for the project established to implement the changes described in this IA, as part of its reporting on the WEM Implementation Roadmap. As implementation of the changes detailed in this IA has already commenced, the reader is referred to the following project included on the Roadmap: P35171 WA Digital Lifecycle FY26 – RTMS Enhancements.

7.4 Implementation Risks

Risks identified by AEMO through this IA arising from the implementation of a lifecycle data policy for the RTMS system are outlined in the following table.

Table 5 Initial assessment of implementation risks

Identified risk	Current rating	Mitigation strategies	Residual rating
Overlooked or underappreciated participant impacts If AEMO has overlooked or underestimated the impacts for participants of deprecating API / MPI access to older RTMS data, the proposed solution may be unsuitable.	Low	AEMO implemented the following strategies: • Consult with Market Participants on the proposed settings to understand implications for their operations. • Reconsider approach in light of participant feedback. AEMO considered the feedback provided and is confident that its adjusted approach has effectively mitigated this risk.	Immaterial

[2] AEMO aims to complete Pre-Production releases two weeks prior to the corresponding Production release.

A1. Glossary

This document uses many terms that have meanings defined in the Electricity System and Market Rules (ESM Rules). The ESM Rules meanings are adopted unless otherwise specified.

Table 6 Glossary of terms and acronyms used in this IA

Term	Definition
AEMO	Australian Energy Market Operator: The entity responsible for operating the Wholesale Electricity Market and managing power system security in the SWIS. (ESM Rules, Clause 2.1A)
API	Application Programming Interface: A set of rules and protocols for building and interacting with software applications.
Data age	The age of RTM submission data, calculated as the number of trading days elapsed since the trading day of the primary dispatch interval to which the submission relates.
Data age threshold	The number of trading days that RTM submission data will be retained in the RTMS database and hence the threshold beyond which submission data ceases to be available to query via API or MPI.
EDP	Enterprise Data Platform: A centralised system for managing, storing and retrieving AEMO's data.
ESM Rules	Electricity System and Market Rules. The WEM and the SWIS are governed by the Electricity System and Market Rules. See https://www.wa.gov.au/government/document-collections/electricity-system-and-market-rules
FCESS	Frequency Control Essential System Services: Services required to maintain Power System Security and Reliability, including Regulation Raise/Lower, Contingency Raise/Lower, and Rate of Change of Frequency (RoCoF). These are co-optimised with Energy within WEMDE. (ESM Rules, Clause 3.11.2(b))
IA	Implementation Assessment: a summary of AEMO's proposed or settled approach to implementing an initiative, to explain the changes or the benefit of external stakeholders.
MPI	Market Participant Interface: The primary user interface/portal through which market participant users interact with WEM systems. Also referred to as the Wholesale Electricity Market Systems Market Participant Interface (WEMS MPI)
MPWG	Major Projects Working Group: A consultative forum for engagement with industry stakeholders regarding the work program of AEMO's WA Reform Program - the delivery vehicle for AEMO's WA-focused projects.
MSDC	Market Surveillance Data Catalogue: A catalogue of data used for monitoring and analysing market performance and compliance. (ESM Rules, Clause 10.6)
Older data	For the purposes of this IA, “older data” refers to RTMS data older than the “data age threshold”
PDI	Primary Dispatch Interval: The first Dispatch Interval in a Dispatch Schedule, from which operative Dispatch Instructions and Market Clearing Prices are determined. (Facility Dispatch Process WEM Procedure)
RTMS	Real-Time Market Submission: A notice submitted by a Market Participant to AEMO setting out the parameters under which it intends to have a Registered Facility participate in the Real-Time Market. (ESM Rules, Chapter 11)
SCED	Security Constrained Economic Dispatch supports secure and reliable power system operation by incorporating consideration of physical power system characteristics (such as network limitations, supply/demand balance, and ESS requirements) into the scheduling and dispatch process. These characteristics are represented in the Dispatch Algorithm by ‘Constraint Equations’, which must be respected by the software while scheduling and dispatching Facilities.
WEM	Wholesale Electricity Market: The market for the wholesale sale and purchase of electricity in the SWIS. (ESM Rules, Clause 1.1.2)

A2. Interpreting the age of RTMS data

For the purposes of the data lifecycle policy that it intends to establish for RTMS data, AEMO's interpretation of the "age" of RTMS submission data is illustrated in the following diagram. Noting that submissions can only be made in advance of the Primary Dispatch Interval (PDI), any time prior to the PDI to which a submission relates is ignored for the purposes of calculating "age". The PDI falls within a given Trading Day[3] 't'. The data age equals the difference between Trading Day 't' and the Trading Day of the request for those submission data.

Figure 3 Determining the age of RTMS data

The submission data will remain in the RTMS database until the age of the data exceeds the data age threshold ('DAT' in the illustration above). We initially proposed the data age threshold be set at 180 days, meaning data would remain in the RTMS database up to and including 180 Trading Days after the Trading Day to which the submission data relates. During the next Trading Day, the old data would be deleted from the RTMS database (but retained in the EDP). Requests for that data would thereafter be served by whatever service is determined (see "Approach to provide external access to older data" under Section 3.2).

Note: In response to feedback on the Draft IA provided through the MPWG, and with the benefit of subsequent investigation, AEMO is reconsidering both the level for the data age threshold and its approach to provisioning data older than the threshold age.

[3] Recall that in the WEM a Trading Day runs from 8:00 am to 8:00am the following day.

A3. System usage analysis

Table 7 below sets out the results of recent analysis of how market participants are using the RTMS API endpoints at present. AEMO analysed call data for the key RTMS API endpoints for the period 7 July to 30 August 2025, namely: the 'submission', 'consolidated' and 'gateClosureViolation' endpoints. From these data, we derived average daily calls and then broke the call counts out by the age of the data being called.

A3.1 'submission' endpoint

For the 'submission' endpoint, AEMO receives hundreds of daily calls from one market participant for a data range that precedes new market start. Since the data returned are always the same, it is apparent that there is no analytical purpose for these data requests, rather this particular subset of calls is simply a legacy API health check. Once that subset of calls from the participant in question are removed, the analysis shows that 100% of calls the 'submission' endpoint relate to data that are no more than 7 days old.

A3.2 'consolidated' endpoint

Our analysis indicates that 99.975% of queries to the 'consolidated' endpoint related to data that were either future dated or were up to 7 days old. Only 0.025% of calls related to data older than 7 days, or around 3 calls per day. This share continues to drop as we consider progressively higher data age thresholds. For instance, calls for data older than 180 days represent 0.009% of calls, or around 1 call per day.

A3.3 'gateClosureViolation' endpoint

Our analysis indicates that participants did not query this service once in the period of close to 8 weeks that we analysed.

Table 7 Analysis of usage of the RTMS API endpoints 7 July to 30 August

Operations	Ave calls/day	Ave daily calls for future data	Ave daily calls for historical data (headers show the upper or lower bound of data age)						
			<7 days	>7 days	>30 days	>60 days	>90 days	>180 days	>365 days
Raw Counts per day									
Calls to 'submission' endpoint[4] (Raw)	2370	N/A	1588	0	0	0	0	0	782
Calls to 'submission' endpoint[5](Cleansed)	1577	N/A	1577	0	0	0	0	0	0
Calls to 'consolidated' endpoint[6]	12966	2381	10582	3.2	3.2	1.9	1.8	1.2	0.6
Calls to 'gateClosureViolation' endpoint[7]	0	0	0	0	0	0	0	0	0
As proportion of data of any age									
Calls to 'submission' endpoint (Raw)	2370	N/A	67%	0	0	0	0	0	33%
Calls to 'submission' endpoint (Cleansed)	1577	N/A	100%	0	0	0	0	0	0
Calls to 'consolidated' endpoint	12,966	18.37%	81.61%	0.025%	0.025%	0.015%	0.014%	0.009%	0.005%
Calls to 'gateClosureViolation' endpoint	0	0	0	0	0	0	0	0	0

[4] WEM/v1/realTimeMarketSubmission/submissions

[5] Calls to the WEM/v1/realTimeMarketSubmission/submissions endpoint, cleansed of a recurring GET call from one participant dated back to 2022, which is believed to be a health check.

[6] WEM/v1/realTimeMarketSubmission/consolidated

[7] WEM/v1/realTimeMarketSubmission/gateClosureViolation

A4. Options, costs and benefits

A4.1 Additional detail on data provisioning options

In the Draft IA, AEMO provided additional detail in this Appendix on the two data provisioning options presented by AEMO at that point, namely:

- Option 1: Market Participants to request older RTMS data by email.
- Option 2: AEMO to build a dedicated API to retrieve older data from the EDP.

However, as stated in Section 3.2.2, AEMO has:

- Decided against Option 2
- Identified a third option that can support external self-serve access to all historical RTMS submissions; and
- Decided to undertake additional consultation through the Industry Testing Forum (ITF) to explore this new option with participants.

For these reasons, AEMO has not included or updated this "Additional detail" section for this Final IA. Please refer to the Draft IA Appendix A4.1 to view this information.

A4.2 Benefits and costs

In the Draft IA, AEMO detailed the benefits and costs associated with introducing a data age threshold of 180 days and of managing a manual data provisioning process. For the purposes of this Final IA, AEMO has not taken a position on what the data age threshold should be. Further, AEMO no longer prefers the manual data provisioning approach.

For these reasons, AEMO has not included the information on benefits and costs in this document. Please refer to the Draft IA Appendix A4.2 to view the details.

A5. Impact rating guidance

AEMO's approach for rating impacts from No Impact, Low, Medium or High applies a predefined matrix of impact types, summarised in the table below (see next page).

Table 8 Impact assessment guidance

Dimension considered	Question	High	Medium	Low	None
Impact on documentation	What is the change to a given internal process, WEM Procedure or technical document that AEMO must maintain and/or publish?	Major changes to documentation. E.g. creating a significant new document (or extensively rewriting existing). E.g. document drafting and review extensively involves multiple AEMO teams.	Moderate changes to an existing document. E.g. addition, elimination or reorder of multiple process steps. E.g. document drafting and review involves multiple AEMO teams to some extent.	Minimal change to an existing document. E.g. addition, elimination or reorder of small number of process steps. E.g. document drafting and review is primarily carried out within a single AEMO team.	No changes to documentation
Systems impact – market applications **(internal only)**	How extensively will the change affect the underlying market applications?	Involves a major change to, or addition of, a market application. E.g. introduction of a new application or decommissioning of existing system	Moderate change to existing market applications. E.g. introducing many new features or significantly increasing non-functional requirements	Minor change to existing market applications. E.g. adding one or several minor new features. E.g. expanding system functionality with only minor adjustments to the application's data and processing frameworks.	No change market applications
Systems impact – user interfaces (internal and external)	How is the change affecting user interfaces? How easily will the change be integrated by users?	Major changes to user interface(s) e.g. introduction of significant new or decommissioning of existing UI tabs. E.g. manyu users may not understand the UI without training.	Moderate change to existing interfaces. E.g. significantly expanded range of controls within an existing UI tab. E.g. many users will understand the UI relatively quickly on their own, but without training, some many not.	Minor change to existing interfaces. E.g. small addition of controls within an existing UI tab. E.g. almost all users will understand the UI quickly on their own, even in the absence of training.	No change to user interfaces
Systems impact – system to system interfaces **(internal-internal and internal-external)**	How is the change affecting the interactions between systems? How easily will changes be accommodated by systems up or downstream?	Major systems interface change. E.g. entirely new machine interface, with unfamiliar data schema or transfer formats must be negotiated or understood. E.g. upstream or downstream limitations significantly constrain or complicate the implementation of the core application changes.	Moderate systems interface change. E.g. the change involves significantly expanding the number of parameters or data-streams to be exchanged, but closely follows established patterns, formats and schemas. E.g. upstream or downstream systems require many changes, but these closely follow established patterns, logic or structures.	Minor system interface change. E.g. the change involves adding a small number of parameters or data-streams, adhering to established patterns, formats and schemas. E.g. upstream or downstream systems require several minor changes.	No system to system interface impacts

A6. MPWG feedback

The feedback provided by MPWG members in response to the Draft IA is compiled in the table below, along with AEMO's response to each issue raised.

Table 9 Feedback received on Draft IA and AEMO's responses

Ref	Short description	Details	Raised by (Organisation)	AEMO Response
1	Data age threshold	Synergy considers that the proposed 180 days for data retention is too short and considers that 12 months of data should instead be retained within the RTMS database.	Synergy	Noted. AEMO is investigating alternative approaches that will allow participants to continue to self-serve older RTMS (including data up to 12 months old and potentially longer).
2	Data age threshold	Enel X prefer a 12-month data age threshold beyond which data would be purged from the RTMS database. In our view the proposed 180-day threshold would limit a participant's ability to address matters arising from metering data that has been subject to late revisions or compliance issues that were not picked up in near term monitoring activities.	Enel X	See previous
3	Approach to provide external access to older data	Synergy supports "Option 2 - Dedicated API for older data" and considers that it should be a requirement that Market Participants continue to be able to self-serve their requirements in a timely manner.	Synergy	Noted. AEMO has decided against Option 2, due to the cost and complexity of this approach. However, as noted against Ref#1, we are investigating an alternative approach that allows participants to self-serve older RTMS data.
4	Approach to provide external access to older data	To access older data stored in the Enterprise Data Platform (EDP) Enel X prefer 'Option 2 – Dedicated API for older data' and encourage AEMO to examine options to reduce the proposed one-to-two-day turn-around time of this option. Requesting data by emailing the RTM Monitoring Team presents a significant overhead for both AEMO and participants. Enel X would accept some limitations on the complexity of data queries to improve delivery times. On balance, delivering larger blocks of data that a participant can then query with the appropriate level of detail may simplify systems development.	Enel X	See previous
5	Other historical data	Synergy advocates that any changes to the data storage processes must ensure that Market Participants can still quickly access longer timeframe data for: • CRC processes (NAQ, RLM, outages) – NAQ modelling – RLM modelling • Outage information to support calculations of: – the refund factors, – payable planned outages, – reserve capacity performance monitoring; and – tracking outages against the Forces outage threshold	Synergy	Noted. AEMO can confirm there are no plans to deprecate self-serve access (API or UI) to any of the data types listed and no plans or proposals of this kind have been brought forward within the WA Reform Program in respect of any other WEM-related data. The plan to deprecate access to some historical RTMS data has only arisen because AEMO observes extremely rapid growth in data volumes for the RTMS application. We do not currently foresee a similar problem arising in the case of other applications, since these have very different (and less challenging) data growth profiles.