

WEM Reform Market Readiness Report No.9

July 2023



About this report

- The Market Readiness Report is intended to monitor WEM participant preparedness for the start of new market arrangements in the WEM, in accordance with the [Market Readiness Engagement and Reporting Strategy](#)

Prior to July 2022

Readiness reporting focused on:

- Measuring the extent to which respondents have established and commenced internal readiness work programs
- Identifying the areas where respondents anticipate the most significant effort and challenges.

From July 2022 onward

Readiness reporting now measures progress and status against Specific Readiness Criteria

- The Specific Readiness Criteria allow stakeholders to gauge each respondent's progress in delivering outcomes of relevance to their particular business and facilities
- Different sets of criteria apply to different types of entity; market participant, network operator, system operator and regulatory authority.

- Previous Market Readiness Surveys:
 - Specific: Survey No. 8: Released 31 March; abridged report released concurrently with Report 9; [Survey No. 7](#): Released: 31 January; Reported 7 Mar 2023; [Survey No. 6](#): Released 30 Nov 2022; Reported 22 Jan 2023; [Survey No. 5](#): Released 30 Sept 2022; Reported 4 Nov 2022; [Survey No. 4](#): Released 31 July 2022, Reported 9 Sept 2022
 - General: [Survey No. 3](#): Released 29 April 2022, Reported 7 June 2022; [Survey No. 2](#): Rel. 31 Jan 2022, Rep. 11 March 2022; [Survey No. 1](#): Rel. 30 June 2021, Rep. 31 July 2021
- Market Readiness Survey No. 9 was released on 31 May 2023 and supported by the [Survey User Guide](#) (Version 3).
- Survey invitees were identified as follows.
 - All registered market participants, noting AEMO excluded market participants known to no longer be active.
 - Prospective participants intending to commission new facilities before or shortly after go-live were included.
 - Where a common organisation is affiliated with multiple market participants, a single invitation in respect of that organisation was issued.
- Participation in the survey is voluntary and the results reported here have been aggregated and anonymised, with the exception of those for AEMO, Western Power and the ERA. Some of Synergy's results have also been reported in additional detail, relative to other market participants.
- This Market Readiness Report will be published on AEMO's website.
- For any queries or suggestions related to the report or survey, please contact wa.ets@aemo.com.au.

Key Insights



Survey coverage remains high but skewed

- Survey coverage by energy and capacity remained high this round.
- Large market participants (MPs) remain strongly engaged; smaller participants less so.



Overall, **High Risk** MP capabilities remain On Track

- MC-1-MP-02 - RTMS: On Track, with one MP noting improvement since the launch of the WEMDE UI.
 - MC-1-MP-03 - WEMDE (DIs): On Track*
 - MC-1-MP-04 - WEMDE (ESS): On Track *
- *AEMO notes dependencies on SCADA readiness



Some issues with **Moderate Risk** MP capabilities – being addressed

- MC-1-MP-06 - WEMDE (data): AEMOs delays with testing env. has hindered progress here.
- MC-3-MP-01 - Outages: A barrier to updating this tool continues to be a delay in finalising the rules and procedure.



Some issues with **Low Risk** MP capabilities – being addressed

- MC-3-MP-02 – PASA: MPs reporting At Risk has slightly increased from last report but most report On Track.
- MC-4-MP-04 – STEM: Delays to STEM specifications continue to be a barrier.



Squeeze on MP development and testing becoming critical

- Delayed release dates have been putting further pressure on MPs internal timelines.
- Participants conveying significant concern about the impact of continuing delays.
- AEMO has final two RFM releases planned for second half July.



MPs seeking clarity on production behaviour

- MPs observing continuing issues in RFM environment. E.g. irregular timings of publication; many open defects.
- MPs want clear requirements to design against (e.g. publishing cadence)
- AEMO has brought forward next integrated release to RFM.



Market suspension design and implementation – a critical requirement

- Market suspension arrangements must be in place for market start.
- AEMO working with EPWA to prepare rule changes for consultation.
- AEMO also designing system changes to support settlement in the event of market suspension.



SCADA Readiness – a critical requirement behind schedule

- AEMO's SCADA readiness is behind schedule.
- Outstanding work items include implementing Grid System Service changes, finalising technical documentation and supporting participant implementation of linear ramping.
- AEMO prioritising this work and will shortly commence work scheduling with participants



Go-Live decision approaching – striving for supportive test results

- On 31 July, AEMO's SteerCo will consider the next Go-Live decision, based on best available information.
- Results from integrated testing and other critical requirements will be essential for "proceed".
- Integrated testing will not be completed by decision date, but should support a forecast.



Western Power highlights dependency on AEMO for Outages documentation

- Western Power continues to highlight outage management as its key dependency on AEMO.
- AEMO has now resolved blockers to Western Power's system development and testing.
- Outages WEMP to be released end July



ERA dependent on AEMO for data solutions for monitoring and surveillance functions

- ERA has multiple regulatory functions for which it depends on AEMO for data.
- AEMO expects interim solution in place for Go-Live.

How to read this report

New in Survey 6: Aggregated Results for Market Participants

- Individual participant responses have been aggregated to generate high-level summary results for each Market Capability
- Mock sample shown at right
- Aggregation of individual participant responses requires additional calculations

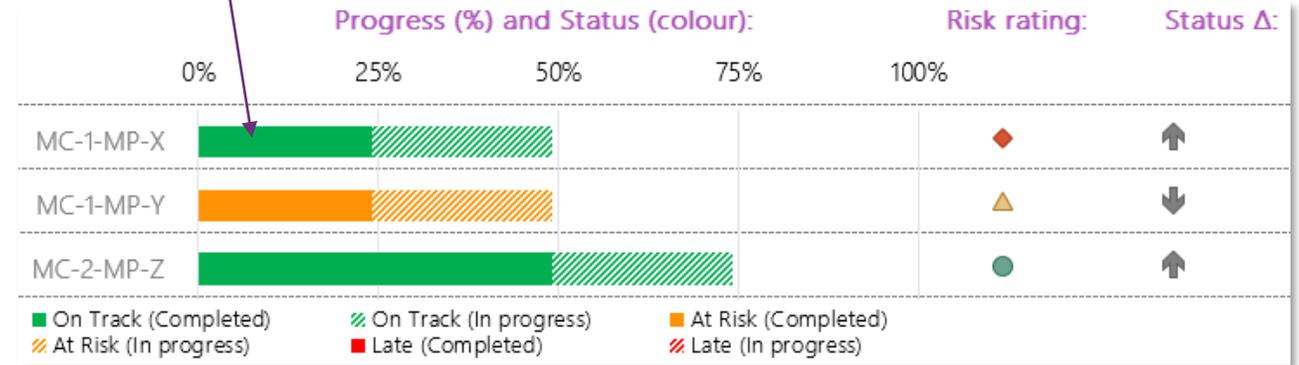
Aggregate “Progress” calculation:

- Substitute the band midpoint for each progress score
- Capacity weight each response, then average

Progress and status of readiness work is reported in same visual form as for AEMO, Western Power and ERA.

AEMO risk rated each market capability, asking: “What is the intrinsic risk to go-live if participants aren’t ready against this market capability?” Reasoning tabulated at end of this report.

Status is compared against previous survey: “Did aggregated status reports result in a change in status category?”



Aggregate “Status” calculation:

- Convert status responses into numeric data: **On Track** (1), **At Risk** (0.5), **Late** (0),
- Capacity weight each response, then average
- Convert numeric result back into Status categories based on bands:
 - On Track: averaged value above 0.8
 - At Risk: averaged value between 0.6 and 0.8
 - Late: averaged value below 0.6

Legend

- MC has low intrinsic risk
- ▲ MC has medium intrinsic risk
- ◆ MC has high intrinsic risk
- ➡ Status - no change since prev survey
- ⬇ Status - worse since prev survey
- ⬆ Status - improved since prev survey

Note: Intrinsic risk rating of each MC is independent of the status of that MC. For example, a high-risk MC (red diamond) may have a status of On Track (green progress bars). The latter rating reflects the status of a piece of work, whereas the former indicates the degree to which success or failure in executing that work could affect Go Live.

How to read this report

Results for Market Participants (cont)

New in Survey 6: capacity weighting and reordered MCs

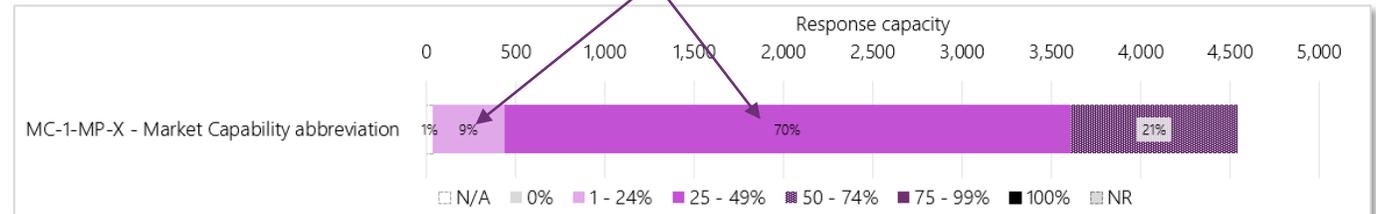
- We continue to report the spread of responses to each market capability.
- “Response capacity” replaces simple response counts

- measured by Capacity Credits awarded to each respondent for 2023-24 RC year
- this was necessary to aggregate the responses
- Charts now arrange market capabilities into high, medium and low risk – replacing Level 1 groupings (SCED, RCM, Sys Planning etc)

Progress Charts

- Possible values:
 - “N/A” – respondent considers market capability not applicable to them
 - Percentage progress of 0%, four equal bands, or 100%
 - “NR” – no response provided to this question
- Measuring the counts of each value among all responses
- Colour scheme shifts away from red as progress approaches 100%

Percentage share of surveyed capacity reporting progress in this band



Status Charts

- Possible values:
 - “N/A” – respondent considers market capability not applicable to them
 - Status of work as “On Track”, “At Risk” or “Late”
 - “NR” – no response provided to this question
- Measuring the counts of each value among all responses

Percentage share of surveyed capacity reporting this status setting

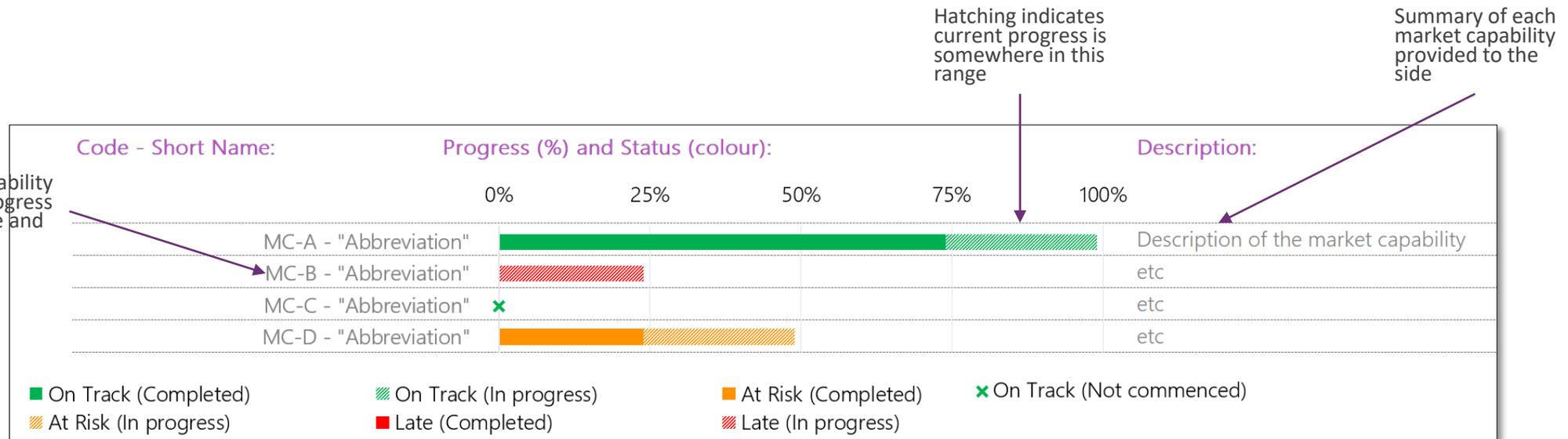


How to read this report (cont.)

Results for Other Reporting Entities (ERA, Western Power, AEMO)

- All results for a given entity presented on a single chart
- Chart scale measures percentage progress of four equal bands, or 100%
- X used to mark projects yet to commence.
- Currently in progress portion of work indicated by hatching
- “N/A” and “NR” options not used.
- Colour reflects status of work as “On Track”, “At Risk” or “Late”

Example Market Capability MC-B is reporting progress in the 0 – 24% range and status of “Late”

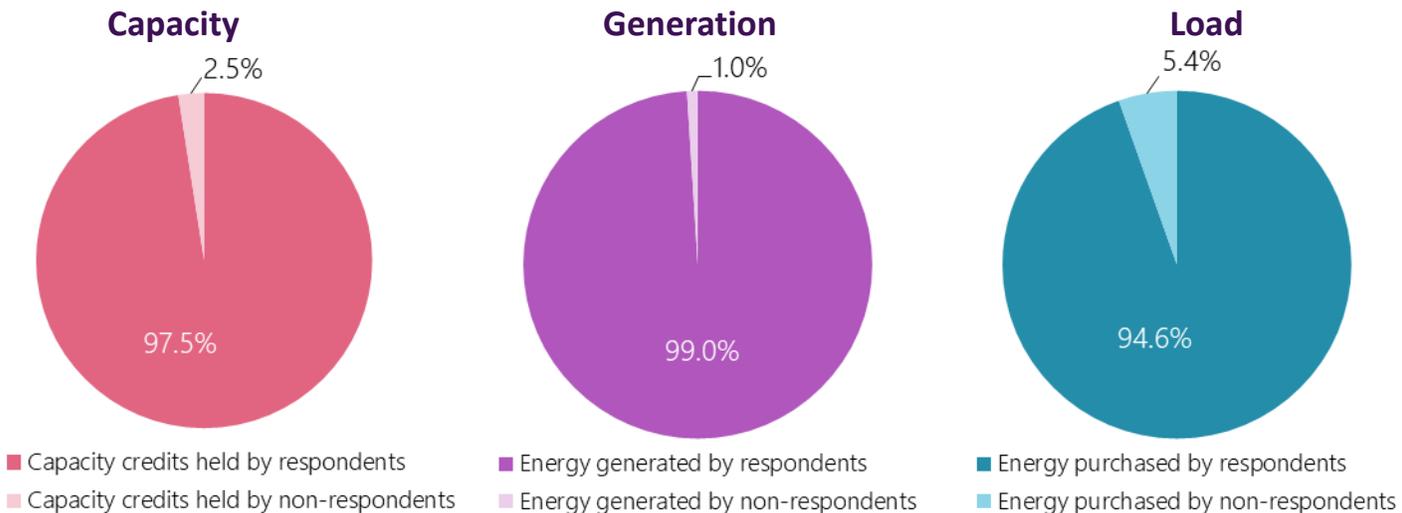


Response rates and coverage



Participation

- 69% of survey invitees responded (compared to 63% from Survey 8, note that improvement in response rate is entirely attributable to the removal of several entities from the invitation list)
- Four respondents to Survey 9 hadn't responded to Survey 8; one respondent to Survey 8 did not respond to Survey 9 (since Survey 1, 94% of current invitees have responded at least once – 99.96% of facility capacity)
- Responses covered most of the energy generated, capacity credits and energy consumed in the market
 - Market Generator coverage by capacity up slightly (97.5% compared to 96.8 % in Survey 8)
 - Market Generator coverage by energy down very slightly (99.0% compared to 99.2 % in Survey 8)
 - Market Customer coverage up slightly (94.6% compared to 91.4% in Survey 8)
- Participation improved
 - Survey participation by number steady (22 responses)
 - In some instances, non-responses will be consistent with intention to NOT participate in the new market and hence not a concern
 - AEMO engaging separately with the smaller participants to ensure high impact readiness tasks are understood.
 - A table of responses since Survey 4 is included at the end of this report for all invited entities



| Statistic | Value | Comment |
|---------------------------|----------------|--|
| Survey invitations issued | 35 | Note multiple participantIDs aggregated in one invitation where appropriate. List has reduced over time due to removal of participants that have ceased to be active and those without fully committed facilities. |
| Completed responses | 22 (69%) | Response rate based on completion of unique invitations. |
| Generation coverage | ~97% or better | Share of portfolio measured either by energy (10/2021 to 09/2022) or capacity (2023 RC Year) |
| Consumption coverage | 91% | Aggregated consumption metered across all NMIs assigned to Survey respondents as share of total energy supplied (2022). |

Respondent types

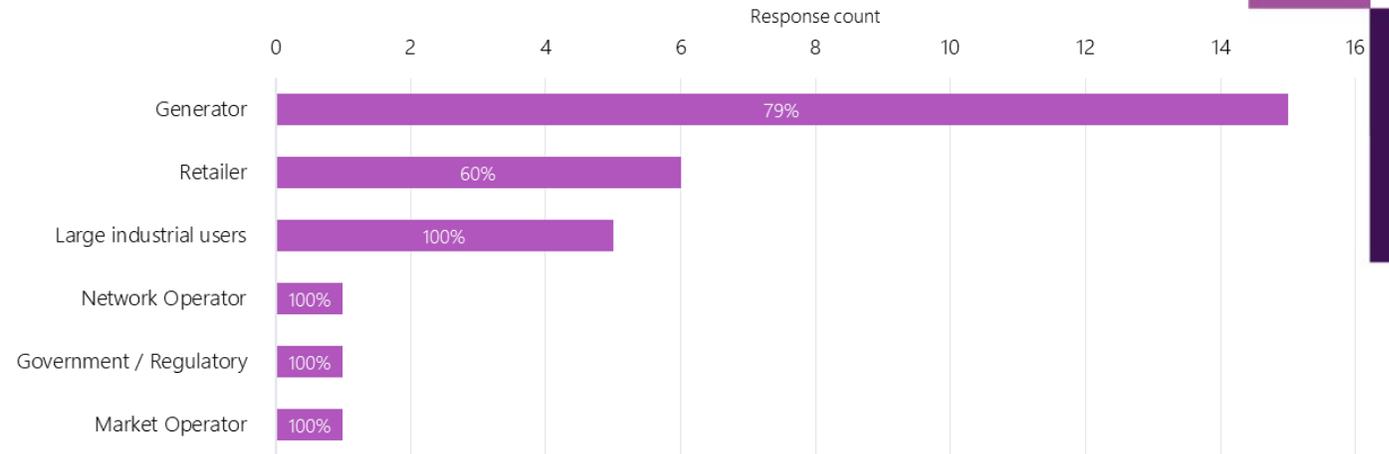
Market Generators

- 15 of 19 generator entities polled responded
- 13 generation or DSP facilities assumed operational at Go-Live are not covered by a response:
 - These facilities account for around 2.5% of capacity or 1.0% of energy.
 - All of these facilities are covered by 8 participants (accounting for multi-ID cases), of which 4 account for 99% of the capacity

Market Customers

- 6 of 16 Market Customers polled responded, covering around 95% of traded energy load.
- 6 of 10 retailers responded
- 5 of 5 large industrial users responded (market customers that are not retailers)

Western Power, ERA and AEMO have all responded



Results for Market Participants



Market Participant Readiness

Progress and status against all level 2 market capabilities



Market Participant Market Capabilities – Items with **high** intrinsic risk



MC-1-MP-02 - RTMS:

Able to make real time market submissions.

- Weighted by facility capacity, 8MW in 10 responses report RTMS work is 50 – 74% completed and 2MW in 10 report progress in the 75 – 99% range.
- Capacity reporting **On Track** has increased to 83% and capacity reporting this item as **Late** remains unchanged at 17%.
- One MP has noted improvement since the launch of WEMDE UI in that it is now providing data, though still has tests to complete.

MC-1-MP-03 - WEMDE (Dispatch Instructions):

Able to receive, understand and act on dispatch instructions at facilities.

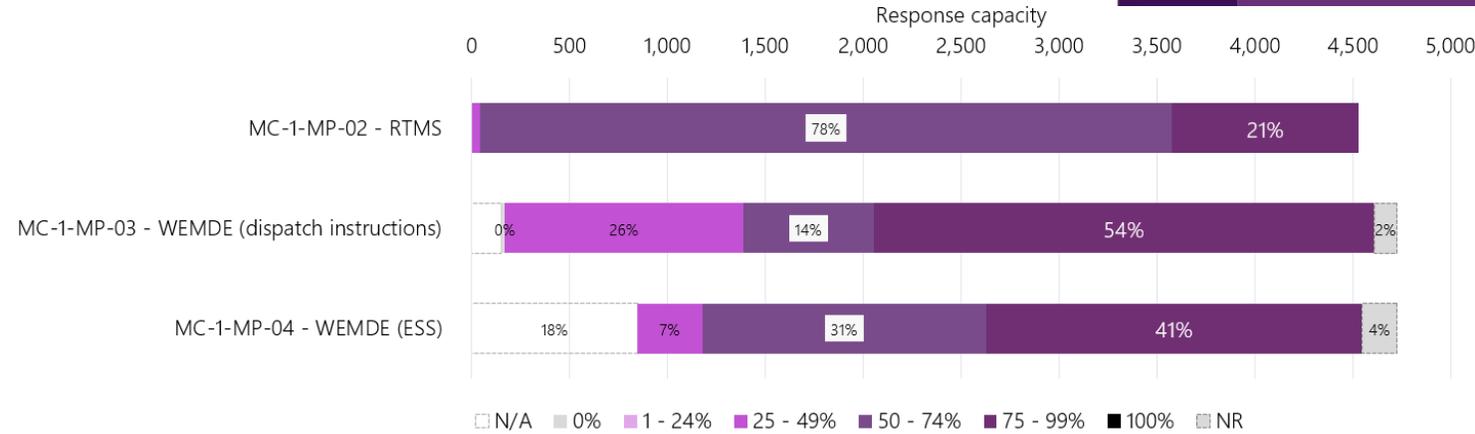
- Half of facility capacity reports progress of 75% or above.
- 2MW in 10 reports progress of 25-49% and 1.5MW in 10 reports progress of 50-74%.
- The majority of facility capacity, 8MW in 10, reports status as **On Track** while 2MW in 10, reports it **At Risk**.
- Compared to Survey 7 and 8, **On Track** and **At Risk** reports remained unchanged.
- Facility capacity reporting N/A has increased from 1% in Survey 8 to 3% in Survey 9 which AEMO explains as one Participant misinterpreting the question as focussing exclusively on instructions via API.
- While readiness for dispatch instructions may be in hand from the perspective of most participants, AEMO is concerned that a significant challenge remains to schedule and execute the implementation of linear ramping at SCADA-connected facilities.

MC-1-MP-04 - WEMDE (ESS):

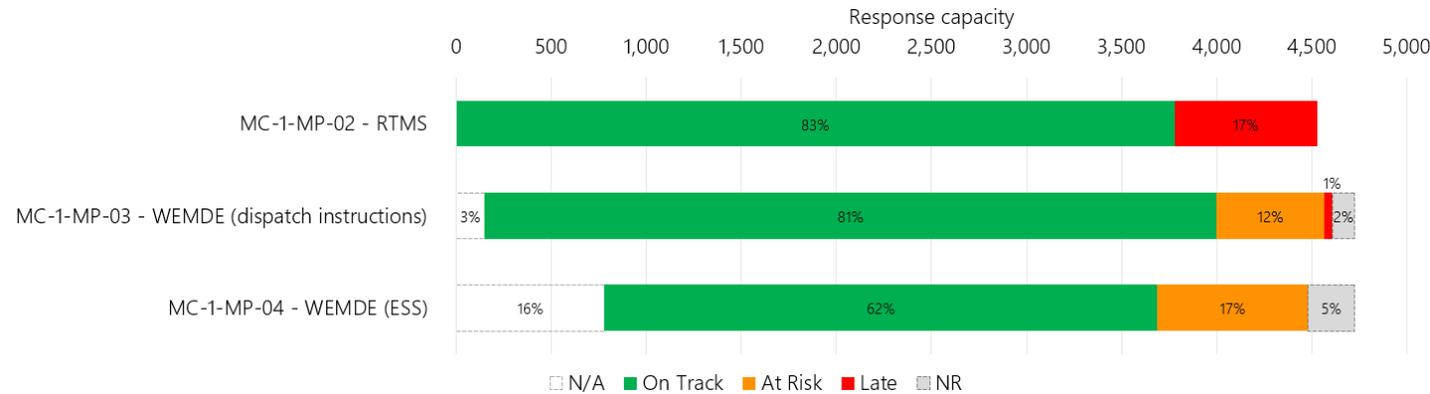
Relevant facilities are ready to provide Frequency Co-optimised ESS and /or Non Co-optimised ESS.

- 4MW in 10 of facility capacity is reporting progress 75% or better, with 3MW in 10 reporting progress of 50-74%
- Less than 1MW in 10 report progress of 25 – 49%
- Facility capacity reporting status of **On Track** has decreased from 8MW in 10 in Survey 8 to 6MW in 10 and ~2MW in 10 are now reporting this as **At Risk** due to outstanding testing and the need to schedule outages to complete changes to operational technology
- While AEMO considers that the accreditation of adequate FCESS capacity is **On Track**, it is concerned by the significant share of **At Risk** reports.

High Risk Items: Progress



High Risk Items: Status



Market Participant Market Capabilities – Items with moderate intrinsic risk



MC-1-MP-06 - WEMDE (Consuming other data)

Can consume and act on continuously published market information.

- Almost three quarters of capacity reports progress of more than 50% with 2MW in 10 reporting progress in the 25-49% range.
- Most capacity (6MW in 10) reports status as **On Track** which is unchanged from survey 7 and 8.
- Almost 2MW in 10 report status as **Late** and almost 2MW in 10 report status as **At Risk**.
- AEMO recognises the importance of this capability for trading platforms and is dedicating significant resources to support this in RFM environ.

MC-3-MP-01 - Outage Management:

Able to submit and update equipment outages

- Nearly three quarters of the capacity reports progress of 50% or more.
- 2MW in 10 report progress in the 25-49% range and nearly 1MW in 10 report progress in the 1 – 24% range.
- Almost three quarters of capacity report status as **On Track** which is an increase of 20% from Survey 8.
- The **At Risk** responses have decreased from 3MW in 10 in Survey 8 to 1MW in 10 in this report, however, 2MW in 10 are reporting as **Late**.
- One MP remarked that a barrier to updating this tool continues to be a delay in finalising the rules and procedure.
- AEMO acknowledges the very significant delays in finalising the Outages WEMP, which it now expects to publish end of July.

MC-3-MP-03 - Commissioning Test:

Ready to manage facility commissioning testing.

- Half of the capacity reports progress of 50% or more which is unchanged from Survey 8.
- 2MW in 10 report progress of 1-24
- Reports of **On Track** decreased from 82% in Survey 7 to 71% in Survey 8 and only 54% in Survey 9
- 4MW in 10 reporting status as **At Risk**
- Overall, AEMO is comfortable with how this item is tracking.

MC-4-MP-04 – Registrations (Facility-level)

Comply with all facility registration requirements.

- Three quarters of facility capacity report progress of 50% or more.
- Almost 2MW in 10 report progress of 1 -24%
- Nearly all capacity reports status as **On Track**.
- Overall, AEMO is comfortable with how this item is tracking.

Mod. Risk Items: Progress



Mod. Risk Items: Status



Market Participant Market Capabilities – Items with low intrinsic risk (cont'd)



MC-3-MP-02 - PASA (MT & ST):

- Understand and respond to ST & MT PASA outcomes and comply with information provision requirements.
- Just over half of facility capacity reporting progress of 50% or more.
- Most facility capacity reporting **On Track** (5.5MW in 10) but a minority (2.5MW in 10) reports as **At Risk** which is slightly increased from the previous survey.

MC-3-MP-04 - GPS

- Compliant with generator performance standards framework
- 6MW in 10 report progress of 50% or more.
- Around three quarters of capacity reports this item as **On Track**, unchanged from Survey 7 and 8, and nearly 2MW in 10 report as **Late**.
- AEMO and Western Power continue to progress their GPS workloads. AEMO recognises that all tasks may not complete prior to Go-Live, but this should not jeopardise the transition.

MC-4-MP-01 - Settlements Reform:

- Able to complete settlement under new arrangements (including prudentials, CCA, IRCR)
- Only 5MW in 10 report progress of 50-74% compared to 7MW in 10 last survey.
- 4MW in 10 facility capacity report progress of 1-24%.
- 6MW in 10 facility capacity report this item **On Track**.
- 2.5MW in 10 facility capacity report this item **At Risk** and nearly 2MW in 10 report as **Late**.
- AEMO acknowledges the impact that severe delays in delivering settlements system testing opportunity has impaired participant readiness – though it does not consider this creates significant Go-Live risks.

MC-4-MP-02 - STEM:

- Able to participate in STEM, following consequential modifications to this market.
- Just over half of facility capacity reporting progress of 50% or more.
- 3MW in 10 facility capacity is reporting progress of less than 25%, unchanged from Survey 7 and 8.
- Just over half of facility capacity reporting **On Track**, 2.5MW in 10 reporting **At Risk** and 1.5MW in 10 as **Late**.

MC-4-MP-03 - Registrations:

- Comply with all participant registration requirements.
- Nearly three quarters of facility capacity report progress of 50% or more.
- Nearly 2MW in 10 report progress of 1-24% and 1MW in 10 report progress of 25-49%.
- Improved from last survey, now all capacity are reporting **On Track**.

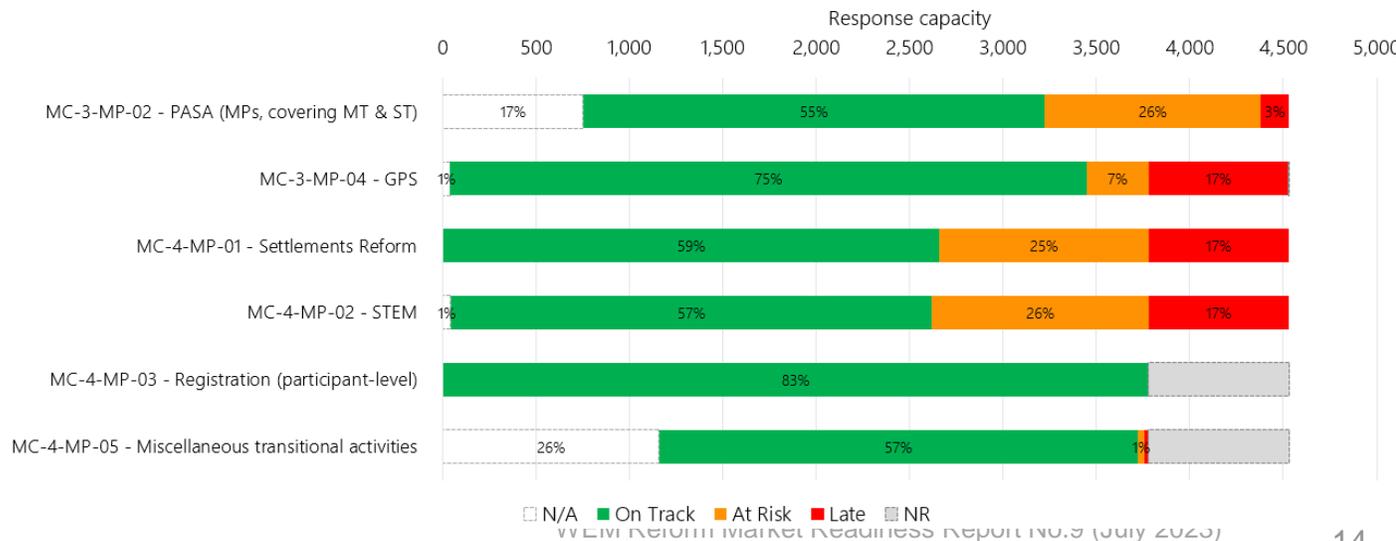
MC-4-MP-05 - Miscellaneous transitional:

- Miscellaneous transitional requirements – a catchall for other miscellaneous readiness requirements not covered by other capabilities.
- Just over half of facility capacity report progress of 50% or more with nearly 2MW in 10 capacity reporting under 24% progress.
- Just over half of facility capacity reporting **On Track**, with the remaining N/A or N/R

Low Risk Items: Progress



Low Risk Items: Status



Results for Other Reporting Entities



Market Participant Market Capabilities – Items with low intrinsic risk



MC-1-MP-01 - Constraint Management:

Able to retrieve and assess constraint information to inform trading and investment decisions

- Just over half of facility capacity is reporting progress of 50% or more.
- Nearly 2MW in 10 are reporting progress of 25 – 49% and nearly 1MW in 10 are reporting progress of 1 – 24%.
- **At Risk** status has decreased from Survey 8 to just under 2MW in 10.
- **On Track** status has increased from Survey 8 to 8MW in 10
- AEMO is comfortable with how this item is tracking for Go-Live purposes.

MC-1-MP-05 - Commercially prepared for SCED

Participant-specific, but may include revision of contracts, trading practices, financial arrangements.

- Overall, AEMO is encouraged that just over half capacity is reporting progress of 50% or more. Capacity reporting 25 – 49% progress has remained unchanged from Survey 8 with 4MW in 10.
- There is now only 1 MP reporting status as **Late**.
- **At Risk** is reduced to just under 2MW in 10 and **On Track** is increased to just over 6MW in 10.

MC-2-MP-01 - RCM - Year 1:

Understand new obligations and submission changes for Year 1 of 2021 and 2022 Reserve Capacity Cycle

- 6MW in 10 are reporting over 50% complete with over 3MW in 10 reporting as 100% complete.
- All facility capacity are reporting **On Track**.
- AEMO is comfortable with how MC-2-MP-01 tracking from the perspective of participants being ready for Go-Live.

MC-2-MP-02 - RCM - Year 2:

Understand NAQ impacts and process changes for the 2022 Reserve Capacity Cycle.

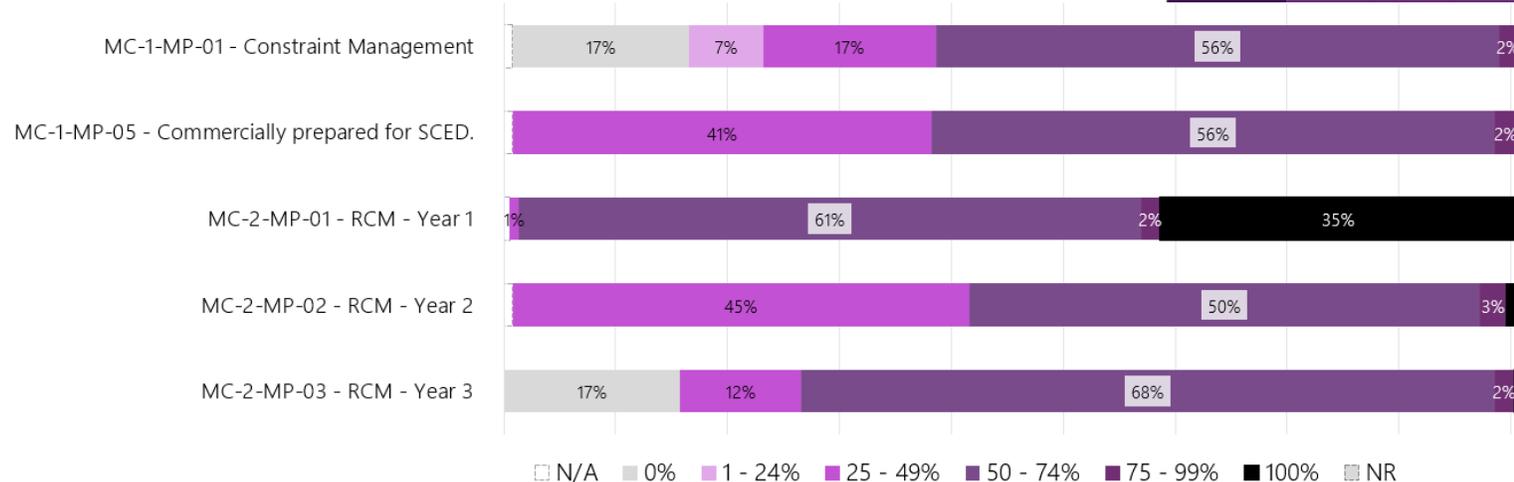
- Just over half of facility capacity is reporting progress of 50% with remaining capacity reporting progress of 25-49%.
- Nearly all facility capacity is reporting status **On Track**.
- AEMO remains comfortable with how the item is tracking.

MC-2-MP-03 - RCM - Year 3:

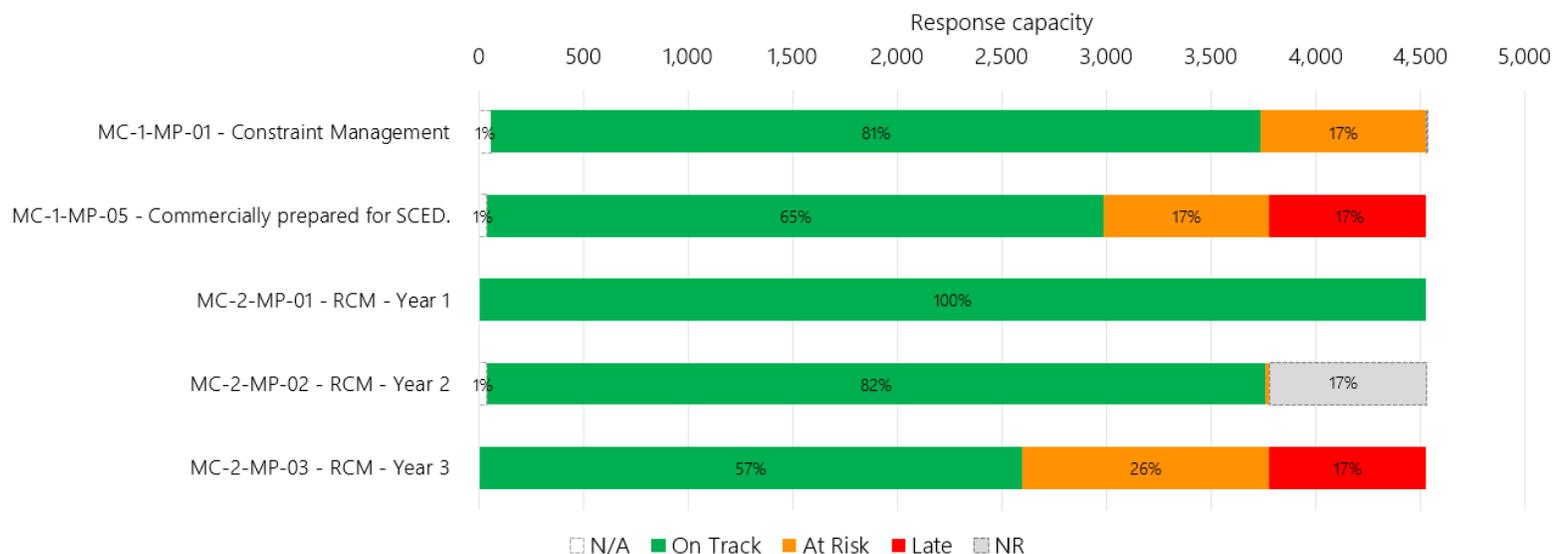
Understand new obligations for Year 3 of 2021 Reserve Capacity Cycle, including settlements.

- Two thirds of the capacity report progress over 50%.
- 1MW in 10 reported progress of 25-49 and nearly 2MW in 10 reporting progress of 0%.
- More than 5MW out of 10 reported status as **On Track** for this item.
- Facility capacity reporting **At Risk** has almost halved from previous survey to be 2.5MW in 10.

Low Risk Items: Progress



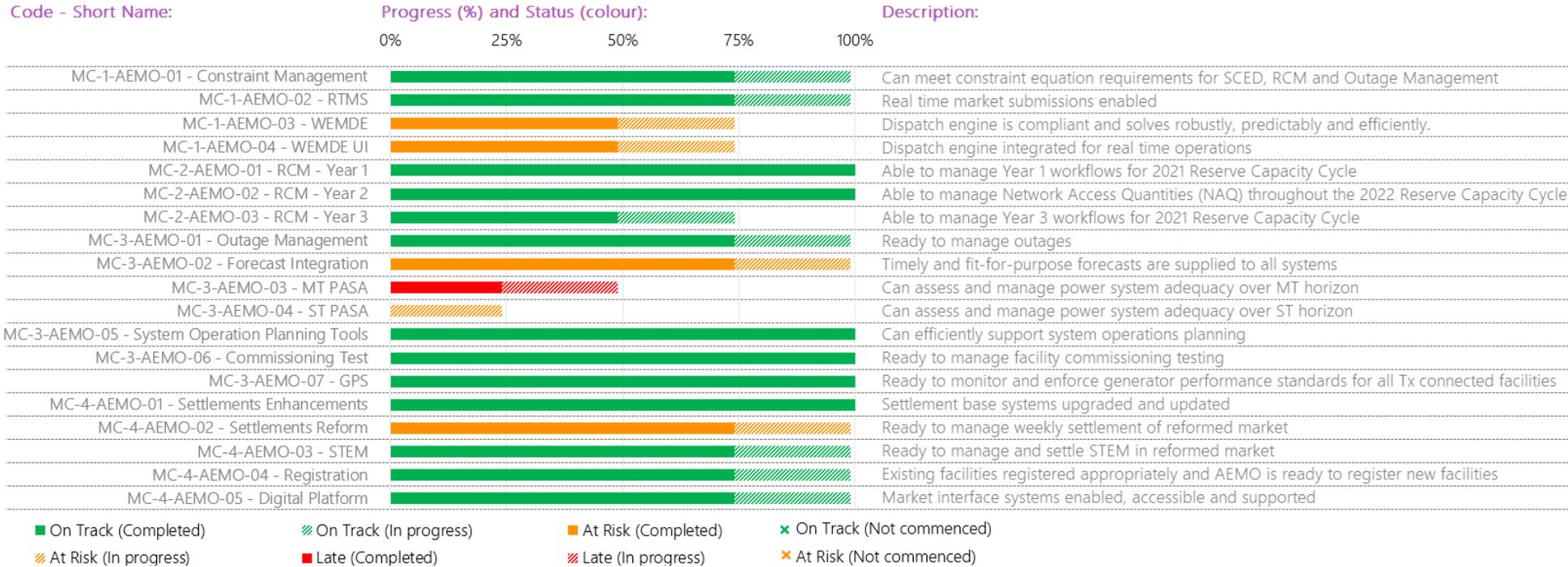
Low Risk Items: Status





AEMO's Readiness

Progress and status against all level 2 market capabilities



COMMENTS (cont.)

MC-3-AEMO-02 - Forecast Integration: Completed an upgrade to the forecasting system (Metrix). Project closure was delayed by the release – hence “At Risk” status. Advisory and Data Publication functionalities are in progress. End-to-end testing in progress. Performance testing to complete end July.

MC-3-AEMO-03 - MT PASA: Project is significantly late. Delivery impaired by SME turnover. Late development imposes risks, but considered manageable (limited direct linkage to the real-time market).

MC-3-AEMO-04 - ST PASA: Project is late. Development of a tactical solution is commencing.

MC-3-AEMO-05 - System Operation Planning Tools: Completed.

MC-3-AEMO-06 - Commissioning Test: Completed.

MC-4-AEMO-02 - Settlements Reform: Development and point to point testing completed. End-to-end testing in progress. Issue arising from very large payload size for some reports – tactical solution identified, but yet to be implemented.

MC-4-AEMO-03 - STEM: Development and standalone testing completed. End-to-end testing in progress.

MC-4-AEMO-04 - Registration: Included in all end-to-end testing (limited scope for defects as upstream of other systems). Prod release 1 completed beginning July and on-track for release 2 mid-August.

MC-4-AEMO-05 - Digital Platform: All critical supporting infrastructure is in place or on track to be delivered in time.

Overall Program commentary provided next page

COMMENTS

MC-1-AEMO-01 - Constraint Management: Some development rework is underway. The work to build all remaining constraint equations required for go-live will continue through to Go-Live.

MC-1-AEMO-02 - RTMS: Project work is completed, participant testing has identified various defects – remediation in progress. End-to-end testing in progress. Performance testing to complete late July.

MC-1-AEMO-03 - WEMDE: Additional resources added to support continuing development, testing and defect resolution. Integration with

Registrations and WEMDE Formulation certification are completed. End-to-end testing in progress. Performance testing to complete early August. Development work will continue post-Go-Live – hence progress reported below 75%.

MC-1-AEMO-04 - WEMDE UI: Core functionality to be tested in Coordinated Market Trial complete with participant testing to commence in late July. Development of Market Advisory and Data Publication functionalities are in progress. End-to-end testing in progress. Performance testing to complete early August. Development work will continue post-Go-Live – hence progress reported below 75%.

MC-2-AEMO-01 - RCM - Year 1: Completed.

MC-2-AEMO-02 - RCM - Year 2: Completed.

MC-2-AEMO-03 - RCM - Year 3: Additional resources added to enhance work development and testing. Integration and End to End testing are in progress.

MC-3-AEMO-01 - Outage Management: Development complete. Outage Management Procedure is significantly late – expected to publish for consultation in July. End-to-end testing in progress.

AEMO's readiness overall

WEM Reform Program Status

- At Stage Gate 1 (27 June), WEM Reform SteerCo determined to proceed to Stage Gate 2 (31 July)
- Multiple critical issues identified – must be resolved to allow the Program to proceed past Stage Gate 2.
- Program status has been set to Amber, pending reassessment of these critical issues at Stage Gate 2.

Key Achievements

- First production release of new registration system completed early July and next round of production releases on track for mid-August.
- Completed last major integrated release for Go-Live – integration testing, performance testing, business training and testing, as well as participant testing are all underway.
- Market suspension framework will be ready for participant consultation by start of August.

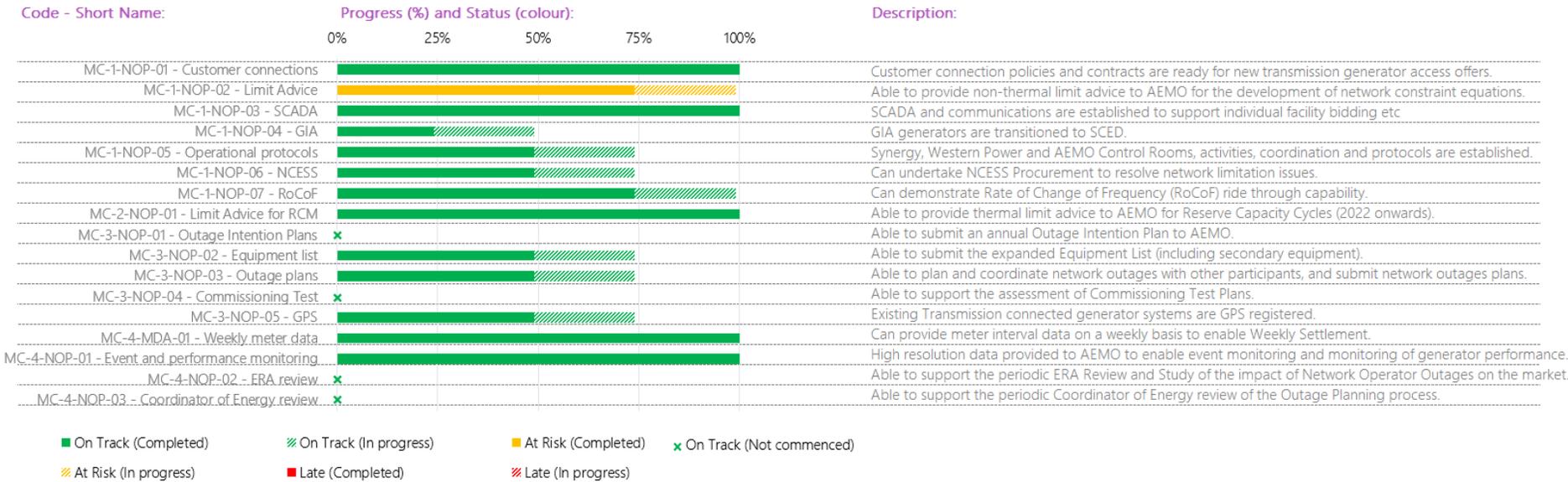
Key Risks and Mitigations

- Stage Gate 2 is the last opportunity for SteerCo to determine that a delay should be sought from Govt.
- To proceed past 31/7, AEMO must be confident that adequate technical, business, and market readiness (accounting for contingency plans) will be achieved.
- Key areas on which AEMO's assessment will likely turn are:
 - Early integration and business testing outcomes, especially for WEMDE, Real Time Operations and Settlements.
 - Confirmation that suitable rule and system changes to implement market suspension events are on track.
 - Adequate progress on SCADA readiness for both AEMO and Market Participants.



Western Power's Readiness

Progress and status against all level 2 market capabilities



Western Power comments

MC-1-NOP-01 - Customer connections: Customer policies and contracts updated and available on Western Power website (Aug 2021).

MC-1-NOP-02 - Limit Advice: WEM Procedure for Developing Limit Advice published (April 2021). Non-thermal Limit Advice for System Normal submitted to AEMO (Jun 2022). Non-thermal Limit Advice for AEMO Priority Circuits submitted to AEMO (Oct 2022), AEMO has yet to finalise all sets. Risk flagged with AEMO that earlier finalisation is a preference for Western Power to ensure that Western Power has capacity to provide any required updates ahead of the new market, as resources are now required to focus on "business as usual" and producing limit advice for post-market start. Non-thermal Limit Advice for planned outages at market start to be submitted to AEMO (Jul 2023). Internal processes and systems and resource structure to be defined and implemented (ahead of Jul 2023).

MC-1-NOP-03 - SCADA: All SCADA and communications have been established for all Market Participants that have requested them.

The final request was made to Market Participants to advise Western Power of any remaining SCADA work required to enable an existing Market Participant facility to participate in the new market. (WRIG 9 Feb 2023). New requests are now subject to Western Power's Customer Project lead times.

MC-1-NOP-04 - GIA: Western Power will need to develop and resource a plan to support AEMO activities to transition GIA generators from the GIA tool to WEMDE (Jul 2023). Development of this plan is dependent on AEMO sharing their Cutover Plan (& Rollback Plans) with Western Power (expected to commence in 2023 Q2).

MC-1-NOP-05 - Operational protocols: Synergy, AEMO and Western Power Control Rooms have commenced engagement, AEMO will continue to lead this engagement. AEMO / Western Power Operating Protocol published (Oct 2022). Internal processes and systems specific to the control room will be reviewed for change based on the outcomes of the Operating Protocol update and wider WEM Rules amendments.

MC-1-NOP-06 - NCESS: The NCESS framework has been applied for in progress Network Control Services (NCS) commercial events.

Network Opportunity Map 2022 published (Oct 2022). Transmission System Plan 2022 published (Feb 2023). The NOM and TSP include potential non-network solutions that would be procured in accordance with NCESS. The existing Network Control Services (NCS) process and systems is being revised to align with the NCESS Framework. The revised process will be tested with the (first) next Western Power NCESS Trigger Event. Western Power has commenced discussions with Energy Policy WA on interpretation of Network Operator triggers.

MC-1-NOP-07 - RoCoF: Western Power submitted its application for RoCoF Accreditation 20 June 2023]. AEMO response made on 7 July 2023 requesting additional information.

MC-2-NOP-01 - Limit Advice for RCM: Thermal Limit Advice to enable the 2022 Reserve Capacity Cycle has been provided to AEMO (June 2022). Final Thermal Limit Advice to enable the 2022 Reserve Capacity Cycle has been provided to AEMO (June 2023). Internal process and system updates have been finalised to support the future cycles.

MC-3-NOP-01 - Outage Intention Plans: Work has not commenced on the Outage Intention Plan as this is dependant on AEMO to finalise the WEM Procedure Outages for industry consultation (Sep 2022). Western Power is required to submit its inaugural Outage Intention Plan in Mar 2025.

MC-3-NOP-02 - Equipment list: The Equipment List will be shared outside of structured system integration and will instead follow a semi-manual process to share on update. Internal semi-manual processes are now required to be developed support this transaction.

MC-3-NOP-03 - Outage plans: Western Power to commence design. AEMO has advised that the next draft of the WEM Procedure Outages is to be shared in April 2023 with a final expected to be released for consultation Market Testing of the integration between Western Power and AEMO outage systems was planned to start in April 2023, this has been delayed by 1-month until mid-May 2023, as a result of issues in AEMO's preceding test phase and environments. Implications of the delay to future phases and Go Live unclear as the scope for Market Trials is not yet understood, however Western Power may need to investigate re-assignment of key resources to other activities should the delays extend beyond the current forecast date.

MC-3-NOP-04 - Commissioning Test: Expected Awaiting AEMO's release of the WEM Procedure Commissioning Test.

MC-3-NOP-05 - GPS: WEM Procedures published (Feb 2021). Generator Performance Standards: Relevant Generator Modification Guideline published (Jul 2022). Generator Performance Standards: Guideline for the Assessment of Technical Requirements final published (Dec 2022). The first generating system has been registered under the new Generator Performance Standards (Jan 2023). Assessment of Existing Transmission Connected Generators GPS assessments continue with engagement from Market Participants and AEMO.

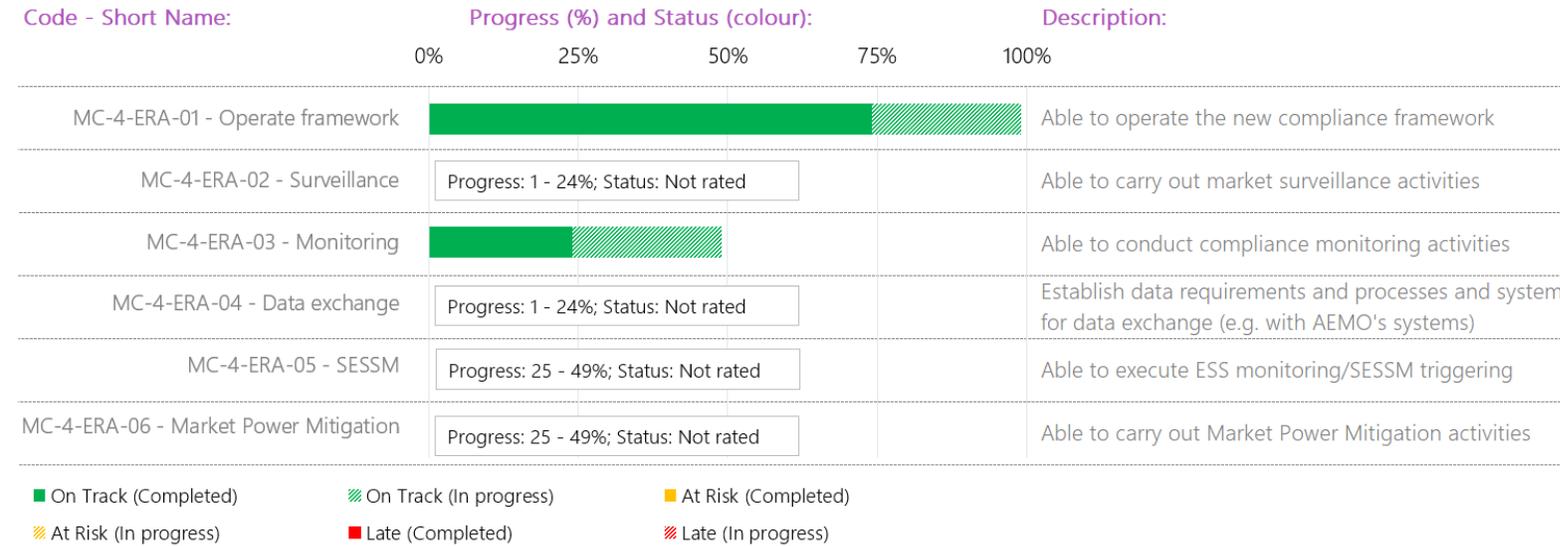
MC-4-MDA-01 - Weekly meter data: Market testing commenced in April 2023 and will continue until the end of the month. Go Live on track for WEM Commencement.

MC-4-NOP-01 - Event and performance monitoring: Manual process implemented (Oct 2021). Data is being provided to AEMO as required.

MC-4-NOP-02 - ERA review: Awaiting further information. Internal processes and systems are required to be developed to enable this capability.

MC-4-NOP-03 - Coordinator of Energy review: Awaiting further information. Internal processes and systems are required to be developed to enable this capability.

Progress and status against all level 2 market capabilities



ERA comments

MC-4-ERA-01 - Operate framework: There is interdependency for this project with the work that EPWA is currently doing in terms of updates to the Regulations and changes to the compliance framework to be included in the WEM Rules. The ERA has developed a draft WEM procedure is developing related process and system changes based on the information current in the 29/4/23 WEM Companion Rules and the Regulation changes in Energy Regulations Amendment Regulations 2023 SL 2023/32. The ERA held a workshop in March 2023 on the WEM procedure and compliance priorities in the new market. Consultation on the procedure is intended to be held in late June 2023 with the WEM procedure finalised by mid-Q3 2023. However, the exact timing for this will be dependent on the finalisation of EPWAs changes to the Regulations and WEM Rules. Associated internal process and system changes will be made concurrently.

MC-4-ERA-02 - Surveillance: The ability of the ERA to conduct market monitoring and surveillance is highly dependent on AEMO's data provision. Work with AEMO

to confirm the data provision framework is ongoing with some clarity achieved on the desired information, but the ERA awaits clarity on the mechanism and implementation timing from AEMO.

MC-4-ERA-03 - Monitoring: The ERA's compliance and monitoring functions in the new market are dependent upon the data interfaces with AEMO's systems through the market surveillance data catalogue. AEMO's access to subject matter experts is ongoing. Resources have been assigned and funding requested, however AEMO is yet to confirm the data transfer mechanism.

MC-4-ERA-04 - Data exchange: ERA will need to have data interfaces in place with AEMO's systems. This will be largely dependent on AEMO's intended design for data sharing arrangements with the ERA (and EPWA) for the new market. While a degree of clarity on the data elements has been achieved, ERA and EPWA are awaiting further information from AEMO on the proposed data transfer mechanism including potential interim solutions, data dictionary and schema, and the timing for when these solutions can be in place.

MC-4-ERA-05 - SESSM: In June 2023, the ERA's Governing Body approved the

draft WEM Procedure (ERA triggering the SESSM) for consultation with stakeholders. The draft WEM Procedure will be published for consultation with the ERA's other new WEM Procedure (Portfolio Determination). Stakeholders will be invited to participate in an online workshop on the new WEM Procedures during the consultation period. The ERA is on track to publish the updated WEM Procedures in the month prior to new market start.

MC-4-ERA-06 - Market Power Mitigation: In June 2023, the ERA's Governing Body approved the draft Offer Construction Guideline, Trading Conduct Guideline and new WEM Procedure (Portfolio Determination). The drafts will be published for a four-week consultation period and stakeholders will be invited to participate in an online workshop on the new Guidelines and WEM Procedures during the consultation period. The ERA is on track to publish the updated Guidelines and WEM Procedures in the month prior to new market start.

Next steps

- Continue with bi-monthly surveys and reporting cycle using the specific readiness criteria (market capabilities) reported against here.
- Release schedule:

| Survey/Report Number | Market Readiness Survey | Market Readiness Report |
|----------------------|-------------------------|-------------------------|
| 10 | End Jul 2023 | End Aug 2023 |

Appendices

AEMO's reasoning for risk ratings against Participant Market Capabilities

| Risk | Market Capability | Risk rating rationale |
|--------|--|--|
| High | MC-1-MP-02 - RTMS | A facility cannot participate in the real-time market (RTM) unless the participant can make submissions, which could in turn prevent AEMO from having access to this generating capacity and jeopardise system security. |
| High | MC-1-MP-03 - WEMDE (dispatch instructions) | If a significant proportion of facilities cannot receive and respond to Dispatch Instructions, this could jeopardise system security. |
| High | MC-1-MP-04 - WEMDE (ESS) | If a sufficient fleet of facilities are not ready to provide FCESS, WEMDE will be unable to reliably dispatch enough FCESS to maintain system security. |
| Medium | MC-1-MP-06 - WEMDE (Consuming other data) | The ability to consume market information is important from the perspective of participants that intend to monitor and respond to market conditions - for instance making use of the Look aheads to make trading decisions. AEMO doesn't consider this capability to be essential for the operation of the real-time market, but accepts that it is important commercially and time consuming for participants to build. |
| Medium | MC-3-MP-01 - Outage Management | A participant that lacks the ability to submit/log planned and forced outages will face compliance challenges and/or impose additional administration burdens on AEMO. However, provided that participants reflect facility availability in their RTM Submissions, WEMDE will continue to be able to solve correctly. |
| Medium | MC-3-MP-03 - Commissioning Test | Shortly after Go Live, some facilities are expected to need to submit Commissioning Test Plans (CTPs). An inability to use the new systems and processes may raise compliance issues for participants and administrative overheads for AEMO, but risks to system security should be manageable. |
| Medium | MC-4-MP-04 - Registration (Facility-level) | Facility classification and facility standing data must be accurate and complete given the dependencies of downstream systems on this information, including RTMS and WEMDE. A failure among participants to be ready to use the new system and processes will impose an administrative burden on AEMO, but risks to system security should be manageable. |
| Low | MC-1-MP-01 - Constraint Management | The information provided via the Congestion Information Resource is not required by participants to support real-time operations. Further, information on invoked constraints will be published via WEMDE UI anyway. |
| Low | MC-1-MP-05 - Commercially prepared for SCED. | The collective system/market has limited stake in the commercial readiness of individual firms. Rather this is an important area of work from the perspective of individual firms. |
| Low | MC-2-MP-01 - RCM - Year 1 | The Reserve Capacity Mechanism (RCM) doesn't strongly affect the RTM, thus this is similar to MC-1-MP-05. |
| Low | MC-2-MP-02 - RCM - Year 2 | The RCM doesn't strongly affect the RTM, thus this is similar to MC-1-MP-05. |
| Low | MC-2-MP-03 - RCM - Year 3 | The RCM doesn't strongly affect the RTM, thus this is similar to MC-1-MP-05. While participants may face unexpected refunds if they are not aware of their obligations around RTM that arise from RCM, AEMO does not consider this a systemic risk. |
| Low | MC-3-MP-02 - MT & ST PASA | The ability to consume PASA reports isn't required by participants to support real-time operations. While AEMO needs participants to provide the data necessary to support MT PASA, the risk of non-compliance is considered manageable. |
| Low | MC-3-MP-04 - GPS | Completing GPS will provide better information that improves planning and operational decision making and thus reduces risks. But the system/market can proceed without realising those benefits immediately (for instance because some generators haven't completed their GPS/GMPs). |
| Low | MC-4-MP-01 - Settlements Reform | Participants will vary in how sophisticated they wish to be in their systems to verify and reconcile settlement data, but provided they can download an invoice and pay it, the systemic risk posed by some firms not being ready in this area should be low. |
| Low | MC-4-MP-02 - STEM | Participants that need to participate in STEM face minimal changes to be ready and their participation in STEM is, in any case, optional. Similarly, submitting a bilateral submission should be straight forward. As in the case of settlement, the systemic risks should be low. |
| Low | MC-4-MP-03 - Registration (Participant-level) | Participant registration information should be straight-forward to update. |
| Low | MC-4-MP-05 - Miscellaneous transitional activities | At the moment, only one item is identified in this set and this item is considered to have a minimal impact on overall systemic risks (the item: Intermittent Loads, must have submitted all relevant information to support AEMO making a determination on contribution towards Contingency services). |

Survey invitees and response record since Survey 4

Note: reporting against specific readiness criteria was introduced with Survey 4



| PrimaryPID | Participant Name | All PIDs | Survey 4 | Survey 5 | Survey 6 | Survey 7 | Survey 8 | Survey 9 |
|------------|---|---|----------|----------|----------|----------|----------|----------|
| WPGENER | Synergy | WPGENER, WPRTL, MUMBIDA | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| ALINTA | Alinta Sales Pty Ltd | ALINTA, WALKAWAY | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| GRIFFINP | Bluewaters Power 1 Pty Ltd | GRIFFINP, GRIFFIN2 | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| NEWGEN | NewGen Power Kwinana Pty Ltd | NEWGEN | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| NGENEERP | NewGen Neerabup Partnership | NGENEERP, NGENNEER | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| PERTHNRGY | Perth Energy Pty Ltd | PERTHNRGY, WENERGY | FALSE | TRUE | TRUE | TRUE | TRUE | TRUE |
| MERREDIN | Merredin Energy | MERREDIN | FALSE | FALSE | FALSE | FALSE | TRUE | TRUE |
| GLDFLDPW | Goldfields Power Pty Ltd | GLDFLDPW, STHRNCRS | TRUE | FALSE | FALSE | FALSE | FALSE | FALSE |
| TSLA_MGT | Tesla Corporation Pty Ltd | TSLA_MGT, TSLA_GER, TSLA_HLD, TSLA_KEM, TSLA_NOR, | FALSE | TRUE | TRUE | FALSE | FALSE | TRUE |
| WARADGE | Bright Energy Investments | WARADGE, ALBGRAS, GRENOUGH, GRNOUGH | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| TIWEST | Tronox | TIWEST | TRUE | FALSE | TRUE | TRUE | TRUE | TRUE |
| KWINWTE | Kwinana WTE Project Co Pty Ltd | KWINWTE | TRUE | FALSE | TRUE | TRUE | TRUE | TRUE |
| ALCOA | Alcoa | ALCOA | TRUE | FALSE | TRUE | FALSE | TRUE | TRUE |
| ERRRF | East Rockingham RRF Project Co Pty Ltd | ERRRF | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE |
| PREMPWR | Wesfarmers Kleenheat Gas Pty Ltd | PREMPWR | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| COLLGAR | Collgar Wind Farm | COLLGAR | FALSE | TRUE | TRUE | TRUE | TRUE | TRUE |
| EDWFMAN | EDWF Manager Pty Ltd | EDWFMAN | FALSE | TRUE | TRUE | TRUE | TRUE | TRUE |
| SUNAU22 | Merredin Solar Farm Nominee Pty Ltd | SUNAU22 | FALSE | FALSE | FALSE | TRUE | TRUE | TRUE |
| LNDLLGP | Landfill Gas and Power Pty Ltd | LNDLLGP | TRUE | TRUE | FALSE | TRUE | TRUE | FALSE |
| WGRES | Waste Gas Resources Pty Ltd | WGRES | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| MBARKER | Mt. Barker Power Company Pty Ltd | MBARKER, DCWL, SKYFRM | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| NSFPTNRS | Northam Solar Project Partnership | NSFPTNRS | TRUE | FALSE | TRUE | FALSE | FALSE | TRUE |
| MPOWER | Metro Power Company Pty Ltd | MPOWER | TRUE | FALSE | TRUE | TRUE | FALSE | TRUE |
| CTE | CleanTech Energy | CTE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| BLAIRFOX | Blair Fox Pty Ltd AFT The Blair Fox Trust | BLAIRFOX | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| ENERNOC | Enel X Australia Pty Ltd | ENERNOC | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE |
| KARARA | Karara Energy | KARARA | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| WATERCP | Water Corporation | WATERCP | FALSE | TRUE | TRUE | TRUE | TRUE | TRUE |
| NWMNTMN | Northern Star | NWMNTMN | TRUE | FALSE | FALSE | FALSE | FALSE | TRUE |
| SIMCOA | Simcoa Operations | SIMCOA | FALSE | FALSE | FALSE | FALSE | TRUE | TRUE |
| ERMPOWER | ERM Power Retail Pty Ltd | ERMPOWER | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| EGPA | Moonies Hill Energy | EGPA | FALSE | FALSE | TRUE | FALSE | FALSE | TRUE |