

WEM Reform - Criteria for Market Readiness Reporting

June 2022

For Consultation

A draft version of the proposed WEM Reform Program's
Market Readiness Survey Specific Criteria





Important notice

Purpose

This document has been prepared to seek feedback from stakeholders in the WEM Reform Program on AEMO's proposed approach to the second phase of its Market Readiness Reporting process.

Disclaimer

This document or the information in it may be subsequently updated or amended. This document does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about the National Electricity Law, the National Electricity Rules, or any other applicable laws, procedures or policies. AEMO has made every effort to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

Version control

Version	Release date	Changes
1	1/06/2022	



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1 Introduction

1.1 Context

The WEM Reform Market Readiness Engagement & Reporting Strategy (Strategy)¹ explains the general approach to the Market Readiness Survey and the Market Readiness Reporting for the WEM Reform. The strategy centres on stakeholders self-assessing their progress and status against agreed market readiness criteria and AEMO reporting this to the broader industry. The Strategy explains that readiness reporting will be introduced in two stages with general readiness reporting introduced first, followed by the introduction of the specific readiness criteria reporting. Each type of reporting entity will be requested to report against a set of specific readiness criteria appropriate to their role(s) in the WEM.

AEMO, Western Power and the Economic Regulation Authority (ERA) have each developed specific readiness criteria that reflects their unique readiness work programs. AEMO has developed specific readiness criteria that reflects the requirements for Market Participant readiness.

In this document, AEMO sets out:

- The approach to the specific readiness criteria survey and reporting including the framework of market capabilities that AEMO has used to define the specific readiness criteria;
- The specific readiness criteria proposed for Market Participants; and
- Information AEMO proposes to ask Market Participants to consider and provide for the purposes of responding to the Market Readiness Survey.

1.2 Purpose of Specific Readiness Criteria

The specific readiness criteria will form the basis for the Market Readiness Survey from July 2022. The specific readiness criteria specify the outcomes that each party is expected to achieve to be ready. By capturing the status and progress responses against these specific readiness criteria in the survey, AEMO aims to ensure readiness reporting is meaningful, verifiable, reliable and consistent.


1.3 Consultation

Stakeholders are invited to provide feedback on any aspect of the approach proposed in this paper, by emailing comments to wa.ets@aemo.com.au.

In particular, Stakeholders are invited to consider the following when developing responses.

Approach: Are you comfortable with the proposed readiness survey approach? If not, what suggestions for change do you have? Aspects of the approach you may wish to comment on may include, but need not be limited to the following:

¹ AEMO, 2021, <https://aemo.com.au/-/media/files/initiatives/wem-reform-program/wem-reform-market-readiness-engagement--reporting-strategy.pdf?la=en&hash=47D42069138181C1ED4AF54BE9773DA0>

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- survey frequency
 - the proposed standard set of questions
 - the proposed permitted responses
 - the choice of survey platform (existing platform: CheckBox)
 - survey behaviour
 - analysis and reporting
 - approach to anonymity and confidentiality.

Level 2 Capabilities: In relation to the AEMO and Market Participant Level 2 Market Capabilities:

- Are the proposed Level 2 Market Capabilities comprehensive?
- Do the Level 2 Market Capabilities adequately cover the main matters that Market Participants will need to address to achieve market readiness?
- Are there any proposed changes to the Level 2 Market Capabilities?
- Do the proposed Level 2 Market Capabilities appropriately balance specificity and efficiency? Will the effort required to report status and progress against these capabilities support readiness reporting to the right level of detail?

Level 3 Capabilities: Would you suggest any changes to the proposed Level 3 Market Capabilities?

2 Our Market Capabilities Framework

2.1 Summary

The specific readiness criteria are described in a three-level hierarchy of “Market Capabilities” comprising:

- Level 1 Market Capabilities: generic, very high-level capabilities that are convenient to organise the requirements across all reporting entities.
- Level 2 Market Capabilities: capabilities specific to a given type of entity, which will be reported against by survey respondents
- Level 3 Market Capabilities: additional detail and descriptors to elaborate the scope of each Level 2 item to support meaningful reporting across diverse individual respondents

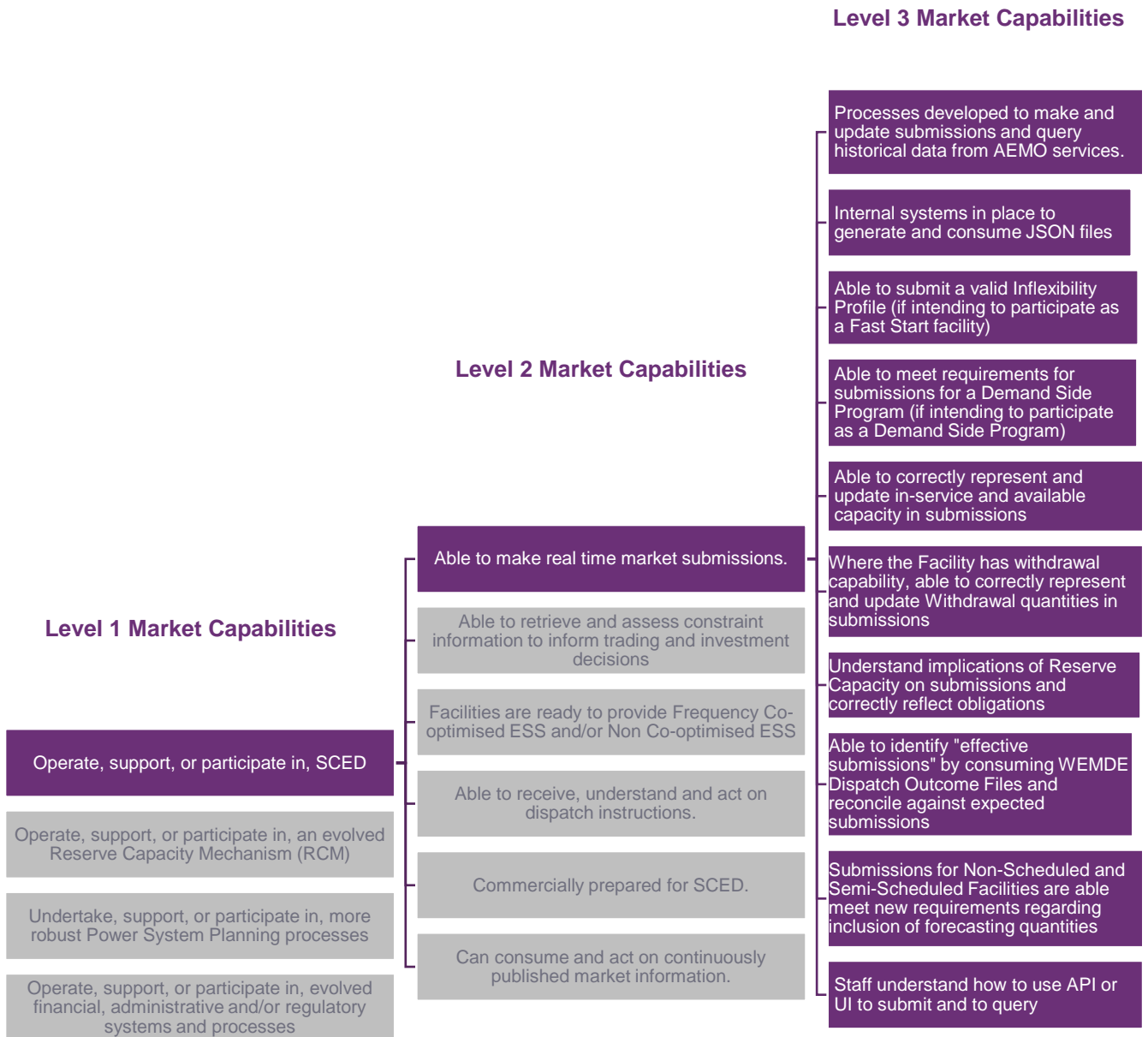
The general principles for the Market Capabilities are summarised in the following figure.

Figure 1 Principles guiding the specification of Market Capabilities



The following figure provides an illustration of how the three levels of Market Capabilities may be structured. This example relates to the Level 2 Market Capability for a Market Participant to be “Able to make real time market submission” – one of several Level 2 Market Capabilities needed to establish the broad Level 1 Market Capability to be able to “participate in SCED”.

Figure 2 Illustration of the three-level hierarchy of market capabilities (Market Participants)





2.2 Level 1 Market Capabilities

The requirements established under the WEM Reforms can be described at the macro level as comprising four new Market Capabilities, namely to be ready and able to:

1. Operate, support, or participate in, Security Constrained Economic Dispatch (SCED)
2. Operate, support, or participate in, an evolved Reserve Capacity Mechanism²;
3. Undertake, support, or participate in, more robust power system planning processes; and
4. Operate, support, or participate in, evolved financial, administrative and/or regulatory systems and processes³.

AEMO envisages that these Level 1 Market Capabilities are sufficiently generic to encompass the capabilities to be established by AEMO, Market Participants, Western Power and the ERA.

For instance, the successful operation of the new SCED market (i.e. the first Level 1 Market Capability) will require:

- AEMO to operate the new market, for instance by establishing new and modified systems and processes
- Western Power to support the new market, for instance by providing planning information and building new or modified systems and processes; and
- Market Participants to participate in the new market, for instance by establishing the ability to make valid real-time market (RTM) submissions, submit outages and manage new data inputs.
- The ERA to access data relating to the operation of the RTM to undertake compliance monitoring and investigation activities.

The Level 1 Market Capabilities provide a means of organising the information collated from different types of reporting entities. They recognise that disparate tasks are required across various entities but that they are directed towards a small set of common goals. More specific Level 2 and Level 3 Market Capabilities are grouped under the four Level 1 Market Capabilities.

2.3 Level 2 Market Capabilities

Level 2 Market Capabilities will describe what a given entity needs to know and/or be ready to do to successfully operate, support or participate in the new WEM at go-live and thereby meet their obligations under the revised WEM Rules. AEMO is responsible for defining Level 2 Market Capabilities relating to Market Participants and AEMO. Western Power and ERA are responsible for defining their own Level 2 Market Capabilities.

The proposed Level 2 Market Capabilities for Market Participants are listed in the following sections.

² That is, an RCM that provides economic incentives consistent with SCED.

³ Processes consistent with a SCED market.



2.3.1 Reporting to focus on Level 2 Market Capabilities

The Level 2 Market Capabilities (and only Level 2) can be thought of as the specific readiness criteria. Respondents will be asked to report progress and status against Level 2 Market Capabilities only. Level 3 Market Capabilities are intended to elaborate and define the scope of the Level 2 Market Capabilities in a way that supports more meaningful responses.

2.3.2 Differences between reporting entities

Level 2 Market Capabilities must be separately defined for the four main types of reporting entity, namely AEMO, Western Power, ERA and Market Participants, since each type of entity performs very different roles in the market. Further, in the case of Market Participants the relevance and scope of Level 2 Market Capabilities will differ between individual respondents.

For instance, some Level 2 Market Capabilities won't be relevant to for some respondents (e.g. retailers won't need to develop the ability to schedule facility outages). Further, the scope of a given Level 2 Market Capability may differ depending on the types of facilities a respondent plans to have participate in the market (e.g. different types of real-time market submissions are required for a Demand Side Participation (DSP) scheme, compared to a generator).

2.3.3 Facility versus Participant Market Capabilities

Most of the proposed Level 2 Market Capabilities concern the knowledge, capabilities, systems and processes of Market Participants, rather than of the facilities they operate. The three exceptions to this rule are the Level 2 Market Capabilities relating to:

- dispatch instructions (MC-1-MP-03);
- FCESS participation (MC-1-MP-04); and
- facility registration (MC-4-MP-04).

When responding to a Level 2 Market Capability that concerns facility readiness, the respondent will be asked to provide a response for each facility that falls within the scope of its readiness reporting.

2.3.4 Proposed Level 2 Market Capabilities for Market Participants

The proposed Level 2 Market Capabilities for Market Participants are summarised in Table 1, on the following page.

Table 1 Proposed Level 2 Market Capabilities for Market Participants (Grouped by Level 1)

Level 1	Code	Abbrev.	Capability
MC-1 (SCED)	Operate, support, or participate in, Security Constrained Economic Dispatch (SCED)		
	MC-1-MP-01	Constraint Management	Able to retrieve and assess constraint information to inform trading and investment decisions
	MC-1-MP-02	RTMS	Able to make real time market submissions.
	MC-1-MP-03	WEM Dispatch Engine (Dispatch instructions)	Able to receive, understand and act on dispatch instructions.
	MC-1-MP-04	WEM Dispatch Engine (FCESS)	Facilities are ready to provide Frequency Co-optimised ESS and /or Non Co-optimised ESS
	MC-1-MP-05	Commercially prepared for SCED.	Commercially prepared for SCED.
	MC-1-MP-06	Publishing or consuming data (other)	Can consume and act on continuously published market information.
MC-2 (RCM)	Operate, support, or participate in, an evolved Reserve Capacity Mechanism (RCM)		
	MC-2-MP-01	RCM (Phase 1)	Understand new obligations and submission changes for Year 1 of 2021 and 2022 Reserve Capacity Cycle
	MC-2-MP-02	RCM (Phase 2)	Understand NAQ impacts and process changes for the 2022 Reserve Capacity Cycle
	MC-2-MP-03	RCM (Phase 3)	Understand new obligations for Year 3 of 2021 Reserve Capacity Cycle, including settlements
MC-3 (System Planning)	Undertake, support, or participate in, more robust Power System Planning processes		
	MC-3-MP-01	Outage Management	Able to submit and update equipment outages
	MC-3-MP-02	MT PASA	Understand and respond to ST & MT PASA outcomes and comply with information provision requirements
	MC-3-MP-03	Commissioning Test	Ready to manage facility commissioning testing
	MC-3-MP-04	GPS	Compliant with generator performance standards framework
MC-4 (Mkt Ops & Admin)	Operate, support, or participate in, evolved financial, administrative and/or regulatory systems and processes		
	MC-4-MP-01	Settlements Reform	Able to complete settlement under new arrangements
	MC-4-MP-02	STEM	Able to participate in STEM, following consequential modifications to this market
	MC-4-MP-03	Registration (Participant-level)	Comply with all registration requirements
	MC-4-MP-04	Registration (Facility-level)	Comply with all facility registration requirements

See Section 4 for full set of level 1, 2 and 3 Market Capabilities.



2.4 Level 3 Market Capabilities

Level 3 Market Capabilities are used to elaborate and define the scope of Level 2 Market Capabilities and are to support respondents in understanding and responding to the survey. They will assist in the consistency of reporting across multiple entities. Not all Level 3 market capabilities will be applicable to all respondents.

AEMO plans to define and publish separate Level 3 Market Capabilities for Market Participants, both to:

- support good quality progress and status reporting (respondents have a sound understanding of the scope of activities to be reported on); and
- organise supporting materials and information such that Market Participants can readily find additional detail to inform their activities to implement a given Level 2 Market Capability.

The draft list of Level 3 Market Capabilities for Market Participants is provided in Section 4. These will be published and updated as necessary in the form of revisions to a guidance document based on this consultation paper. AEMO will include references and links in subsequent versions of the document to assist Market Participants to locate resources and guidance that provide the next level of detail required to establish each Level 3 Market Capability.

In addition to doing the above, AEMO will define and publish Level 3 Market Capabilities for AEMO's capabilities in the interests of transparency (see Section 5).

2.5 Additional Information

2.5.1 Changes to Market Capabilities

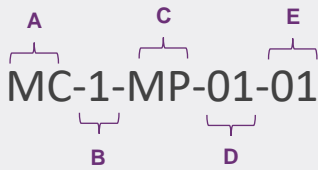
When the time the Market Readiness Survey is first run based on the above framework, AEMO expects that the Level 2 Market Capabilities (or specific readiness criteria) will remain relatively stable. AEMO considers there may be minor additions to the Level 2 Market Capabilities, however AEMO aims to maintain consistency of Level 2 Market Capabilities for all subsequent surveys, until Go-Live in October 2023.

In contrast, AEMO considers that the Level 3 Market Capabilities may expand or change over time and will be subject to ongoing amendment as more of the details of the design, processes and obligations under the new market are finalised – through the development of new systems, processes and artefacts. As Level 3 Market Capabilities are for descriptive purposes, this will support improved understanding and reporting consistency without compromising the reporting framework.

2.5.2 Reference Numbers

Market Capabilities will be given short reference numbers according to the naming convention illustrated in Box 1 below. The coding convention and the hierarchy are illustrated in Box 1 and Box 2, below.

Box 1: Breakout box X: Market Readiness Codes



A: A standing prefix which always takes the value “MC” (for Market Capability).

B: Level 1 Market Capability Code, with possible values 1 to 4.

C: Entity Code, being a letter string identifying the type of entity the Code relates to, with possible values:

“MP” (for Market Participant)

“AEMO”

“WP” (for Western Power); or

“ERA”

D: Level 2 Market Capability Code, with possible values 01 to X where X depends on the entity type (the number of Level 2 Market Capabilities for each entity type is independent).

E: Level 3 Market Capability Code, with possible values 01 to Y where Y depends on which Level 2 Market Capability is being elaborated (the number of Level 3 Market Capabilities for any Level 2 Market Capability is independent of other capabilities).

Box 2: Illustration of Market Capabilities Hierarchy

Level 1 Market Capability: Operate, support, or participate in, Security Constrained Economic Dispatch (SCED) [MC-1]

→ **Level 2 Market Capability (or “SRC”):** Able to retrieve and assess constraint information to inform trading and investment decisions [MC-1-MP-01]

→ **Level 3 Market Capabilities:** Market Participant:

Can consume constraint data from the Congestion Information Resource [MC-1-MP-01-01]

Can identify the impacts of constraints in WEMDE Dispatch Outcome Files [MC-1-MP-01-02]

Understands the commercial implications of constraints for both real-time and capacity markets [MC-1-MP-01-03]

3 Proposed Survey Approach

3.1 Survey Platform

AEMO proposes to continue using the CheckBox Survey app used for the first phase of market readiness reporting. There is scope to consider an alternative platform if required. Stakeholders are encouraged to advise any perceived shortcomings with the current platform or in the presentation or behaviour of the initial surveys to inform the choice of platform for the next phase of reporting.

3.2 Survey frequency

For this second phase of market readiness reporting (commencing July 2022) AEMO intends to issue the survey every two months, giving a two week response window with reports to be published two weeks later. AEMO recognises that this increases the administrative burden on respondents, but views this higher frequency reporting cadence as necessary to allow issues to be identified and responded to more quickly. Stakeholders should indicate if they consider a different frequency is more appropriate.

3.3 Target respondents

AEMO proposes to invite survey responses from the same set of entities that currently receive the Market Readiness Survey, namely:

- all registered Market Participants that are currently active in the WEM;
- any non-active, registered Market Participants (or entities with the potential to register soon), that have projects under development that plan to enter service prior to the New WEM Commencement Day;
- Western Power; and
- the ERA

In addition to the above set of existing respondents, AEMO will itself become a respondent to the survey in this next phase, reporting progress and status against Level 2 Market Capabilities in much the same manner as the entities above. Finally, if other businesses seek to register with the intention of participating in the new market on or around the New WEM Commencement Day – which is plausible in the case of a new retail business – AEMO may also invite them to participate in the survey.

3.4 High Level Survey Structure

The Survey questions are arranged in five separate sections, as described in the Table 2, below.

Table 2 Proposed main sections of Survey

Survey page	Topic	Scope of Content	Comments
Page 1	General Info	Organisation, Contact name, Contact email, Contact phone, Participant type, FCESS intentions, Number of registered facilities covered by this response	Responses drive the logic of how many instances of facility-level survey questions are presented on subsequent pages.
Page 2	MC-1 - Operate, support, or participate in, Security Constrained Economic Dispatch (SCED)		
Page 3	MC-2 - Operate, support, or participate in, an evolved Reserve Capacity Mechanism		
Page 4	MC-3 - Undertake, support, or participate in, more robust power system planning processes	Questions on Level 2 Market Capabilities under this Level 1 Market Capability.	Each Level 2 Market Capability has a dedicated set of questions against it. Further detail below.
Page 5	MC-4 - Operate, support, or participate in, evolved financial, administrative and/or regulatory systems and processes		

3.5 Response to Survey Questions

For each Level 2 Market Capability, respondents are presented with four standard questions, as explained below.

3.5.1 Q1 – Please advise the status of delivery of this capability (limited choice question, mandatory)

For each Level 2 Market Capability, the survey asks each respondent to indicate the status of their work to establish that capability. The proposed permitted responses are set out in Table 3 below.

Table 3 Proposed permitted responses to implementation status

Options	Description
● On track	Work to establish the capability is proceeding as planned
● At risk	Work has missed some milestones but overall end date is not at risk
● Off Track	Project is sufficiently off track that it is likely to deliver late
N/A	This capability is assessed by the respondent as not relevant to the business

3.5.2 Q2 – Please advise progress on delivery of this capability (limited choice question, mandatory)

For each Level 2 Market Capability, the survey asks each respondent to indicate the progress of work to establish that capability. The proposed permitted responses are set out in Table 4 below. Market Participant Respondents will be asked to identify for themselves whether a given capability is relevant to their organisation and can select “N/A” if they consider it isn’t.

Table 4 Proposed permitted responses to implementation progress

Options	Description	Examples
0%	Not started	
1 – 24%	Planning complete.	<ul style="list-style-type: none"> Regulatory changes understood Business requirements for system and process changes elaborated and approved
25 – 49%	System and/or process change delivery in progress.	<ul style="list-style-type: none"> Implementation commenced Key resources / contracts on board Development and testing commenced and on track
50 – 74%	System and/or process change delivery well underway. Operational readiness activities commenced.	<ul style="list-style-type: none"> UAT commenced Integration scoped Training needs identified Internal procedure documentation changes underway.
75 – 99%	System and/or process change delivery well advanced. Operational readiness activities well advanced.	<ul style="list-style-type: none"> UAT well-advanced Integration progressing Testing in trial / test underway Training underway Procedures developed
100%	System and/or process change delivery complete. Operational readiness activities complete.	<ul style="list-style-type: none"> Systems and processes handed over to operational teams All training complete Ready for go-live
N/A	This capability is assessed by the respondent as not relevant to the business	

3.5.3 Q3 – Please outline any items blocking progress regarding this capability and proposed actions / options to address (free text field, optional)

For each Level 2 Market Capability, respondents are provided a free text field to identify blockers relevant to that item (or to the Level 3 Market Capabilities that sit below it). The emphasis here should be on constraints and impediments that may be able to be addressed by the Market Participant, AEMO or other entities. Respondents are requested to share suggestions to address the issue.

AEMO acknowledges that Market Participants are reliant on the delivery of technical specifications. While AEMO is seeking to expedite the delivery of technical specifications as much as possible, respondents are encouraged to consider in their responses if other options (e.g. samples of transfer files provided prior to the release of a specification) are available to address blockers in the short-term.

3.5.4 Q4 – Please outline any other issues (free-text field, optional)

For each Level 2 Market Capability, respondents are given a free text field to raise any other issue arising from or bearing on their work on that capability.

3.6 Managing facility-related questions

Questions relating to the three facility-related Level 2 Market Capabilities identified in Section 2.3.3⁴ must allow for the respondent to separately report progress on establishing that capability for each individual facility. AEMO proposes to code the survey such that separate progress and status reporting fields appear in respect of each facility that the response must cover. For example, a respondent responsible for managing two registered facilities would need to report progress and status twice against each of the three facility-related Level 2 Market Capabilities. Further, AEMO will provide for the identity of the facility to be associated with the relevant instance of this field (ideally by AEMO pre-coding this information on behalf of the respondent).

AEMO proposes not to include multiple instances of the two free-text Q&A fields associated with each Level 2 Market Capability. Instead, respondents will be asked to identify which facilities their comments in these two fields relate to.

3.7 Reporting

AEMO will collate the Survey responses and prepare the Market Readiness Report using a PowerPoint format like that used for the current Market Readiness Reports⁵. The Report will include quantitative and qualitative analysis.

The quantitative analysis will include charts and tables presenting reported progress and status against Level 2 Market Capabilities across all types of entities. It will also include analysis of the changes in responses relative to the previous survey – highlighting areas where, since the previous survey:

- progress has been made and/or where it has stalled or reversed; and
- the status of participant work programs has improved or deteriorated, in aggregate.

The qualitative analysis is likely to include thematic analysis of free-text responses and quoting salient remarks where appropriate.

In the public version of all Market Readiness Reports, quoted remarks will not be attributed and AEMO will ensure that all data is reported in a manner that does not permit the identification of individual Market Participants (except Synergy). AEMO will respect the confidentiality of any information provided by respondents through the survey.

⁴ Dispatch instructions (MC-1-MP-03); FCESS participation (MC-1-MP-04); and facility registration (MC-4-MP-04).

⁵ See, for example, AEMO, March 2022, *WEM Reform Market Readiness Report No.2*, <https://aemo.com.au/-/media/files/initiatives/wem-reform-program/market-readiness-report.pdf?la=en&hash=B6FC58F85E665C33491455B43BC05335>



4 Proposed Market Capabilities for Market Participants

Table 5 below provides the complete list of Level 1, Level 2 and Level 3 Market Capabilities proposed for Market Participants. This detailed list is provided primarily to illustrate the approach described above. However, comments or questions concerning specific Market Capabilities are welcome.

Section Heading

Table 5 Proposed Level 2 Market Capabilities for Market Participants (Grouped by Level 1)

Section Heading

Level 1	Level 2	Level 3	Capability
MC-1 (SCED)			Operate, support, or participate in, Security Constrained Economic Dispatch (SCED)
	MC-1-MP-01 (Constraint Management)		Able to retrieve and assess constraint information to inform trading and investment decisions
		MC-1-MP-01-01	Can consume constraint data from the Congestion Information Resource
		MC-1-MP-01-02	Can identify the impacts of constraints in WEMDE Dispatch Outcome Files
		MC-1-MP-01-03	Know which constraints are associated with each participant facility, and understand how submissions can affect dispatch outcomes
	MC-1-MP-02 (RTMS)		Able to make real time market submissions.
		MC-1-MP-02-01	Processes developed to make and update submissions and query historical data from AEMO services.
		MC-1-MP-02-02	Internal systems in place to generate and consume JSON files
		MC-1-MP-02-03	Established workflows for confirming submissions status and validation outcomes
		MC-1-MP-02-04	Able to submit a valid Inflexibility Profile (if intending to participate as a Fast Start facility)
		MC-1-MP-02-05	Able to meet requirements for submissions for a Demand Side Program (if intending to participate as a Demand Side Program)
		MC-1-MP-02-06	Able to correctly represent and update in-service and available capacity in submissions
		MC-1-MP-02-07	Where the Facility has withdrawal capability (including where a Facility has large Withdrawal quantities during startup), able to correctly represent and update Withdrawal quantities in submissions
		MC-1-MP-02-08	Understand implications of Reserve Capacity on submissions and correctly reflect obligations, including allowance for Outages and Electric Storage Resource Obligation Quantities and Intervals
		MC-1-MP-02-09	Able to identify "effective submissions" by consuming WEMDE Dispatch Outcome Files and reconcile against expected submissions
		MC-1-MP-02-10	Submissions for Non-Scheduled and Semi-Scheduled Facilities are able meet new requirements regarding inclusion of forecasting quantities [Drafting Note 01/06/2022: AEMO notes that TDOWG is due to consider shortly what these requirements should be prior to EPWA finalising the Exposure Draft for Tranche 6 of the Amending Rules]
		MC-1-MP-02-11	Staff understand how to use API or UI to submit and to query
	MC-1-MP-03 (WEMDE – Dispatch instructions)		Able to receive, understand and act on dispatch instructions.
		MC-1-MP-03-01	Where dispatch is via SCADA, the necessary changes are made to SCADA interfacing systems (e.g. participant's Distributed Control System (DCS)) and Facilities respond correctly to dispatch instructions and other signals issued via the SCADA
		MC-1-MP-03-02	For non-SCADA dispatched facilities, systems and processes developed to receive, accept and acknowledge Dispatch Instructions.
		MC-1-MP-03-03	Know how to use the B2B system to obtain and manage information related to dispatch instructions
		MC-1-MP-03-04	Any additional SCADA points that are required have been commissioned (potentially applicable for some Fast Start plant) (See June 2021 WRIG Presentation, page 11)
		MC-1-MP-03-05	In the case of Facilities capable of Withdrawal (including facilities with large Withdrawal profiles during startup), ready to process Dispatch Targets and Dispatch Caps relating to withdrawal
		MC-1-MP-03-06	Synergy-specific tasks relating to the new control room and assuming responsibility for dispatch.

Section Heading

MC-1-MP-03-07	Understand and are able to meet the requirements of the Communications and Control WEM Procedure, Operational Data Points Technical Specification and AGC Technical Specification
MC-1-MP-03-08	Understand and are able to follow the processes in the Dispatch WEM Procedure (examples include: the circumstances in which MP must AEMO notify of something; circumstances in which MP must amend its offers; circumstances in which AEMO will issue directions)
MC-1-MP-03-09	Understand obligations and requirements around dispatch compliance, including all relevant dispatch tolerances
MC-1-MP-04 (WEMDE –ESS)	Facilities are ready to provide Frequency Co-optimised ESS and /or Non Co-optimised ESS
MC-1-MP-04-01	Accredited to provide ESS (where required to accredit or otherwise intending to supply)
MC-1-MP-04-02	Facilities accredited to provide FCESS can be activated and are ready to provide ESS
MC-1-MP-04-03	RoCoF Ride Through values submitted and accepted by AEMO
MC-1-MP-04-04	Understand how to interpret dispatch data to determine required and cleared FCESS quantities
MC-1-MP-04-05	Understand the System Restart Standard and the associated standard form contract (where intending to seek to provide System Restart Services)
MC-1-MP-04-06	Understand the Supplementary Essential System Services Mechanism, its triggers, AEMO's obligation to issue a SESSM Service Specification, the ERA's power to mandate participation, the basis on which AEMO will determine SESSM awards and an award holder's bidding obligations (where facilities are potentially capable of supplying FCESS).
MC-1-MP-04-07	Understand Local Black Start Guidelines and ensure Local Black Start Procedures are submitted to AEMO and up to date
MC-1-MP-04-08	Understand the processes for the provision and management of other NCESS services, once defined [further Level 3 Market Capabilities to be defined as these services are elaborated in WEM Procedures]
MC-1-MP-05 (Commercially prepared for SCED.)	Commercially prepared for SCED.
MC-1-MP-05-01	Trading systems/processes developed to support trading decisions
MC-1-MP-05-02	Existing PPA commitments have been reviewed and contractual terms going forward are settled.
MC-1-MP-05-03	Trading teams understand SCED and how to consume and interpret market outcomes (published in particular in the form of WEMDE Dispatch Outcomes files)
MC-1-MP-06 (Publishing or consuming data (other))	Can consume and act on continuously published market information.
MC-1-MP-06-01	Able to retrieve and consume all necessary market information (noting these data may be published in different locations or in different ways / different formats)
MC-1-MP-06-02	Able to consume and understand Pre-Dispatch and Market Schedule data (e.g. dispatch targets, dispatch caps and forecasts, ESS quantities and market prices)
MC-1-MP-06-03	Able to consume and understand variances in published Pre-Dispatch and Market Schedule scenarios
MC-1-MP-06-04	Able to identify and respond to Low Reserve Conditions
MC-1-MP-06-05	Able to consume and understand Market Advisories
MC-2 (RCM)	Operate, support, or participate in, an evolved Reserve Capacity Mechanism (RCM)
MC-2-MP-01 (RCM (Year 1))	Understand new obligations and submission changes for Year 1 of 2021 and 2022 Reserve Capacity Cycle
MC-2-MP-01-01	Able to use modified User Interface to make valid submissions and obtain current information
MC-2-MP-02 (RCM (NAQ))	Understand NAQ impacts and process changes for the 2022 Reserve Capacity Cycle

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	MC-2-MP-02-01	Understand capacity revenue implications of the NAQ
	MC-2-MP-02-02	Able to use modified User Interface to make valid submissions and obtain current information (Note, there will be no API changes as part of RCM Phase 2)
	MC-2-MP-02-03	Have knowledge of the underlying RCM constraints that drive the NAQ process
	MC-2-MP-03 (RCM (Year 3))	Understand new obligations for Year 3 of 2021 Reserve Capacity Cycle including settlements
	MC-2-MP-03-01	Able to make valid submissions via the User Interface
	MC-2-MP-03-02	Ready to comply with modified Reserve Capacity Testing requirements related to the changes introduced in the 2021 Reserve Capacity Cycle
	MC-2-MP-03-03	Understand financial and commercial implications of Reserve Capacity Obligation Quantities associated with the changes introduced in the 2021 Reserve Capacity Cycle
	MC-2-MP-03-04	Able to make and modify Capacity Credit Allocation submissions, including standing submissions
	MC-2-MP-03-05	Existing (Capacity) PPA commitments have been reviewed and contractual terms going forward are settled.
	MC-2-MP-03-06	Understand NTDL process and how to make submissions if applicable
	MC-2-MP-03-07	Able to view and understand IRCR changes and any related reporting, files and data
	MC-2-MP-03-08	Understand any modifications to capacity payment and refund procedures for the purposes of settlements and prudentials
MC-3 (System Planning)		Undertake, support, or participate in, more robust Power System Planning processes
	MC-3-MP-01 (Outage Management)	Able to submit and update equipment outages
	MC-3-MP-01-01	Understand changes to outage plan submission and approval processes, including those outlined in the Outages WEM Procedure (status changes, information requirements, process changes, timing requirements, etc)
	MC-3-MP-01-02	Understand how to prepare and submit outage intention plans and update following advice of conflicts
	MC-3-MP-01-03	Know how to use the UI to submit, withdraw, revise, resubmit outage plans, outage intention plans etc
	MC-3-MP-01-04	Self-scheduling outage facilities ready to notify AEMO of intended unavailability of all facilities via the UI
	MC-3-MP-01-05	Able to lodge Forced Outage submissions and understand notification and updating requirements
	MC-3-MP-01-06	Staff understand internal procedures and systems.
	MC-3-MP-01-07	All facilities have suitable procedures in place in relation to unplanned outages
	MC-3-MP-01-08	Internal procedures and documentation in place
	MC-3-MP-01-09	Appropriate integrations/processes to ensure outage planning is informed by commercial drivers (e.g. decision support tools)
	MC-3-MP-01-10	Appropriate integrations/processes to ensure outages are reflected in RTM submissions
	MC-3-MP-02 (MT PASA and ST PASA)	Understand and respond to ST & MT PASA outcomes and comply with information provision requirements
	MC-3-MP-02-01	Able to consume MT PASA reports to inform internal planning and anticipate AEMO decisions, such as outage cancellations
	MC-3-MP-02-02	Able to provide modelling and other information to support estimating different output scenarios (e.g. wind turbine output curves). [see See ST and MT PASA Procedure Presentation at WRIG 24/06/2021]
	MC-3-MP-02-03	Systems and processes in place to respond when AEMO notifies "Low Reserve Conditions"

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	MC-3-MP-02-04	Able to consume ST PASA reports to inform internal planning and anticipate AEMO decisions, such as outage cancellations or facility commitment/ESS directions
	MC-3-MP-03 (Commissioning Test)	Ready to manage facility commissioning testing
	MC-3-MP-03-01	Understand the "significant maintenance" threshold for requiring a Commissioning Test Plan
	MC-3-MP-03-02	Can prepare, submit and revise a Commissioning Test Plan in accordance with the processes and requirements of the Commissioning Test Plan WEM Procedure
	MC-3-MP-03-03	Systems and processes in place to manage the execution, modification and/or cancellation of Commissioning Tests (including responding to notices from AEMO and the processes around actual test execution on the day)
	MC-3-MP-04 (GPS)	Compliant with generator performance standards framework
	MC-3-MP-04-01	Have a registered GPS with Western Power for all relevant facilities
	MC-3-MP-04-02	An approved GMP in the GPS system for all relevant facilities
	MC-3-MP-04-03	Have implemented monitoring plans for all facilities and have all necessary recording equipment in place and functioning
	MC-3-MP-04-04	Understand obligations to self-report
	MC-3-MP-04-05	Established internal procedures and work instructions for how to self-report.
	MC-3-MP-04-06	Understand processes for Western Power and AEMO to determine whether a change to a Facility is considered a Relevant Generator Modification
	MC-4 (Market Ops and Admin)	Operate, support, or participate in, evolved financial, administrative and/or regulatory systems and processes
	MC-4-MP-01 (Settlements Reform)	Able to complete settlement under new arrangements
	MC-4-MP-01-01	Systems and processes ready to receive weekly invoices and larger and differently structured datasets.
	MC-4-MP-01-02	APIs developed to receive and process settlements-related files and data.
	MC-4-MP-01-03	Understand the new settlements formulae
	MC-4-MP-01-04	Enact the new settlements formulae in internal validation systems (optional)
	MC-4-MP-01-05	Staff understand internal procedures and systems.
	MC-4-MP-01-06	Internal procedures and documentation in place
	MC-4-MP-01-07	Able to monitor and react to prudential reporting, credit limit reviews, and margin calls where required
	N/A	[Note: participants will also need to be able to receive, store and query larger and differently structured metering datasets from Western Power]
	MC-4-MP-02 (STEM)	Able to participate in STEM, following consequential modifications to this market
	MC-4-MP-02-01	Understand changes to STEM timeline and submission process
	MC-4-MP-02-02	Understand changes to Bilateral Submission timeline and submission process
	MC-4-MP-02-03	Existing PPA commitments have been reviewed and contractual terms going forward are settled
	MC-4-MP-02-04	Understand relationship with Pre-Dispatch information and have processes in place to manage STEM submissions accordingly

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MC-4-MP-03 (Registration (Participant-level))	Comply with all participant registration requirements
MC-4-MP-03-01	Understand any changes to registration requirements per the WEM Rules and the Rule Participant Registration and Deregistration Process WEMP
MC-4-MP-03-02	Have identified and provided all necessary participant-level standing data
MC-4-MP-04 (Registration (Facility-level))	Comply with all facility registration requirements
MC-4-MP-04-01	Have established classification/indicative facility class for all facilities and technology types
MC-4-MP-04-02	In the case of DSP, have associated (or disassociated) its loads (change request after registration).
MC-4-MP-04-03	In the case of Interruptible Load, have associated (or disassociated) its loads (change request after registration).
MC-4-MP-04-04	Have identified and provided all necessary facility-level standing data, including any necessary standing data for Facility Technology Types
MC-4-MP-04-05	In the case of Intermittent Loads, have submitted all relevant information to support AEMO making a determination on contribution towards Contingency services



5 Proposed Market Capabilities for AEMO

Table 5, below provides the complete list of Level 1, Level 2 and Level 3 Market Capabilities that AEMO proposes to publicly report against itself. This detailed list is provided primarily to illustrate the consistent application of the reporting framework. However, comments or questions concerning specific Market Capabilities are welcome.

Table 6 Proposed Level 2 Market Capabilities for AEMO (Grouped by Level 1)

Level 1	Level 2	Level 3	Capability	
MC-1 (SCED)	MC-1-AEMO-01 (Constraint Management)		Operate, support, or participate in, Security Constrained Economic Dispatch (SCED)	
			Can meet constraint equation requirements for SCED, RCM and Outage Management	
		MC-1-AEMO-01-01	Able to develop constraints in line with Constraint Formulation WEM Procedure	
		MC-1-AEMO-01-02	Ready to manage workflows to develop new constraint sets in response to outage requests not already accounted for	
		MC-1-AEMO-01-03	All constraint equations required for New WEM Commencement Day have been developed	
		MC-1-AEMO-01-04	Congestion Information Resource published	
		MC-1-AEMO-01-05	Constraint library interactive tool developed and launched (Power BI)	
		MC-1-AEMO-02 (RTMS)		Real time market submissions enabled
		MC-1-AEMO-02-01	Able to receive (via UI and/or API), validate and store submissions	
		MC-1-AEMO-02-02	Able to report current submissions to participants via UI and/or API	
		MC-1-AEMO-02-03	System is compatible with facility class and registration rules (noting these gazetted after system developed)	
		MC-1-AEMO-03 (WEM Dispatch Engine)		Dispatch engine is compliant and solves robustly, predictably and efficiently.
		MC-1-AEMO-03-01	Able to process all required input data and form valid dispatch solutions	
		MC-1-AEMO-03-02	Able to issue dispatch and ESS activation instructions	
		MC-1-AEMO-03-03	Able to produce and publish all dispatch, pre-dispatch and market-schedule data	
		MC-1-AEMO-03-04	All WEMDE equations are certified	
		MC-1-AEMO-03-05	SCADA/AGC system is commissioned with new/updated signals in preparation for SCED dispatch	
		MC-1-AEMO-03-06	Able to provide required data to settlement system	
		MC-1-AEMO-03-07	Able to provide required data for compliance monitoring	
		MC-1-AEMO-03-08	Sufficient FCESS facilities have been accredited to support secure system operation	
		MC-1-AEMO-03-09	Processes in place to hand over operational control of Synergy facilities	
		MC-1-AEMO-04 (WEMDE UI)		Dispatch engine integrated for real time operations
		MC-1-AEMO-04-01	AEMO controllers have suitable visibility, query and real-time intervention capabilities	
		MC-1-AEMO-04-02	Able to invoke constraints reliably and transparently	
		MC-1-AEMO-04-03	Able to manage and log all non-automated activities	
		MC-1-AEMO-04-04	Able to interface with participants to provide dispatch data and receive dispatch acknowledgement	
		MC-1-AEMO-04-05	AEMO business units that support real-time operations able to utilise WEMDE UI's 'read only' functionality	

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Level 1	Level 2	Level 3	Capability
MC-2 (RCM)			Operate, support, or participate in, an evolved Reserve Capacity Mechanism (RCM)
	MC-2-AEMO-01 (RCM - Phase 1)		Able to manage Year 1 workflows for 2021 Reserve Capacity Cycle
		MC-2-AEMO-01-01	RCM Portal supports Year 1 submissions for the 2021 RCC (including Storage facilities, hybrid facilities and components)
		MC-2-AEMO-01-02	RCM systems and procedures support AEMO's assessment and certification of storage facilities, hybrid facilities and components for the 2021 RC Cycle
		MC-2-AEMO-01-03	RCM systems and procedures allow for submissions to provide details of storage facilities, hybrid facilities and components for the 2021 RC Cycle
	MC-2-AEMO-02 (RCM - Phase 2)		Able to manage Network Access Quantities (NAQ) throughout the 2022 Reserve Capacity Cycle
		MC-2-AEMO-02-01	Able to develop and revise RCM Constraint Equations
		MC-2-AEMO-02-02	RCM Constraint Equations developed and published
	MC-2-AEMO-03 (RCM - Phase 3)		Able to manage Year 3 workflows for 2021 Reserve Capacity Cycle
		MC-2-AEMO-03-01	Systems support Year 3 RC Testing & RCOQ (introduction of "Components") for the 2021 Reserve Capacity Cycle.
		MC-2-AEMO-03-02	Operational year processes and activities updated to cover Reserve Capacity Testing and Reserve Capacity Obligation Quantities
MC-3 (System Planning)			Undertake, support, or participate in, more robust Power System Planning processes
	MC-3-AEMO-01 (Outage Management)		Ready to manage outages
		MC-3-AEMO-01-01	Ready to manage planned outage workflows (including receive, publish, accept amendments, review, grant, accept withdrawals, effect cancellation)
		MC-3-AEMO-01-02	Ready to manage forced outage notifications and adjustments
		MC-3-AEMO-01-03	Ready to manage Outage Intention Plan workflows (including submission, amendment, publication, draft and final versioning)
		MC-3-AEMO-01-04	Ready to manage additions, modifications and removals to/from the equipment list
		MC-3-AEMO-01-05	Ready to process Opportunistic Maintenance requests (short-term outages)
		MC-3-AEMO-01-06	Systems in place to support B2B outage processing (e.g. for Western Power)
		MC-3-AEMO-01-07	Ready to manage all necessary notifications and reporting
		MC-3-AEMO-01-08	Ready to monitor and authorise outages and returns-to-service in real-time
		MC-3-AEMO-01-09	Ready to review / reschedule planned outages based on MT PASA notifications
		MC-3-AEMO-01-10	Ready to provide data required to support outage refund calculations
		MC-3-AEMO-01-11	Systems and processes for outages are linked to constraints management to support pre-dispatch and other downstream applications
		MC-3-AEMO-01-12	All calculations affecting the determination of outage refunds are certified
	MC-3-AEMO-02 (Forecasting Integration)		Timely and fit-for-purpose forecasts are supplied to all systems
		MC-3-AEMO-02-01	Forecasting system is upgraded to new version
		MC-3-AEMO-02-02	Can supply WEMDE forecasts (7-day horizon and 5-minute intervals, operational demand, high and Low scenarios, forecasts for Reg Raise, Reg Lower and Conting Lower ESS)

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Level 1	Level 2	Level 3	Capability
		MC-3-AEMO-02-03	Can supply ST PASA forecasts (as for WEMDE, plus additional forecasts for specified Demand Forecast scenarios - e.g. specified POE levels, and Intermittent generation forecasts)
		MC-3-AEMO-02-04	Can supply MT PASA forecasts (Long term statistical demand forecasts, LT stat. intermittent generation forecasts)
		MC-3-AEMO-02-05	Ready to publish forecast information to participants
		MC-3-AEMO-03 (MT PASA)	Can assess and manage power system adequacy over MT horizon
		MC-3-AEMO-03-01	MT PASA System able to model system adequacy non-deterministically, consistent with SCED principles, over 36 month horizon
		MC-3-AEMO-03-02	Projections reflecting potential risks and uncertainty can be produced and published weekly
		MC-3-AEMO-03-03	System can identify Low Reserve Conditions such that AEMO staff can issue appropriate and prompt notifications / interventions
		MC-3-AEMO-03-04	Ready to issue Low Reserve Conditions notifications to the market (to elicit supply response from participants)
		MC-3-AEMO-03-05	Ready to issue directions on the basis of MT PASA outcomes and other criteria (e.g. absence of market response to notifications)
		MC-3-AEMO-03-06	Ready to identify potential ESS shortfalls to support SESSM triggers
		MC-3-AEMO-04 (ST PASA)	Can assess and manage power system adequacy over ST horizon
		MC-3-AEMO-04-01	ST PASA System able to model system adequacy non-deterministically, consistent with SCED principles, (i.e. extract from WEMDE) over 7 day horizon
		MC-3-AEMO-04-02	System can identify Low Reserve Conditions such that AEMO staff can issue appropriate and prompt notifications / interventions
		MC-3-AEMO-04-03	Ready to issue Low Reserve Conditions notifications to the market (to elicit supply response from participants)
		MC-3-AEMO-04-04	Ready to publish ST PASA scenario inputs and results for selected scenarios
		MC-3-AEMO-04-05	Ready to issue directions on the basis of ST PASA outcomes and other criteria (e.g. absence of market response to notifications)
		MC-3-AEMO-05 (System Operation Planning Tools)	Can efficiently support system operations planning
		MC-3-AEMO-05-01	Key security and reliability management processes and procedures completed
		MC-3-AEMO-05-02	Processes in place to manage System Restart Service procurement, testing and activation
		MC-3-AEMO-05-03	Processes in place to manage UFLS specification, monitoring and adjustment
		MC-3-AEMO-05-04	Able to efficiently generate planning-related reports
		MC-3-AEMO-06 (Commissioning Test)	Ready to manage facility commissioning testing
		MC-3-AEMO-06-01	Ready to manage Commissioning Test Plan (CTP) workflows (including lodgement, assessment & approval, WP review, AEMO review & monitoring, closeout)
		MC-3-AEMO-06-02	Able to provide appropriate notifications (internal stakeholders, Western Power, participants)
		MC-3-AEMO-06-03	Able to publish Commissioning Test and CTP report (website)
		MC-3-AEMO-06-04	Able to generate Commissioning Test Report within User interface
		MC-3-AEMO-07 (GPS)	Ready to monitor and enforce generator performance standards for all Tx connected facilities

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Level 1	Level 2	Level 3	Capability
		MC-3-AEMO-07-01	Processes in place to manage submission and negotiation of Generator Performance Standards
		MC-3-AEMO-07-02	Processes in place to manage submission and approval of Generator Monitoring Plans
		MC-3-AEMO-07-03	Processes in place to monitor ongoing compliance with Generator Performance Standards
MC-4 (Market Ops and Admin)			Operate, support, or participate in, evolved financial, administrative and/or regulatory systems and processes
	MC-4-AEMO-01 (Settlements Enhancements)		Settlement base systems upgraded and updated
		MC-4-AEMO-01-01	WEM PaSS carrying out weekly and monthly settlement calculations
		MC-4-AEMO-01-02	Supports user access Settlement Statements and Invoices via user interface
		MC-4-AEMO-01-03	Notices of Disagreements and Prepayments able to be managed via user interface
		MC-4-AEMO-01-04	Supports business processes system notifications and alerts
		MC-4-AEMO-01-05	Settlements are consistent with Coordinator Fee Rule Change
		MC-4-AEMO-01-06	New and modified settlement calculations are certified
	MC-4-AEMO-02 (Settlements Reform)		Ready to manage weekly settlement of reformed market
		MC-4-AEMO-02-01	Able to receive, check and store metering data on a weekly cycle
		MC-4-AEMO-02-02	Able to calculate all settlement segments for the new market and reflect new cost allocation rules
		MC-4-AEMO-02-03	Can support new prudential calculations and new prudential requirements and processes
		MC-4-AEMO-02-04	Able to supply all necessary settlement reports via UI and/or API
		MC-4-AEMO-02-05	Can issue weekly invoices and receive weekly payments for both STEM and NSTEM
		MC-4-AEMO-02-06	Have in place suitable processes for managing violations of credit limits, defaults and other contingencies
		MC-4-AEMO-02-07	Can advise participants of their prudential obligations from market start (1/10/2023)
		MC-4-AEMO-02-08	Have suitable processes to validate and verify settlements for completeness and correctness
		MC-4-AEMO-02-09	All settlement calculations are certified
	MC-4-AEMO-03 (STEM)		Ready to manage and settle STEM in reformed market
		MC-4-AEMO-03-01	System can receive, validate and store STEM submissions and standing submission (noting new rules removing submission window)
		MC-4-AEMO-03-02	Able to publish STEM data as needed via website and/or web services
		MC-4-AEMO-03-03	Able to respond to STEM contingencies and/or STEM delay
		MC-4-AEMO-03-04	Bilateral Submission?
	MC-4-AEMO-04 (Registration)		Existing facilities registered appropriately and AEMO is ready to register new facilities
		MC-4-AEMO-04-01	System and procedures support AEMO processes to receive, validate and process participant and facility registration applications and amendments
		MC-4-AEMO-04-02	System and procedures support AEMO processes to receive, validate and store standing data for Rule Participants, Facilities and Facility Technology Types

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Level 1	Level 2	Level 3	Capability
		MC-4-AEMO-04-03	Participants have access to registration data (including standing data) via UI and/or API and is able to update all registration data via GUI
		MC-4-AEMO-04-04	System supports business processes system notifications and alerts for internal downstream applications (E.g. MOSMI)
		MC-4-AEMO-04-05	System to provide registration data for all downstream applications (E.g. RCM, Settlements, Metering, Public Website)
		MC-4-AEMO-05 (Digital Platforms)	Market interface systems enabled, accessible and supported
		MC-4-AEMO-05-01	New or modified platforms are provisioned, documented and explained to the market
		MC-4-AEMO-05-02	Access to testing environments is provisioned and supported for Rule Participants and the ERA