Five-minute settlement and global settlement

December 2019

Industry readiness reporting plan

Important notice

PURPOSE

The 5MS and GS Industry readiness reporting plan sets out the industry readiness reporting requirements for the 5MS & GS program.

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VERSION CONTROL

Version	Release date	Changes
#0.1	31/10/2019	Draft released to the 5MS/GS Readiness Working Group for comment
#1.0	13/12/2019	Final document published

Executive summary

AEMO and National Electricity Market (NEM) participants are currently implementing the five-minute settlement (5MS) and global settlement (GS) market reforms and the implementation program has entered its market readiness phase.

The National Electricity Rules (NER) changes for 5MS and GS have amended or introduced new regulatory obligations on certain NEM participants and AEMO. They require significant updates or changes to market procedures, metering and market and participants' systems at various times. AEMO has a key coordination role, through collaboration with its industry working groups, to ready industry and itself for the various system and market "go-live" dates.

AEMO will co-ordinate readiness reporting across the industry to monitor readiness for the various 5MS and GS transitional activities and commencements. This paper sets out the 5MS and GS industry readiness reporting requirements for both participants and AEMO.

Specifically, the Industry readiness reporting plan will:

- Set out the readiness reporting objective, underlying principles and scope

- Provide information on the criteria that AEMO and NEM participants will use to monitor the industry's operational readiness for 5MS and GS commencements

- Outline AEMO's process for requesting, accepting and collating regular status reports from NEM participants on the progress of their market readiness activities

- Outline how AEMO will report to the industry and other interested stakeholders on the progress of 5MS and GS market readiness activities

- Outline AEMO's approach for monitoring and assessing risks and issues that arise through readiness reporting.

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1. Introduction

This chapter explains the Australian Energy Market Operator's (AEMO) five-minute settlement (5MS) and global settlement (GS) implementation program. It then details the purpose and context of the 5MS and GS Industry readiness reporting plan.

1.1 AEMO's 5MS and GS implementation program

The Australian Energy Market Commission (AEMC) made the 5MS rule[1] in November 2017 and AEMO's extensive 5MS implementation program began in early 2018.[2] GS activities were incorporated into the program when the GS rule[3] was made in December 2018 because aligning 5MS and GS implementation activities is intended to minimise costs for AEMO and market participants.

The program covers the procedural, IT system and market readiness arrangements needed to implement 5MS and GS using the following workstreams:

- Procedures – defines and implements the required changes to market procedures[4]

- Systems – designs, develops, tests, and implements changes to AEMO's market systems[5]

- Readiness – coordinates, assists and prepares AEMO and participants for the transition to 5MS and GS.[6]

AEMO's 5MS and GS implementation program has entered the market readiness phase of the project. This paper relates to the transition and go-live phases of market readiness.

1.2 Industry readiness reporting plan

1.2.1 Document purpose

The purpose of the Industry readiness reporting plan is to set out the 5MS & GS program industry readiness reporting requirements.

Specifically, the Industry readiness reporting plan will:

- Provide information on the criteria that AEMO and NEM participants will use to monitor the industry's operational readiness for 5MS and GS commencements.

- Outline AEMO's process for requesting, accepting and collating regular status reports from NEM participants on the progress of their market readiness activities

- Outline how AEMO will report to the industry and other interested stakeholders on the progress of 5MS and GS market readiness activities

- Outline AEMO's approach for monitoring and assessing risks and issues that arise through readiness reporting.

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[1] *National Electricity Amendment (Five minute settlement) Rule 2017 No. 15*, Australian Energy Market Commission, available at: https://www.aemc.gov.au/rule-changes/five-minute-settlement, as further amended by the *National Electricity Amendment (Five minute settlement and global settlement implementation amendments) Rule 2019 No. 7*, available at https://www.aemc.gov.au/rule-changes/five-minute-settlement-and-global-settlement-implementation-amendments

[2] Details of AEMO's 5MS and GS implementation program: http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement

[3] *National Electricity Amendment (Global settlement and market reconciliation) Rule 2018 No. 14*, Australian Energy Market Commission, available at: https://www.aemc.gov.au/rule-changes/global-settlement-and-market-reconciliation, as further amended by the *National Electricity Amendment (Five minute settlement and global settlement implementation amendments) Rule 2019 No. 7*, op cit.

[4] Details of the procedures workstream: http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures-Workstream

[5] Details of the systems workstream: https://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Systems-Workstream

[6] Details of the readiness workstream: https://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Readiness-Workstream

The Industry readiness reporting plan *does not* encompass the two rounds of 5MS and GS 'interim' readiness reporting that was performed between July and September 2019 as an early indication of industry readiness for these market reforms.[7]

1.2.2   Development approach

Engagement with the 5MS Readiness Working Group

The Industry readiness reporting plan is being developed in consultation with industry through the 5Ms Readiness Working Group (RWG). Figure 1 illustrates AEMO's engagement approach and timeline for developing the Industry readiness reporting plan.

Figure 1   Engagement approach for developing the Industry readiness reporting plan

Early engagement
- RWG discusses approach
- AEMO seeks early feedback from RWG

RWG #4: 24 Sep
RWG #5: 22 Oct

Draft paper
- AEMO publishes draft plan

Thu 31 Oct

Feedback
- Participants comment and provide suggestions on draft plan to AEMO

Thu 21 Nov

Final paper
- AEMO publishes final plan after considering suggestions from participants

Fri 13 Dec

Periodic revisions
- The plan will be periodically revised as appropriate and in consultation with the RWG

Periodic reviews to the Industry readiness reporting plan

Periodic reviews of the plan are scheduled to review the effectiveness of the criteria and the overall process in gathering the required information to offer an accurate status and insights. Readiness criteria and the reporting process may be updated in consultation with the RWG as appropriate.

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[7] See: https://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Readiness-Workstream/Readiness-Reporting

1.2.3 Related documents
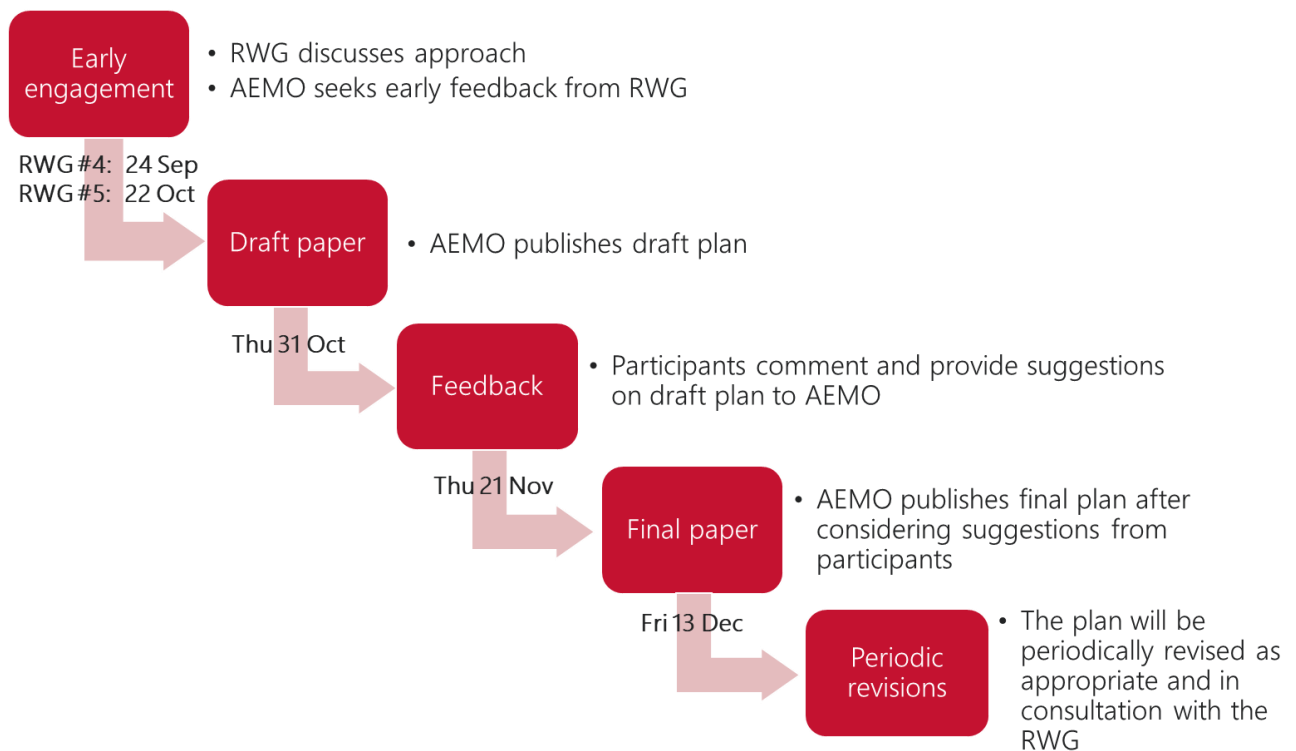
The Industry readiness reporting plan is one of the many documents that supports the 5MS and GS market readiness strategy document, as illustrated in Figure 2. More information on each document is provided in the 5MS and GS market readiness strategy.
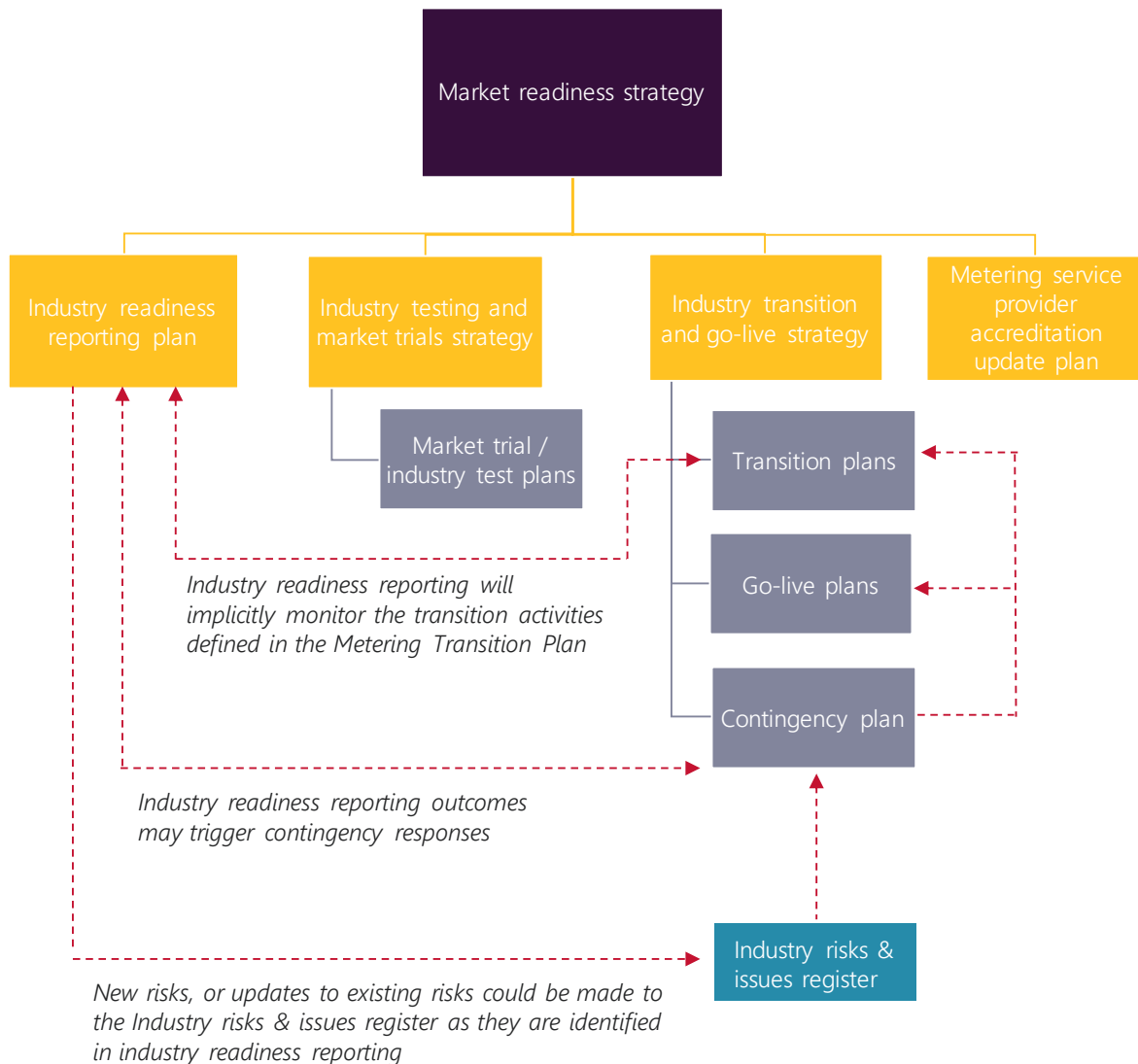
Industry readiness reporting also references, or is an input to the Metering transition plan, Industry contingency plan and Industry risks and issues register. The document relationships are described below.

Metering transition plan

The Metering transition plan (MTP)[8] outlines the expected responsibilities, activities, dependencies and timeframes required for the 5MS and GS metering transition. MDPs, MP, DNSPs and TNSPs have specific transition readiness activities to complete by the transition end dates as defined in the MTP. Readiness reporting will require relevant participants to report on their status towards completing a group of these activities at a "sub-category" level.

Industry contingency plan

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[8] Available at: https://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Readiness-Workstream/Key-Readiness-Documents

The Industry contingency plan[9] outlines the different contingency scenarios and responses that could eventuate from the risks defined in the Industry Risks and Issues register. The triggers to certain contingency responses are monitored through the appropriate readiness reporting criteria.

Industry risks and issues register

The Industry risks and issues register[10] contains all the 5MS and GS program industry risks and issues. This register is owned and maintained by the Program Consultative Forum (PCF). New risks, or updates to existing risks will be proposed to the PCF as they are identified through readiness reporting.

Note that all the above documents are live documents that are updated in consultation with the appropriate 5MS and GS working groups.[11]

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[9] Available at: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Readiness-Workstream/Key-Readiness-Documents

[10] Available at: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Program-Management/Program-Consultative-Forum

[11] Please contact 5MS@aemo.com.au to ensure you have access to the latest copy.

2. Readiness Reporting Framework

2.1　Objective

The 5MS and GS program readiness reporting objective is:

> *To facilitate readiness reporting throughout the implementation phase of 5MS and GS so that AEMO, NEM participants and other interested stakeholders have an accurate assessment of industry's readiness for the various 5MS and GS market system "go-lives", transitional activities and commencements.*

2.2　Principles

The industry readiness reporting principles build on the principles defined in the 5MS and GS market readiness strategy. They will guide all parties involved in readiness reporting:

1. Industry participation in the readiness reporting process is voluntary but strongly encouraged and in the interest of all participants.

2. Participants are responsible for establishing their own appropriate project schedule baselines and reporting their status against these.

3. Participants will submit open and honest self-assessments of their readiness status, following a framework and format set out in the Industry readiness reporting plan.

4. Readiness reporting information will be collated and submitted by an authorised person on behalf of their organisation.

5. AEMO will develop and seek input from the RWG on readiness reporting criteria.

6. Readiness reporting will be on a regular basis, following a defined calendar developed in collaboration with the RWG. In developing the reporting calendar, the effort of reporting will be balanced with the value of reporting.

7. As far as practicable, changes to the readiness survey questionnaire will only occur where further detail is required on key criteria.

8. AEMO will aggregate survey responses and prepare a Market Readiness Report following the approach defined in the readiness reporting plan

9. All responses will be treated as strictly confidential in-line with AEMO policies. The results from any analysis will be reported in aggregate and no individual organisations will be identified or identifiable.

2.3　Scope

2.3.1　In scope

The scope of industry readiness reporting encompasses all aspects of readiness towards the following key requirements as outlined in the 5MS and GS final rules:

- 5MS on 1 July 2021 (all '*Excluded' metering installations*[12] must record and provide 5-minute data)
- Unaccounted for energy (UFE) reporting from 1 July 2021
- GS on 6 February 2022.
- Non-Excluded new and replaced[13] metering installations must record and provide 5-minute data by 1 December 2022.

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[12] *Excluded metering installations* are types 1, 2, 3 and 7, along with type 4 meters at a *transmission network connection point*, or *distribution network connection point* where the relevant *financially responsible Market Participant* is a *Market Generator* or *Small Generation Aggregator*.

[13] If installed or replaced on or after 1 December 2018 (1 December 2019 for type 4A installations)

Also within the scope of readiness reporting are:

- NEM Participants' relevant:
  - Delivery progress and status
  - Readiness to engage with the 5MS and GS market systems changes
  - Required metering and Standing Data updates
  - Metering accreditation updates.
- AEMO's delivery of a range of 5MS and GS IT capabilities through staged market system 'go-lives':
  - Reallocations – upgrade to AEMO's system to support 5-minute reallocations
  - Bidding and dispatch – upgrade to AEMO's systems to support 5-minute bids and offers
  - B2M APIs – introduction of API interface capability to provide an optional, alternative interface approach
  - MDM platform – upgrade of AEMO's meter data management system to support meter data processing for 5MS and GS
  - NEM settlements – upgrade to AEMO's settlements system to support 5MS and GS.

2.3.2   Out of scope

Readiness reporting focuses on market readiness of the NEM as whole, it does not relate to each individual participant's own readiness for these NEM reforms because all participants are responsible for their own 5MS and GS preparations.

To balance the effort of readiness reporting with the value of reporting, reporting will focus on industry progress towards meeting specific 5MS and GS readiness criteria, rather than detailed progress tracking of each participant's implementation program. The specific 5MS and GS requirements defined as readiness criteria, are described in section 3.

Individual participant readiness issues will be considered as part of market readiness to the extent that the impact:

- is systemic and affects multiple participants
- affects overall NEM operations.

In these situations, the issue will be escalated to the RWG, to the extent that it does not breach confidentiality. The RWG will assess if these issues require monitoring and recommend the best approach for their resolution.

3. Market Readiness Criteria

Assessing market readiness involves tracking the industry's progress towards successful 5MS and GS commencements. Readiness reporting involves participants' self-assessing their progress and status against agreed market readiness criteria. This includes reporting on:

- General criteria - by participants
- Specific readiness criteria - by participants and AEMO

The sections below describe general criteria and specific readiness criteria at a high level.

The self-assessment process is described in section 4.

The detailed readiness criteria are included in Appendix A.

3.1   General criteria

To assist AEMO and the industry identify risks and issues across all participant types, all participants will report their progress against a set of general criteria. These criteria focus around the level of establishment and overall progress and status of participant programs. All participant types will report on the same general criteria.

This set of criteria will potentially become less relevant as participants complete program establishment activities and progress further with their implementation programs. The RWG will be invited to assess if reporting on general criteria is still relevant at scheduled revision dates of the Industry readiness reporting plan.

AEMO will continue to report on its level of program establishment and overall progress via regular industry updates at the PCF and executive forums.

The self-assessment process on this set of criteria is the same for all participant types, and is described in section 4.

The detailed general criteria are included in Appendix A.

3.2   Specific readiness criteria

The successful commencement of 5MS and GS requires the implementation of different capabilities for each participant type. Specific readiness criteria is intended to provide a basis for monitoring readiness based on the specific market commencement requirements for each participant type. Hence, each of the following participant types will have their own set of specific readiness criteria:

- Generators
- Retailers
- Distribution Network Service Providers (DNSPs)
- Transmission Network Service Providers (TNSPs)
- Metering Data Providers (MDP)
- Metering Providers (MP)
- Market Operator (AEMO)

Each participant will have their own respective implementation program to prepare their organisation for 5MS and GS. The scope of each program will depend on a number of factors, including participant type, size, and business strategy. Readiness reporting will track progress and status towards the achievement of market readiness requirements (criteria) and asks participants to report on *overall* progress towards the outcome (5MS and GS commencements). This is instead of tracking the incremental people, process and technology changes that contribute to specific market readiness criteria.

The reporting process on specific readiness criteria is particular to each participant type and is described in section 4.

The detailed specific program criteria for each participant type can be found in Appendix A.

3.3 Metering Transition Plan monitoring

In keeping with the Transition and go-live strategy objective and principles, the Metering transition plan (MTP)[14] provides coordinated guidance for AEMO and participants on the metering transition for 5MS and GS. Importantly, the Metering transition plan is the basis for participants to complete their own metering transition plans.

The MTP outlines the expected activities, responsibilities, dependencies and timeframes for completion for the elements of the metering transition. To facilitate a smooth transition to 5MS and GS, it is crucial that readiness activities are planned and executed by the formal commencement dates.

Reporting on Metering transition plan progress will be through industry readiness reporting. Reporting will track progress at a sub-category level, where respondents will be asked to report on their status towards completing the associated transition activities relevant to their participant type.

The detailed specific program criteria for each participant type (including criteria that references that MTP) can be found in Appendix A.

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[14] The Metering Transition Plan can be accessed at the following link. This document may be updated in consultation with the 5MS Transition Focus Group. Please contact 5MS@aemo.com.au to ensure that you have the latest copy.
https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Readiness-Workstream/Readiness-Working-Group

4. Readiness Reporting Process

On a periodic basis, NEM participants will be expected to submit information on their readiness status and progress towards relevant market readiness criteria. AEMO will provide each NEM participant with a Readiness Assessment Questionnaire to facilitate the collection of readiness information across the industry. AEMO will then aggregate this information to produce a Market Readiness Report.

AEMO has been engaging with the industry on readiness reporting through the RWG, including critical participants for 5MS and GS. AEMO will inform the industry of readiness reporting through its 5MS and GS forums and also its industry mailing channels. An analysis of industry participation in readiness reporting will be presented in every Market Readiness Report.

The readiness self-assessment and reporting process is described in the following sections. This process will be periodically reviewed and updated by the RWG where appropriate as the 5MS and GS program progresses.

4.1   Organisational reporting

Each participant will be requested to complete a readiness assessment questionnaire on a periodic basis. The completed reports must be submitted to AEMO for collation.

Participants that represent multiple companies or participant types will not have to complete multiple Readiness Assessment Questionnaires if they are implementing 5MS and GS through a single program of work. Participant will be expected to report on all specific readiness criteria applicable to the participant types they represent.

Example A

Participant A is implementing 5MS and GS across its three generation and four retailing companies through a single program of work. Participant A is expected to complete one readiness assessment questionnaire, and report on all criteria applicable to its generation and retailing companies covered by its program. AEMO's aggregated summary reporting will include Participant A's progress and status for its overall generation and retail criteria.

4.2   Completing the Readiness Assessment Questionnaire

The Readiness Assessment Questionnaire will contain a number of criteria for participants to self-assess their readiness against, as described in section 3.

For individual criteria, participants will be asked to report on a combination of the following:

- Status
- Progress
- Any requests for additional support (from AEMO or other participants to achieve readiness criteria)
- Explanation of variance and mitigating actions

The combination of 'progress' and 'status' reporting for each criterion provides a fuller picture of each participant's readiness. For example, a participant may report progress at 25% for a criterion for an extended period. If its status is 'on track' then its level of readiness would not be concerning. However if its status was 'late', then its readiness may be of concern.

Participants will also be able to provide general overall commentary on their overall readiness status.

The following sections, together with Appendix A, provide further information on each metric.

4.2.1   Status

General criteria, Specific criteria

Participants will report on the status of general and specific market readiness criteria. The following options will be available as responses:

- On track – If progress is within schedule
- At risk – If progress is at risk of becoming late
- Late – If progress is behind schedule
- Completed – If progress is 100%
- n/a – Criteria not relevant

Metering transition plan monitoring criteria

Participants are expected to provide status reporting for each sub-category as defined in the MTP. The following options will be available as responses:

- On track (not started) – If activities in the sub-category (relevant to the participant) are not started, but still on track according to the organisations schedule
- On track (started) – If activities in the sub-category (relevant to the participant) have started, and are on track according to the organisations schedule
- At risk – If activities in the sub-category (relevant to the participant) are at risk of not meeting the transition end date as defined in the MTP
- Late – If activities in the sub-category (relevant to the participant) is being delivered later than the transition end date as defined in the MTP
- Completed – If progress is 100%
- n/a – Criteria not relevant

4.2.2   Progress

General criteria

For most general criteria items, participants will report "Yes" when progression is 100% complete, and "No" when it is incomplete.

Guidance on when progression is considered 100% complete is provided for each criterion in Appendix A.

Participants will also be asked to identify any new risks and issues, or existing risks and issues that require amendment in the 5MS and GS Industry Risks and Issues register. The details of any proposed changes to the register will be provided through a standardised template supplied by AEMO in the Readiness Assessment Questionnaire.

Specific criteria

For specific criteria, participants are asked to report progression following a defined scale. Reporting will be done by providing information on 'percentage progress' in 25% increments. The following options will be available as responses:

- 0%
- 1 – 25%
- 26 – 50%
- 51 – 75%
- 76 - 99%

- 100%

- n/a

The target level for readiness criteria is 100% by the defined expected completion date. The expected completion date for each criterion is provided in Appendix A.

Each criterion may have multiple activities associated with it and the number and nature of these activities will depend on the design and implementation of participants' programs. Therefore, for reporting consistency, participants are asked to report on their progress towards achieving the required outcome (criterion) rather than reporting against discrete activities. However, the completion of key activities will inform how progression is reported for each criterion.

Guidance on how to report on progression for each criterion is provided in Appendix A under the column heading "Progression guide" in the relevant tables. The Progression guide is intended to guide survey respondents towards a common progression scale and minimise any interpretation variances. Respondents are encouraged to provide additional details when reporting on progression.

Metering transition plan monitoring criteria

To balance the effort of reporting with the value derived from reporting, respondents are not expected to provide progress reporting for metering transition plan activities. AEMO will infer progression of the MTP through the provided status reporting responses (e.g. % of sub-categories with activities that are "Complete".

4.2.3 Requests for reasonable support

Participants should provide further information if they require or are currently receiving any support from AEMO or the industry. Note that participants are encouraged to get in touch with relevant counterparties directly, and as soon as possible instead of initiating requests through readiness reporting.

4.2.4 Explanation of variance and mitigating actions

For any criterion that is "at risk", or "late", participants are required to provide:

- an explanation of the variance, and;

- any mitigating actions in place or required to return the completion of that criterion to schedule.

4.3 Self-assessment and authorisation

Reporting on readiness information is based on self-assessments of readiness by each participant. It is not possible for AEMO to validate the accuracy of information submitted by each participant prior to the creation of the aggregated Market Readiness Report.

As such and in accordance with the readiness reporting principles, it is expected that each participant will complete the Readiness Assessment Questionnaire in an open and honest manner, based on information that is current as at the time of reporting.

Self-assessments must be submitted by authorised representatives on behalf of their organisation.

4.4 Reporting frequency and review points

The timeline below aims to balance the effort of reporting with the value of reporting. The approach is to increase the frequency of reporting to enable increased monitoring of readiness issues closer to commencement.

The frequency of readiness reporting is:

- Quarterly until May 2020, then;
- Every two months until market commencement.

Periodic reviews are scheduled to review the effectiveness of the criteria and the overall process of readiness reporting. The plan may be updated at the defined review points in consultation with the RWG as appropriate.

An indication of relevant months for readiness reporting, including revision points for the Industry readiness reporting plan is provided in Table (1) below.

A detailed calendar of readiness reporting dates will be released in January 2020. It is intended that readiness questionnaires will be released according to the calendar and that participants will have seven business days to complete and submit their surveys.

Readiness reporting dates required after May 2021 will be defined at review point 4 of the Industry readiness reporting plan in April 2021, including considering readiness reporting requirements for GS market commencement on 6 February 2022.

Table 1   Readiness Reporting – Key months

Month	Milestone
Jan-20	Release of detailed readiness reporting calendar
Feb-20	Readiness Assessment Questionnaire - Release 1
Mar-20	Industry readiness reporting plan - Review point 1
May-20	Readiness Assessment Questionnaire - Release 2
Jun-20	Industry readiness reporting plan - Review point 2
Jul -20	Readiness Assessment Questionnaire - Release 3
Sep-20	Readiness Assessment Questionnaire - Release 4
Oct-20	Industry readiness reporting plan - Review point 3
Nov-20	Readiness Assessment Questionnaire - Release 5
Jan-21	Readiness Assessment Questionnaire - Release 6
Mar-21	Readiness Assessment Questionnaire - Release 7
Apr-21	Industry readiness reporting plan - Review point 4
May-21	Readiness Assessment Questionnaire - Release 8
Future reporting dates to be determined at Review point 4	

4.5   Input format

AEMO will administer the Readiness Assessment Questionnaire through an online questionnaire. An email will be sent to nominated RWG participants (and copied to 5MS/GS Program Consultative Forum members) with a link to the questionnaire, together with an excel template to assist with the collation of information within an organisation.

Participants will be expected to complete and submit the Readiness Assessment Questionnaire before the survey close date. A confirmation email together with a copy of the provided answers will be sent to acknowledge the submission.

5.   Summary Reporting by AEMO

5.1   Readiness criteria reporting

The reporting of overall market readiness will be presented in the Market Readiness Report. AEMO will produce a Market Readiness Report for every Readiness Assessment Questionnaire that is released. At a high level, the Market Readiness Report will contain the following overall readiness information:

- Overall project status and risk rating
- Risks and issues
- Aggregated readiness for each participant group
- Aggregated readiness for each market commencement
- Comparison of responses between survey periods

The Market Readiness Report will also provide commentary as appropriate on:

- Actual and potential readiness gaps
- Remedial action being taken to address these gaps
- Risks to market operation if the gap is not remedied
- Any potential mitigation of these risks
- Any required contingency decisions.

5.2   Presentation of results

For each round of readiness reporting, AEMO will publish the names of each organisation that took part, to the extent that this does not create confidentiality issues. This is to encourage the industry's consistent participation in readiness reporting.

Only the names of each organisation will be published. Individual responses will be treated as strictly confidential in line with AEMO policies. The results from any analysis will be reported in aggregate and no individual organisations will be identified or identifiable.

5.2.1   Aggregation and weighting

In preparing the Market Readiness Report, AEMO will aggregate individual participant readiness information to present a readiness at a program level and across participant categories.

When presenting the progress of each criteria on aggregate, AEMO may:

- Report the proportion of "Yes" responses
- Report the average of all received responses

In addition, AEMO will present a view of critical participant readiness by assigning weightings to each participants response for relevant criteria. When presenting the weighted aggregated readiness progress, AEMO may:

- Where appropriate, identify critical participants and report the average of this sub-set
- Report the weighted average of responses based on a defined methodology.

Further details on how AEMO will aggregate and weight readiness reporting results for each readiness criterion are provided in Appendix A.

Presenting overall status of a participant type on aggregate will require some level of judgement when preparing the Market Readiness Report. For example, if all but one retailer reports "within schedule" for their readiness criteria, AEMO will need to aggregate to either "within schedule", "at risk", or "late", for the overall retailer category status.

AEMO will take into account the below considerations when presenting overall status across multiple participants:

- Participant market share
- The likelihood of overall impact on industry readiness, including any dependencies that could have consequential impacts for other participants
- The possible outcomes of any listed mitigating controls and work-arounds.

Where appropriate, AEMO will also provide supporting commentary explaining its approach to interpreting the reporting results.

5.2.2 Comparisons between surveys

AEMO will present any analysis of notable changes in survey responses between survey periods.

Depending on received responses, this may be presented as:

- Changes in proportion of status responses (e.g. change in % of "On track" responses)
- Changes in proportion of progression responses (e.g. change in % of "0%" responses)

5.3 Risk and issue identification

A key principle of the 5MS and GS readiness program of work is the early communication of issues and risks. Any 5MS and GS readiness-related issues and risks identified during the implementation phase of the program are captured in the 5MS and GS Industry Risk and Issues Register.[15]

In readiness reporting, participants will be asked to raise any risks and/or issues that:

- are not currently captured
- require amendments

Additionally, both AEMO and NEM participants will be expected to report on the details of any factors causing activities to be at risk of being late when completing the Readiness Assessment Questionnaire.

Any new readiness risks, or requests to amend existing risks that arise through readiness reporting will be published in the Market Readiness Report, incorporated into the risk management process actioned by the RWG and escalated to the PCF where necessary. AEMO will identify risks and issues trends in the Market Readiness Report and provide commentary on changes in risk profile where appropriate.

5.4 Contingency planning

The Industry Contingency plan outlines the different contingency scenarios that could eventuate from the risks defined in the Industry Risks and Issues register. For each scenario, the plan describes the appropriate contingency response, monitoring mechanism, and contingency trigger.

The triggers to certain contingency responses are monitored through the appropriate readiness reporting criteria (e.g. final round of readiness reporting shows that a number of wholesale meters will not be fully compliant at 5MS commencement). If the results from readiness reporting satisfies any of the defined

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[15] Available at: https://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Program-Management/Program-Consultative-Forum

triggers, this will be published in the Market Readiness Report and escalated to the Contingency Focus Group (CFG), RWG and PCF as necessary.
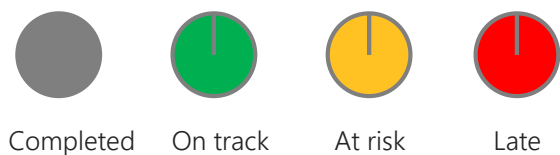
5.5   Report format and distribution

The Market Readiness Report will be presented in an easy-to-read dashboard format, using visual keys for progression and status such as those shown in Figure (3) below.

Figure 3   Progression and status key

Progression key

| 0% | 25% | 50% | 75% | 100% |

Status key

| Completed | On track | At risk | Late |
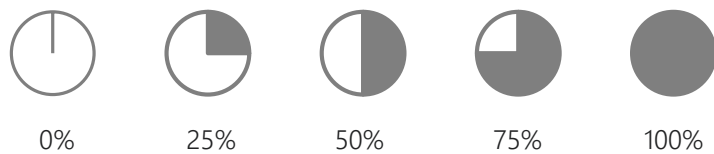
The Market Readiness Report will be distributed to RWG and PCF members by email. A copy will also be made available on AEMO's 5MS readiness webpage. The RWG and PCF will receive a debrief on each Market Readiness Report at the meeting following a report's release.

A1. Appendix A – Market Readiness Criteria

A1.1   General criteria

Table 2   General criteria

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Presentation of results
G1	Project funding secured		• Yes - Project funding agreed and incorporated into funding cycles; budgets in place and allocated to project • No – Project funding not secured or still in progress		
G2	Project plan established	• Yes • No • n/a	• Yes - Project schedule established, with progress monitored against plan • No – Project scheduled not established or still in progress	• On track • At risk • Late • n/a	For each criterion, AEMO will: • report the proportion of 'Yes' responses • identify critical participants and report the proportion of 'Yes' responses
G3	Project governance established		• Yes - Management ownership for project delivery established; Steering committee formalised • No – Project governance not established or still in progress		
G4	Project team onboarded		• Yes - Resourced project team in place (identified) to deliver project scope • No – Project team not onboarded or onboarding still in progress		
G5	Program delivery	• 0% • 1 – 24%	• 0% – No delivery program in place		For each criterion, AEMO will:

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Presentation of results
		• 25 – 49% • 50 – 74% • 75 – 99% • 100% • n/a	• 1 – 24% - Solution designs and solution delivery approach confirmed • 25 – 49% - Solution delivery in progress, suppliers engaged and underway, operational readiness activities commenced • 50 – 74% - Solution delivery well underway and progressing to schedule, supplier solutions delivered, testing approach defined and resourced • 75 – 99% - Solution testing in progress, operational readiness activities well advanced • 100% – Program completed and signed off		• report the non-weighted average of all received responses • identify critical participants and report the average for this sub-category
G6	Agreements with vendors finalised	• 0% • 1 – 24% • 25 – 49% • 50 – 74% • 75 – 99% • 100% • n/a	• 0% – Vendors not engaged • 1 – 24% – Vendors identified • 25 – 49% – Vendors engaged • 50 – 74% – Negotiations commenced • 75 – 99% – Negotiations concluded; Work commenced • 100% – Contracts signed • n/a – Criterion not applicable (provide reasoning)		For each criterion, AEMO will: • report the non-weighted average of all received responses • identify critical participants and report the average for this sub-category
G7	When reviewing the latest 5MS & GS Industry risks and issues register, are there:				
G7(a)	a) any new industry risks or issues not currently captured?		• Yes – *Please propose a new risk following the provided template* • No	n/a	• AEMO will publish the received responses in the format of the provided template
G7(b)	b) any existing risks or issues that require amendment?	• Yes • No	• Yes – *Please propose to amend an existing risk following the provided template* • No	n/a	• AEMO will publish the received responses in the format of the provided template

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Presentation of results
G8	Does your organisation intend to participate in industry testing and market trials?	• Yes • No • Undecided	• Yes – Organisation intends to participate • No – Organisation does not intend to participate • Undecided – Still undecided *(provide reasons why)*	• On track • At risk • Late • n/a	For each criterion, AEMO will: • report the non-weighted average of all received responses • identify critical participants and report the average for this sub-category

A1.2   Specific readiness criteria – Retailer

Table 3   Specific readiness criteria – Retailer

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Expected completion date	Presentation of results
RE1	Receive and reconcile 5-min settlements data	• 0% • 1 – 24% • 25 – 49% • 50 – 74% • 75 - 99% • 100% • n/a	• 0% - Not started • 1 – 24% - System designs commenced; Operational change impact assessment conducted • 25 – 49% - System development commenced; Operational readiness activities determined • 50 – 74% - System development underway; Operational readiness activities commenced • 75 – 99% - Systems testing underway; Operational readiness activities well advanced and progressing to schedule • 100% - Systems implemented; Operational Readiness activities completed (i.e. People, Processes and Systems are 'ready') • n/a – Criterion not applicable (provide reasoning)	• On track • At risk • Late • n/a	1 July 2021	For each criterion, AEMO will: • report the non-weighted average of all received responses • identify critical retailers and report the average for this sub-category
RE2	Receive and reconcile UFE allocation data (from 6 Feb 2022)				6 February 2022	
RE3	Support 5-min reallocations (if relevant)				1 July 2021	

A1.3 Specific Criteria – Generator

Table 4 Specific readiness criteria – Generator

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Expected completion date	Presentation of results
GE1	Submit 5-min bids		• 0% - Not started • 1 – 24% - System designs commenced; Operational change impact assessment conducted • 25 – 49% - System development commenced; Operational readiness activities determined • 50 – 74% - System development underway; Operational readiness activities commenced • 75 – 99% - Systems testing underway; Operational readiness activities well advanced and progressing to schedule • 100% - Systems implemented; Operational Readiness activities completed (i.e. People, Processes and Systems are 'ready') • n/a – Criterion not applicable (provide reasoning)		1 July 2021	
GE2	Receive and reconcile 5-min settlements data				1 July 2021	
GE3	Support 5-min reallocations (if relevant)	• 0% • 0 – 24% • 25 – 49% • 50 – 74% • 75 - 99% • 100% • n/a		• On track • At risk • Late • n/a	1 July 2021	For each criterion, AEMO will: • report the non-weighted average of all received responses • identify critical generators and report the average for this sub-category

A1.4   Specific readiness criteria – DNSP

Table 5   Specific readiness criteria – DNSP

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Expected completion date	Presentation of results
DN1	Receive and reconcile 5-min settlements data	• 0% • 0 – 24% • 25 – 49% • 50 – 74% • 75 - 99% • 100% • n/a	• 0% - Not started • 1 – 24% - System designs commenced; Operational change impact assessment conducted • 25 – 49% - System development commenced; Operational readiness activities determined • 50 – 74% - System development underway; Operational readiness activities commenced • 75 – 99% - Systems testing underway; Operational readiness activities well advanced and progressing to schedule • 100% - Systems implemented; Operational Readiness activities completed (i.e. People, Processes and Systems are 'ready') • n/a – Criterion not applicable (provide reasoning)	• On track • At risk • Late • n/a	1 July 2021	For each criterion, AEMO will: • report the non-weighted average of all received responses

A1.5 MTP monitoring criteria – DNSP

Table 6   Specific readiness criteria (MTP monitoring) – DNSP

When completing the below criteria, respondents must refer to the MTP and provide their status towards completing activities by the transition end date for each sub-category. Respondents are only expected to provide status reporting for activities that are relevant to their participant type. The MTP sub-category and activity reference IDs are provided in the table below.

To balance the effort of reporting with the value derived from reporting, respondents are not expected to provide progress reporting for metering transition plan activities. AEMO will infer progression of the MTP through the provided status reporting responses (e.g. % of sub-categories with activities that are "Complete".

#	Criteria	MTP ID (Sub. Cat.)	MTP ID (Activity)	Response options (status)	Expected completion date	Presentation of results
DN2	For the following sub-categories defined in the MTP, is your organisation on track to complete the associated activities (DNSP related only) by the defined transition end date?					
DN2(a)	a) Cross-boundary supplies	• S26	• A91	• On track (not started)	Differs for each activity – Please refer to MTP	For each criterion, AEMO will: • report the proportion of On track, At risk and Late responses
DN2(b)	b) Non-contestable unmetered loads	• S27	• A95	• On track (started)		
DN2(c)	c) New NMI classification codes - NCONUML	• S29	• A99	• At risk *(of not meeting MTP end date)*		
DN2(d)	d) New NMI classification codes - DWHOLESAL	• S30	• A100			
DN2(e)	e) New NMI classification codes - NREG	• S31	• A101	• Late *(for MTP transition end date)*		
DN2(f)	f) New NMI classification codes - XBOUNDRY	• S32	• A102	• Complete		
DN2(g)	g) New NMI classification codes - GENERATR	• S33	• A103	• n/a		

A1.6 Specific readiness criteria – TNSP

Table 7 Specific readiness criteria – TNSP

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Expected completion date	Presentation of results
TN1	Receive and reconcile 5-min settlements data	• 0% • 0 – 24% • 25 – 49% • 50 – 74% • 75 - 99% • 100% • n/a	• 0% - Not started • 1 – 24% - System designs commenced; Operational change impact assessment conducted • 25 – 49% - System development commenced; Operational readiness activities determined • 50 – 74% - System development underway; Operational readiness activities commenced • 75 – 99% - Systems testing underway; Operational readiness activities well advanced and progressing to schedule • 100% - Systems implemented; Operational Readiness activities completed (i.e. People, Processes and Systems are 'ready') • n/a – Criterion not applicable (provide reasoning)	• On track • At risk • Late • n/a	1 July 2021	For each criterion, AEMO will: • report the non-weighted average of all received responses

A1.7 MTP monitoring criteria – TNSP

Table 8 Specific readiness criteria (MTP monitoring) – TNSP

When completing the below criteria, respondents must refer to the MTP and provide their status towards completing activities by the transition end date for each sub-category. Respondents are only expected to provide status reporting for activities that are relevant to their participant type. The MTP sub-category and activity reference IDs are provided in the table below.

To balance the effort of reporting with the value derived from reporting, respondents are not expected to provide progress reporting for metering transition plan activities. AEMO will infer progression of the MTP through the provided status reporting responses (e.g. % of sub-categories with activities that are "Complete".

#	Criteria	MTP ID (Sub. Cat.)	MTP ID (Activity)	Response options (status)	Expected completion date	Presentation of results
TN2	For the following sub-categories defined in the MTP, is your organisation on track to complete the associated activities (TNSP related only) by the defined transition end date?					
TN2(a)	a) New NMI classification codes - BULK	• S28	• A98	• On track (not started) • On track (started) • At risk *(of not meeting MTP end date)* • Late *(for MTP transition end date)* • Complete • n/a	Differs for each activity – Please refer to MTP	For each criterion, AEMO will: • report the proportion of On track, At risk and Late responses
TN2(b)	b) New NMI classification codes - WHOLESAL	• S34	• A104			

A1.8 MTP monitoring criteria – Metering Providers (MPs)

When completing the below criteria, respondents must refer to the MTP and provide their status towards completing activities by the transition end date for each sub-category. Respondents are only expected to provide status reporting for activities that are relevant to their participant type. The MTP sub-category and activity reference IDs are provided in the table below.

To balance the effort of reporting with the value derived from reporting, respondents are not expected to provide progress reporting for metering transition plan activities. AEMO will infer progression of the MTP through the provided status reporting responses (e.g. % of sub-categories with activities that are "Complete".

Table 9   Specific readiness criteria (MTP monitoring) – MPs

#	Criteria	MTP ID (Sub. Cat.)	MTP ID (Activity)	Response options (status)	Expected completion date	Presentation of results
MP1	For the following sub-categories defined in the MTP, is your organisation on track to complete the associated activities (MP related only) by the defined transition end date?					
MP1(a)	a) BULK/Wholesale Meters	• S01	• A1, A2, A4, A5	• On track (not started) • On track (started) • At risk *(of not meeting MTP end date)* • Late *(for MTP transition end date)* • Complete • n/a	Differs for each activity – Please refer to MTP	For each criterion, AEMO will: • report the proportion of On track, At risk and Late responses
MP1(b)	b) Type 1-3 meters	• S02	• A6, A7, A9, A10			
MP1(c)	c) Subset of type 4 meters - TNI, Market Generator or SGA	• S03	• A11, A12, A14, A15			
MP1(d)	d) Cross Boundary meters (KNOWN)	• S04	• A16, A17, A19, A20			
MP1(e)	e) Cross Boundary meters (UNKNOWN)	• S05	• A21, A23			
MP1(f)	f) New and replacement Type 4	• S06	• A24			
MP1(g)	g) New and replacement Type 4A	• S07	• A25			
MP1(h)	h) New and replacement VIC AMI meters	• S08	• A26			
MP1(i)	i) New and replacement SAMPLE Meters	• S09	• A27			
MP1(j)	j) Pre-1 Dec 2018/19 Type 4, 4A, VICAMI and SAMPLE meters	• S10	• A28			

#	Criteria		MTP ID (Sub. Cat.)	MTP ID (Activity)	Response options (status)	Expected completion date	Presentation of results
MP1(k)	k)	Cross-boundary supplies	• S26	• A93	• On track (not started)		
MP1(l)	l)	Non-contestable unmetered loads	• S27	• A97	• On track (started)		
MP1(m)	m)	Meter installation type code in MSATS	• S39	• A109	• At risk *(of not meeting MTP end date)*	Differs for each activity – Please refer to MTP	For each criterion, AEMO will: • report the proportion of On track, At risk and Late responses
MP1(n)	n)	RegisterID and Suffix values in MSATS	• S40	• A110			
MP1(o)	o)	MP accreditation update (for 1 July 2021)	• S41	• A111-113	• Late (for *MTP transition end date*)		
MP1(p)	p)	MP accreditation update (for 1 Dec 2022)	• S42	• A115-A117	• Complete • n/a		

A1.9 MTP monitoring criteria – Metering Data Providers (MDPs)

When completing the below criteria, respondents must refer to the MTP and provide their status towards completing activities by the transition end date for each sub-category. Respondents are only expected to provide status reporting for activities that are relevant to their participant type. The MTP sub-category and activity reference IDs are provided in the table below.

To balance the effort of reporting with the value derived from reporting, respondents are not expected to provide progress reporting for metering transition plan activities. AEMO will infer progression of the MTP through the provided status reporting responses (e.g. % of sub-categories with activities that are "Complete".

Table 10 Specific readiness criteria (MTP monitoring) – MDPs

#	Criteria	MTP ID (Sub. Cat.)	MTP ID (Activity)	Response options (status)	Expected completion date	Presentation of results
MD1	For the following sub-categories defined in the MTP, is your organisation on track to complete the associated activities (MDP related only) by the defined transition end date?					
MD1(a)	a) BULK/Wholesale Meters	• S13	• A31 - A35	• On track (not started) • On track (started) • At risk *(of not meeting MTP end date)* • Late *(for MTP transition end date)* • Complete • n/a	Differs for each activity – Please refer to MTP	For each criterion, AEMO will: report the proportion of On track, At risk and Late responses For each criterion, AEMO will: • report the proportion of On track, At risk and Late responses
MD1(b)	b) Type 1-3, subset of 4	• S14	• A36 - A40			
MD1(c)	c) Cross Boundary meters (KNOWN)	• S15	• A41 - A45			
MD1(d)	d) Cross Boundary meters (UNKNOWN)	• S16	• A46 - A50			
MD1(e)	e) New and replacement Type 4	• S17	• A51 - A56			
MD1(f)	f) New and replacement Type 4A	• S18	• A57 - A62			
MD1(g)	g) New and replacement VIC AMI meters	• S19	• A63 - A68			
MD1(h)	h) New and replacement SAMPLE Meters	• S20	• A69 - A74			
MD1(i)	i) Pre-1 Dec 2018/19 Type 4, 4A, VICAMI and SAMPLE meters	• S21	• A75 - A80			
MD1(j)	j) Type 7 metering installations	• S22	• A81 - A83			
MD1(k)	k) Non-contestable unmetered loads	• S23	• A84 - A88			

#	Criteria		MTP ID (Sub. Cat.)	MTP ID (Activity)	Response options (status)	Expected completion date	Presentation of results
MD1(l)	l)	Tier 1 basic metering data	• S24	• A89			
MD1(m)	m)	Meter data delivery to AEMO for all interval meters	• S25	• A90	• On track (not started)		
MD1(n)	n)	Cross-boundary supplies	• S26	• A92	• On track (started)		
MD1(o)	o)	Non-contestable unmetered loads	• S27	• A96	• At risk *(of not meeting MTP end date)*	Differs for each activity – Please refer to MTP	For each criterion, AEMO will: report the proportion of On track, At risk and Late responses
MD1(p)	p)	Tier 1 basic meter datastreams	• S36	• A106			
MD1(q)	q)	Interval meter datastreams	• S37	• A107	• Late *(for MTP transition end date)*		
MD1(r)	r)	VIC TUOS datastreams	• S38	• A108	• Complete		
MD1(s)	s)	MDP accreditation update (for 1 July 2021)	• S43	• A119 - A121	• n/a		
MD1(t)	t)	MDP accreditation update (for 1 Dec 2022)	• S44	• A123 - A125			

A1.10 Specific readiness criteria – AEMO

Table 11 Specific readiness criteria – AEMO

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Presentation of results
AE1	Support 5-min bids and offers				
AE1(a)	a) Changes to bidding interfaces				
AE1(b)	b) Bidding transition				
AE2	Support 5-min settlement				
AE2(a)	a) Changes to settlement calculation				
AE2(b)	b) MDM platform upgraded to receive 5 - minute data		• 0% - Not started • 1 – 24% - System designs commenced; Operational change impact assessment conducted • 25 – 49% - System development commenced; Operational readiness activities determined		
AE2(c)	c) MDM platform upgraded to support 5-min profiling	• 0% • 0 – 24% • 25 – 49% • 50 – 74% • 75 - 99% • 100% • n/a	• 50 – 74% - System development underway; Operational readiness activities commenced • 75 – 99% - Systems testing underway; Operational readiness activities well advanced and progressing to schedule	• On track • At risk • Late • n/a	For each criterion, AEMO will: • report progress according to the scale defined in the response guide.
AE2(d)	d) Settlement platform to produce 5-min format invoices to support reconciliation				
AE3	Support UFE publication (from 1 July 2021)		• 100% - Systems implemented; Operational Readiness activities completed (i.e. People, Processes and Systems are 'ready') • n/a – Criterion not applicable (provide reasoning)		
AE3(a)	a) Support meter data processing for GS				
AE3(b)	b) Support UFE calculation and publication				
AE4	Support Global Settlement (From 6 Feb 2022)				
AE4(a)	a) Switch Local Retailer and FRMP to GLOPOOL				
AE4(b)	b) Support standing data processing for GS				
AE5	Support 5-min reallocations				

#	Criteria	Response options (prog.)	Progression Guide	Response options (status)	Presentation of results
AE6	Support introduction of B2M APIs				
AE7	Provide enhanced MSATS pre-prod support				

Glossary

This document uses many terms that have meanings defined in the National Electricity Rules (NER). The NER meanings are adopted unless otherwise specified.

Term	Definition
5MS	Five-minute settlement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
API	Application Program Interface
B2M	Business to market i.e. business to AEMO transactions
CFG	Contingency Focus Group
DNSP	Distribution Network Service Providers
GS	Global settlement
Industry testing	Informal, uncoordinated testing by participants in AEMO's IT environments
Market Readiness Report	Report produced by AEMO to present the industry's overall market readiness for 5MS and GS
Market trials	Formal, industry coordinated test activities between participants' and AEMO's IT environments
MDFF	Meter data file format
MDP	Metering Data Provider
MDM	Metering data management system
MP	Metering Provider
MSP	Metering Service Provider – including MPs, MDPs and MCs
MSATS	Metering, settlement and transfer solution
NCONUML	Non-contestable unmetered loads
NEM	National Electricity Market
NER	National Electricity Rules
PCF	5MS/GS Program Consultative Forum
Readiness Assessment Questionnaire	Questionnaire template sent by AEMO to participants to collect information for readiness reporting
RWG	Readiness Working Group
SWG	Systems Working Group
UFE	Unaccounted for energy