

Five-Minute Settlement Program: Program Consultative Forum 10

AEMO 5MS Program Team

FRIDAY 10 MAY 2019

AEMO OFFICES:

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**PLEASE NOTE THIS MEETING WILL BE RECORDED FOR THE PURPOSE OF PREPARING
MINUTES**

Agenda

| NO | TIME | AGENDA ITEM | RESPONSIBLE |
|-------------------------------|-------------------|---|-----------------------|
| Preliminary Matters | | | |
| 1 | 10.00am – 10.10am | Welcome, introduction, attendance and apologies | Chris Muffett (AEMO) |
| 2 | 10.10am – 10.20am | Minutes and actions from previous meeting | Chris Muffett (AEMO) |
| Matters for Noting | | | |
| 3 | 10.20am – 10.50am | Program update | Graeme Windley (AEMO) |
| 4 | 10.50am – 11.00am | Industry risks & issues register | Graeme Windley (AEMO) |
| 5 | 11.00am – 11.10am | Procedures workstream update | Emily Brodie (AEMO) |
| 6 | 11.20am – 11.30am | Readiness workstream update | Greg Minney (AEMO) |
| 7 | 11.30am – 11.40am | Stakeholder Update | Monica Morona (AEMO) |
| Matters for Discussion | | | |
| 8 | 11.40am – 12.00pm | Readiness planning | Greg Minney (AEMO) |
| 9 | 12.00pm – 12.20pm | Procedures Working Group transition | Emily Brodie (AEMO) |
| 10 | 12.20pm – 12.40pm | Program Change Request process | Blaine Miner (AEMO) |
| Other Business | | | |
| 11 | 12.40pm – 12.55pm | General questions | Chris Muffett (AEMO) |
| 12 | 12.55pm – 1.00pm | Forward meeting plan | Chris Muffett (AEMO) |

Minutes and actions from previous meeting

Chris Muffett

Actions

| PCF 9 - Actions | | | | |
|-----------------|---|--|----------------|---|
| ITEM | TOPIC | ACTION REQUIRED | RESPONSIBLE | STATUS |
| 8.7.4 | Stakeholder Updates | Arrange for invitations for all scheduled meetings to be distributed | Chris Muffett | Completed – calendar available on 5MS webpage |
| 9.4.1 | Preliminary Matters – Minutes and Actions from previous meeting | R02 – AEMO to consider a response strategy to manage the risk of participants not being ready as part of the readiness workstream. | Graeme Windley | Closed |
| 9.7.1 | Readiness Workstream | AEMO to consider dates for readiness reporting, and opportunities for interim reporting arrangements to be in place earlier. | Greg Minney | In Progress – Readiness Working Group action |
| 9.7.2 | Readiness Workstream | Consider nominations for Readiness Working Group ahead of formal establishment | PCF members | In Progress – response due 31 May 2019 |
| 9.9.1 | Industry timelines | AEMO to provide milestones in MPP file format | Graeme Windley | Completed – included in meeting pack |
| 9.9.2 | Industry timelines | Provide more definition in regard to aligning schedules and proposed start date of market trials. | Graeme Windley | In progress – June PCF reporting |

Program update

Graeme Windley

Program Update

- Overall
 - Milestones baselined, available for reporting today
 - Level 3 milestones with industry impact distributed with this pack
- Procedures Workstream
 - Overall Green, a couple of documents delayed but no overall impact
 - Currently three consultations out for review
- Metering Workstream
 - AEMO Internal – Functional and Technical Design on track to delivery on 31 May 2019
 - Delay in delivery of MSATS technical spec and File Format & Load process documentation, as a result of Procedures Metering Package 2 delay
 - B2M via API design work has commenced; B2M via eHub technical guide will be released in May to participants
- Dispatch Workstream
 - AEMO Internal - Internal work on track. System Testing has begun for developed work packages
 - EMMS technical specification out for review
- Settlements Workstream
 - AEMO Internal - Internal work on track. System Testing has begun for developed work packages
- Readiness Workstream
 - Greg Minney has joined the 5MS Program as Readiness Manager – welcome Greg!
 - Market Trial content presentation to BCE to be delayed to June BCE

Level 1 Milestones - Status Report

| Domain | Initiative | 2019 | | | | 2020 | | | | 2021 | | | | | | | | | | | | | | | |
|---------|------------|------|------|-------|------|------|-------|------|------|------|-------|-----|-------|------|-----|------|-------|------|-----|-----|-----|------|-----|-----|-----|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | | | | | | | | | | |
| Program | | | L1-1 | L1-11 | L1-2 | | L1-12 | L1-3 | L1-7 | | L1-13 | | L1-14 | L1-8 | | L1-9 | L1-10 | L1-4 | | | | | | | |
| | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |

Key Milestones (Program)

| ID | Milestone | Target Date | Expected Date | Status |
|-------|---|-------------|---------------|--|
| L1-1 | 5MS Drafting Amendments submitted to AEMC | 20-Mar-2019 | 15-Mar-2019 | Completed, however belated Procedure work has uncovered additional changes which are required. |
| L1-11 | All AEMO workstream development commenced | 23-May-2019 | 23-May-2019 | On Track |
| L1-2 | IEC Approves B2B Procedures | 01-Jul-2019 | 01-Jul-2019 | Completed |
| L1-12 | 5MS Staging environment live | 01-Dec-2019 | 01-Dec-2019 | Provisional |
| L1-3 | AEMO publishes NEM Procedures | 01-Dec-2019 | 01-Dec-2019 | Mandated |
| L1-7 | Market Readiness Strategy Published by AEMO | 20-Jan-2020 | 20-Jan-2020 | Firm |
| L1-13 | AEMO Internal Development Completed | 30-Jun-2020 | 30-Jun-2020 | Provisional |
| L1-14 | Market Participants Readiness for Market Trials | 30-Nov-2020 | 30-Nov-2020 | Provisional |
| L1-8 | Participant Market Trials commence | 01-Dec-2020 | 01-Dec-2020 | Provisional |
| L1-9 | Participant Market Trials conclude | 31-May-2021 | 31-May-2021 | Provisional |
| L1-10 | Metering Accreditation Complete | 31-May-2021 | 31-May-2021 | Provisional |
| L1-4 | 5MS & UFE Market Go Live | 01-Jul-2021 | 01-Jul-2021 | Mandated |
| L1-5 | GS Market Go Live | 06-Feb-2022 | 06-Feb-2022 | Mandated |

-  Milestone complete
-  Milestone on track
-  Milestone at risk
-  Milestone not achieved
-  Critical Dependency

Level 2 Milestones - Dispatch



Key Milestones (Program)

| ID | Milestone | Target Date | Expected Date | Status |
|--------|--|-------------|---------------|-------------|
| L2-D1 | Final Technical Specifications for Package 1 published by AEMO | 2-Apr-2019 | 2-Apr-2019 | Completed |
| L2-D2 | Final Technical Specifications for Package 4 published by AEMO | 31-Jul-2019 | 31-Jul-2019 | Firm |
| L2-D3 | Software Drop for Packages 1,2 & 3 in 5MS Staging Environment | 29-Nov-2019 | 29-Nov-2019 | Firm |
| L2-D5 | Software Drop for Package 4 in 5MS Staging Environment | 15-May-2020 | 15-May-2020 | Firm |
| L2-D4 | Development completed (internal) | 31-May-2020 | 31-May-2020 | Firm |
| L2-D6 | UAT completed (internal) | 30-Nov-2020 | 30-Nov-2020 | Firm |
| L2-D7 | Market Trial preparation completed | 30-Nov 2020 | 30-Nov 2020 | Provisional |
| L2-D8 | Market Trial preparation completed | 30-Nov 2020 | 30-Nov 2020 | Provisional |
| L2-D9 | 5-min Bidding Phased Go Live Begins | 01-Apr-2021 | 01-Apr-2021 | Provisional |
| L2-D10 | Market Trial conclude | 31-May-2021 | 31-May-2021 | Provisional |
| L2-D11 | 30-min Bidding no longer accepted by AEMO | 01-Jul-2021 | 01-Jul-2021 | Mandatory |

-  Milestone complete
-  Milestone on track
-  Milestone at risk
-  Milestone not achieved
-  Critical Dependency

Systems Consultations

Systems HLIA

- Updates to the settlements, retail, and dispatch and operational systems - released 8 April
- Seeking feedback by **Monday 20 May**.
- More information - <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Systems-Workstream>.

EMMS Technical Specifications

- A new version of the specifications was released 2 April, updates to the dispatch and bidding elements.
- Seeking feedback regarding AEMO mapping between SR reports and EMMS data modelling by **Monday 20 May**.
- More information - <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Systems-Workstream>.

Industry risks & issues

Graeme Windley

Summary

- Latest risk/issue register distributed along with meeting pack
- Update/review at PCF #11
- Risk/issue register is published on 5MS PCF page:

<https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Program-Management/Program-Consultative-Forum>

Procedures workstream update

Emily Brodie

Procedures workstream status (Level 3 milestones)

| 5 MINUTE SETTLEMENT PROCEDURES TRACKING | Pre-consultation | | Consultation | | | CONTENT Package content |
|--|------------------|-----------------|--------------------|-----------------|-----------------|----------------------------|
| | | | TIMING | | | |
| | HLIA | PWG Engagement | Consultation paper | Draft documents | Final documents | |
| METERING | | | | | | |
| 1. Metering - Metering Data & Metrology | Jul-18 | Jul-18 | Sep-18 | Jan-19 | Mar-19 | |
| 2. Metering - MSATS and SLPs | Jul-18 | Dec-18 & Mar-19 | Apr-19 | Jun-19 | Aug-19 | |
| 3. Metering - Miscellaneous* | Jul-18 | Feb-19 | n/a | Jun-19 | Jul-19 | |
| B2B Procedures - B2B file size | n/a | Feb-19 | n/a | n/a | n/a | |
| SETTLEMENTS | | | | | | |
| SRA | Jun-18 | Jul-18 | n/a | Jul-18 | Aug-18 | |
| SRA round #2 | Jun-18 | Feb-19 | Mar-19 | Jun-19 | Aug-19 | |
| TNSP | Feb-19 | Feb-19 | n/a | Apr-19 | Jun-19 | |
| Estimation | Aug-18 | Aug-18 | Nov-18 | Feb-19 | Apr-19 | |
| Reallocations | Dec-18 | Dec-18 | n/a | Dec-18 | Feb-19 | |
| Miscellaneous | Oct-18 | Oct-18 | Dec-18 | Mar-19 | May-19 | |
| Prudentials | Aug-18 | Sep-18 | Apr-19 | Jun-19 | Aug-19 | |
| DISPATCH | | | | | | |
| 2. Dispatch - Spot market - Rules consultation | Sep-18 | Oct 18 ongoing | Jan-19 | Jun-19 | Aug-19 | |
| 2. Dispatch - Spot market - For comment* | Sep-18 | Oct 18 ongoing | n/a | Jul-19 | Aug-19 | |
| 3. Dispatch - Pricing - Rules consultation | Aug-18 | Aug 18 ongoing | Aug-18 | Sep-18 | Nov-18 | |
| 3. Dispatch - Pricing - For comment* | Aug-18 | Aug 18 ongoing | n/a | May-19 | Jun-19 | |
| 4. Dispatch - Miscellaneous* | Jan-19 | Feb-19 | n/a | May-19 | Jun-19 | |
| POWER SYSTEM OPS | | | | | | |
| 1. Operations - Miscellaneous* | TBA | Apr 19 ongoing | n/a | n/a | Jul-19 | |

| TIMING |
|----------------------|
| Started and on track |
| Started late |
| Overdue |

| CONTENT |
|---------------|
| No issues |
| Issues |
| Severe issues |

Consultations - Metering

5MS Metering package 2

- Publication of the 'Metering Package 2' first stage consultation is delayed; Consultation initially scheduled for 26 April.
- 5MS and GS Rules:
 - have a number of complex interdependencies
 - represent a significant change across various Metering procedures
- Delay is to ensure that the initial draft procedures are of an expected standard, and to enable an effective and efficient consultation process.
- Publication of first stage consultation is now scheduled for Monday 20 May 2019.

Consultations – settlements & prudentials

Auction Participation Agreement

- Consultation commenced on 22 March 2019
- First stage **submissions due 27 May**
- Final Report and procedures scheduled for publication on 5 August
- <http://aemo.com.au/Stakeholder-Consultation/Consultations/Five-Minute-Settlement---Auction-Participation-Agreement>

NEM Settlement Revision Policy

- Second stage submissions closed 8 April
- Final report and procedures will be published on 13 May
- <http://aemo.com.au/Stakeholder-Consultation/Consultations/Five-Minute-Settlement---NEM-Settlement-Revisions-Policy>

Transmission Network Service Provider (TNSP) Negative Settlements Residue Procedure

- Consultation commenced on 1 April, not a Rules consultation document
- **Submissions due 3 June**
- Final report and procedures scheduled for publication 14 June
- <http://aemo.com.au/Stakeholder-Consultation/Consultations/Five-Minute-Settlement---NEM-TNSP-Negative-Settlements-Residue-Procedure>

Credit Limit Procedures

- Consultation commenced on 12 April
- First stage **submissions due 23 May**
- <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures-Workshop-Settlement-Residue-Procedure>

Procedures workstream meetings

- Next PWG scheduled for Tuesday 14th May:
 - Update on metering package #2
 - Update on settlements procedures
 - Update on GS implementation rule change request
- Future focus groups:
 - Reconciliation support workshop – Wednesday, 22 May 2019, Melbourne
 - Expect to hold further metering focus group meetings in the coming months as we work through metering procedures package #2

Update: 5MS implementation rule change request (1)

- Expedited rule change request was submitted to the AEMC on 15 March 2019 and is now available at:
<https://www.aemc.gov.au/rule-changes/5-minute-settlement-and-global-settlement-implementation>
- Six areas of change:
 1. Determining marginal loss factors (MLFs) at 30-minute or shorter intervals
 2. Accommodating fast-start plant in pre-dispatch
 3. Process for amending the spot market operations timetable
 4. Correction to list of AEMO procedures for 5MS
 5. Timing for AEMO to publish unaccounted for energy (UFE) data
 6. Clarification around assigning non-market unmetered loads to a transmission node identifier TNI or VTN.

Update: 5MS implementation rule change request (2)

- AEMO has identified further aspects of the GS Rule that need amending to facilitate implementation:
 1. Removing financial responsibility at transmission connection points
 2. Settlement of non-market unmetered loads
 3. Treatment of embedded generators under GS
- AEMO will submit an addendum to the original rule change request in mid-late May to address these items.

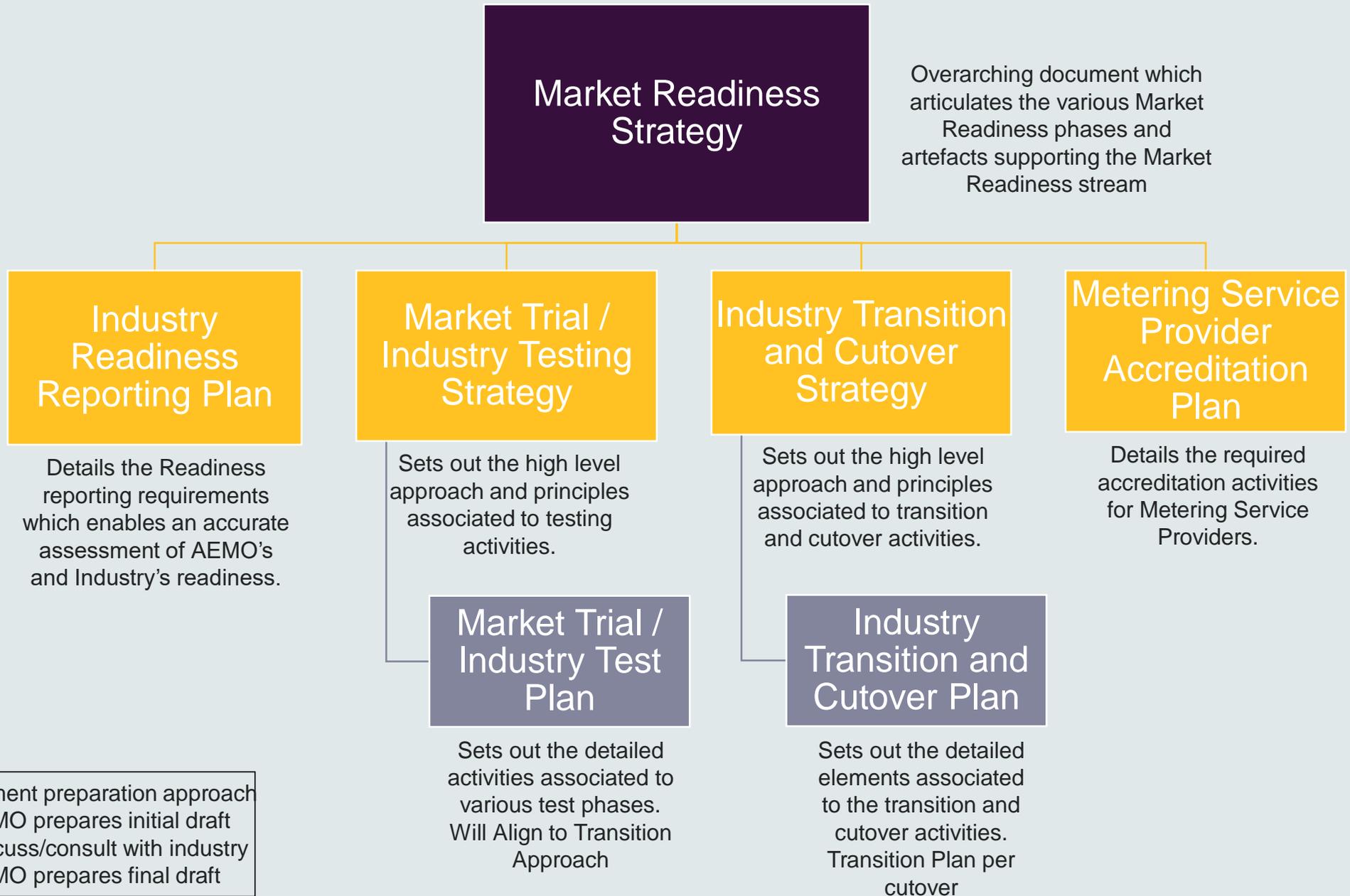
Readiness workstream update

Greg Minney

Work Stream Establishment

- Scope of Readiness includes :
 - Market Readiness Strategy and Plan
 - Readiness Reporting
 - Industry And Market Testing
 - Transition and Cutover planning and conduct
 - Metering Accreditation
- Industry Readiness Working Group
 - TOR for consultation with PCF
 - Market Testing Working group to address Market and Industry testing plans
 - Focus Groups to address specific activities (e.g Detailed Cutover Planning)

5MS/GS Readiness



Draft Timelines

| Item | Engagement Commences | Draft Paper Released | Final Paper Released |
|--|----------------------|----------------------|----------------------|
| Market Readiness Strategy | June 19 | 30 August 19 | 29 Nov 19 |
| Industry Test Strategy | June 19 | 30 August 19 | 31 Oct 19 |
| Transition & Go-Live Strategy | July 19 | 30 Sept 19 | 31 Jan 20 |
| Market Trial Strategy | August 19 | 29 Nov 19 | 28 Feb 20 |
| Metering Service Provider Accreditation Plan | August 19 | 29 Nov 19 | 31 Mar 20 |
| Industry Readiness Reporting Plan | Sept 19 | 29 Nov 19 | 31 Jan 20 |

NOTE: Deliverable Dates are currently draft/proposed dates

Stakeholder update

Monica Morona

Stakeholder Engagement Status

Stakeholder resources

- **Calendar:** An annual and monthly calendar has now been published and will be regularly updated, providing an overview of all meetings for 2019.
 - Calendar available online:
<https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>
- **Consultation status updates:** The consultation status updates have been re-established, with the first email update sent 24 April.
 - The update will be sent twice monthly.
- **Program newsletter:** From May the 5MS will be sending out a regular Program overview email
 - The update will cover general 5MS & GS implementation activities and Program milestones/delivery.

Stakeholder Engagement – Moving to Readiness

Key stakeholder activities

Supporting the workstreams to move towards Readiness and Implementation.

- Stakeholder engagement – feedback survey
 - Also seeking forum / working group specific feedback
- Update Stakeholder Engagement and Communications Plan – version 2.0
- Review small participant engagement approach
 - Improved / alternative opportunities for engagement

Readiness Planning

Greg Minney

Establishment of Industry Readiness Working Group

- Comment sought on TOR for Industry Readiness Working Group, prior to approval by AEMO Steering Committee
- Key Aspects:
 - Forum for industry engagement for Market Readiness Process for 5MS and GS
 - Identification of readiness related risks and issues, with escalation as appropriate to Executive Forum and PCF. Forum is not a decision making forum
 - Membership open to all industry stakeholders
 - Working and Focus groups will be established to contribute to specific areas of scope, including Market Testing, Cutover Planning
 - Draft TOR attached

Readiness Working Group

- Feedback on RWG Terms of Reference – 24 May 2019
- Membership nominations RWG – 31 May 2019
- All feedback and nominations should be sent via 5MS@aemo.com.au

Procedures Working Group Transition

Emily Brodie

Approach to transitioning 5MS procedures workstream

- **Stage 1: active engagement** through PWG on managing 5MS procedure changes (July 2018 to August 2019)
- **Stage 2: transitioning to BAU** through structured and supported engagement on procedural issues that arise from 5MS/GS implementation e.g. during industry testing and market trials
- **Stage 3: BAU** – AEMO teams run procedure changes

Approach to transitioning 5MS procedures workstream

| | Timeframe | Approach |
|---------|--------------------------|--|
| Stage 1 | May, June 2019 | <ul style="list-style-type: none"> • PWG meetings are scheduled – content will be metering focussed, reporting back on actions, reporting back on focus groups • Webex only? |
| | July, August 2019 | <ul style="list-style-type: none"> • PWG meetings not scheduled • Would run on via webex on an ad hoc basis if required • PWG will be adjourned. Any outstanding actions will be closed off via email or, if appropriate, transferred to the PCF, SWG or RWG |
| Stage 2 | from August 2019 to 2021 | <ul style="list-style-type: none"> • 5MS procedure issues arising from program (e.g. PCF, SWG, RWG, mailbox) are recorded in the procedures actions log • Procedures action log is maintained and coordinated through the 5MS program • 5MS procedure changes are managed by those AEMO teams responsible for the relevant procedures • Stakeholder engagement will include discussion/consultation through 5MS forums where appropriate |
| Stage 3 | 2021 onwards | <ul style="list-style-type: none"> • BAU - procedure changes are managed through those AEMO teams responsible for the relevant procedures |

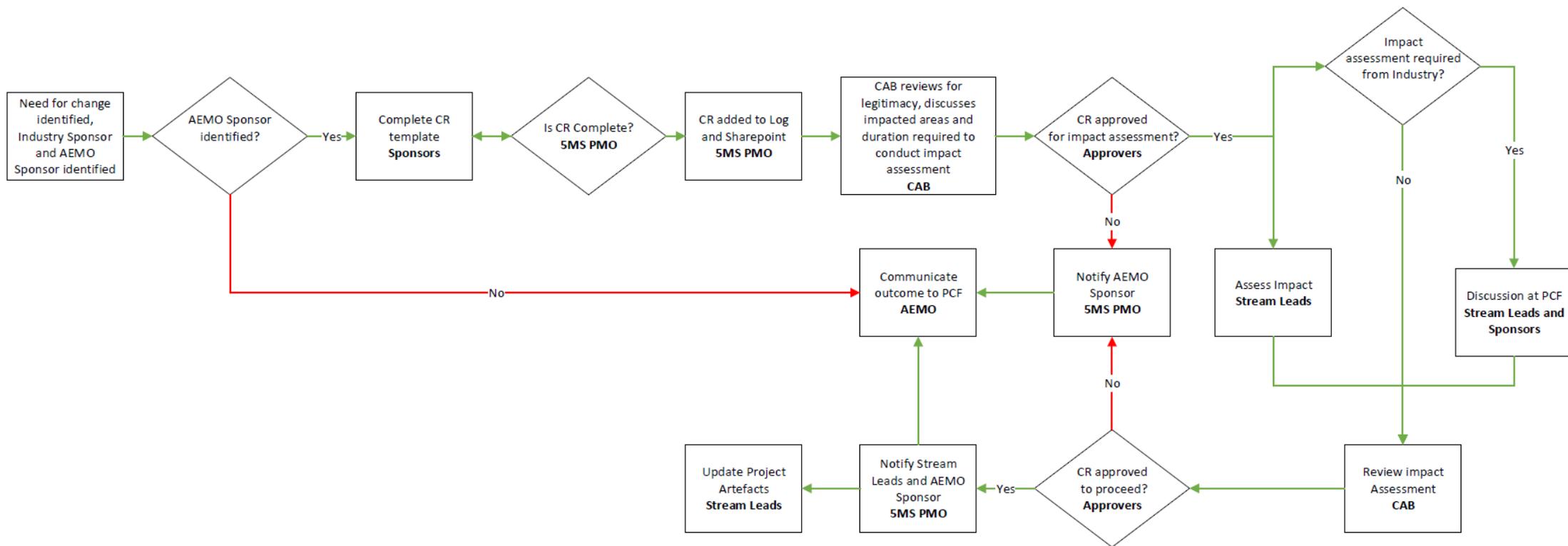
Program Change Request Process

Blaine Miner

Program CR process

- The 5MS Program Change Request (CR) process has been established to capture and consider opportunities/changes identified by either AEMO and/or market participants
- Potential CRs are to be submitted by completing the 5MS Program CR form
 - The submission of a completed CR form commences the CR assessment and approval process
- As part of the assessment process, the PCF may be engaged to consider the CRs value proposition
- The PCF, and the CR sponsors, will be notified of CR assessment outcomes

CR Process Flow Diagram



CR Form



Industry Project Change Request

| | | | |
|---|---|------------------------------|-----------------------------|
| Project Name | 5MS and GS Program | Id | [AEMO to allocate] |
| Industry Sponsor(s) | | Date | Click here to enter a date. |
| AEMO Sponsor | | | |
| Change Type | Choose an item. | | |
| Problem or Issue Description | [What is the issue or problem this change will address?] | | |
| Must, Should, Could, Nice to Have? | Choose an item. | Impacted Participants | Choose an item. |
| Change description and reason | [Describe the nature of the change and the reason for it.] | | |
| High Level Industry Benefits and Impacts | List any additional benefits/impacts created by this change to Participants | | |
| Out Of Scope | List any items out of scope for this Change Request | | |

Change Requests currently under consideration

| CR# | Title | Objective | Status |
|------|----------------------------------|---|--|
| CR01 | Calculation Engine Certification | Implementation of an independent certification process for the settlement calculation engine, to improve confidence in settlement results | As discussed at Settlement Focus Group, AEMO is currently scoping |
| CR04 | Pre-Dispatch | Enhancements to 5-minute Pre-dispatch, to provide improved market information in response to 5MS and the changing generation mix | Raised through 5MS Dispatch Focus Group, and seeking quantifiable benefits/impacts from participants |
| CR07 | Reconciliation reporting | Opportunities to provide additional metering/settlement data to improve reconciliation | Pending discussion at the Reconciliation Workshop on 24 May |

General questions

Chris Muffett

Further information

- AEMO 5MS Program contacts:
 - Graeme Windley, 5MS Program Manager
 - Chris Muffett, 5MS Business Lead
 - Emily Brodie, 5MS Procedure Lead
 - Greg Minney, 5MS Readiness Manager
 - Malcolm Borschman, 5MS Systems Lead
 - Peter Carruthers, 5MS Business Advocate
 - Monica Morona, 5MS & GS Stakeholder Engagement
- Contact details:
 - 5MS email: 5ms@aemo.com.au
 - 5MS webpage: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>

Forward meeting plan

Chris Muffett

Upcoming meetings

Meetings and forum dates:

<http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>



| Forums/Working Groups |
|------------------------|
| Executive (EF) |
| Program Consult. (PCF) |
| Procedures (PWG) |
| Systems (SWG) |
| Readiness (RWG) |

| Focus Groups |
|----------------------|
| Dispatch |
| Metering |
| Settlements |
| Reconciliation |
| Other |
| Information Sessions |

| National Public Holiday |
|-------------------------|
| State Public Holiday |

