



# Five-Minute Settlement Program: Program Consultative Forum 11

AEMO 5MS Program Team

FRIDAY 7 JUNE 2019

AEMO OFFICES:

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LEVEL 2, 20 BOND STREET, SYDNEY

LEVEL 9, 99 GAWLER PLACE, ADELAIDE

LEVEL 10, 10 EAGLE STREET, BRISBANE

DIAL IN: 02 9037 0069 ACCESS CODE: 574 009 028 MEETING PASSWORD: 94265777

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

# Agenda

NO.	TIME	AGENDA ITEM	RESPONSIBLE
<b>Preliminary Matters</b>			
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)
<b>Matters for Noting</b>			
3	10.20am – 10.40am	Program update	Sonja Nigmann(AEMO)
4	10.40am – 10.50am	Industry risks & issues	Chris Muffett (AEMO)
5	10.50am – 11.00am	Change request update	Chris Muffett (AEMO)
6	11.00am – 11.10am	Procedures Workstream update	Blaine Miner (AEMO)
7	11.10am – 11.20am	Systems Workstream update	Hamish McNeish (AEMO)
8	11.20am – 11.30am	Readiness Workstream update	Greg Minney (AEMO)
9	11.30am – 11.40am	Stakeholder update	Monica Morona (AEMO)
<b>Matters for Discussion</b>			
10	11.40am – 12.00pm	Global Settlement recap & integration approach	Chris Muffett (AEMO)
11	12.00pm – 12.20pm	Industry & market testing approach	Tui Grant (AEMO)
12	12.20pm – 12.40pm	Cutover and transition approach	Blaine Miner (AEMO)
<b>Other Business</b>			
13	12.40pm – 12.50pm	General questions	Chris Muffett (AEMO)
14	12.50pm – 1.00pm	Forward meeting plan	Chris Muffett (AEMO)

# Minutes and actions from previous meeting

Chris Muffett

# Actions

ITEM	TOPIC	ACTION REQUIRED	RESPONSIBLE	STATUS
8.9.1	Matters for Discussion – Recap from Executive Forum	Provide further info on cost recovery to the PCF and EF	Peter Carruthers	Completed. Consultation to commence in July 2019.
9.7.2	Readiness Workstream	Consider nominations for Readiness Working Group ahead of formal establishment	PCF members	Completed. AEMO to advise participants in mid-June.
9.9.2	Industry timelines	Provide more definition in regard to aligning schedules and proposed start date of market trials	Graeme Windley	Completed. Definitions updated in Meeting #11 pack. Aligning schedules will be a part of the RWG workstream and reported back to PCF at appropriate time, as per RWG timeframes.
10.2.1	Cost recovery	AEMO to include a milestone for cost recovery consultation process.	Chris Muffett	Completed. Will be included as a Level 1 milestone for completion of cost recovery – 3rd Quarter 2020
10.3.1	Systems Workstream	AEMO to provide an update to the PCF regarding metering technical specifications following the 20 May SWG at the June PCF, as relates to the delay to Metering Package 2 publication.	Hamish McNeish	Completed. To be discussed as part of Systems Workstream Update

# Actions

ITEM	TOPIC	ACTION REQUIRED	RESPONSIBLE	STATUS
10.3.2	Risks and Issues	AEMO to include B2B consequential impacts to the 5MS Industry Risks and Issues register.	Graeme Windley	Completed. Included in updated register
10.5.1	Procedures	AEMO to include a risk on the 5MS Industry Risks and Issues register that the 5MS/GS implementation rule change could trigger consequential procedure changes.	Graeme Windley	Completed. Included in updated register
10.8.1	Readiness Workstream	Participants to provide comments on the RWG TORs via 5ms@aemo	PCF Participants	Completed.
10.8.2	Readiness Workstream	AEMO to send out a formal call for nomination for the RWG via email, outlining the relevant skills and knowledge required.	Greg Minney / Monica Morona	Completed.
10.8.3	Readiness Workstream	Participants to provide RWG nominations	PCF Participants	Completed. AEMO to advise participants in mid-June.
10.11.1	General questions	AEMO to email to SWG and Dispatch FG seeking information on the merits / benefits and costs of pre-dispatch	Chris Muffett	Completed.

# Program update

Sonja Nigmann

# Program Update

- Overall
  - AEMO program status of Green
  - 4 x new milestones available for endorsement available for reporting today
- Procedures Workstream
  - Overall Green, a couple of documents delayed but no overall impact
  - Currently two procedure consultations are open for submissions
- Metering Workstream
  - AEMO Internal – Some elements of the technical design will extend by 2 weeks to continue analysis that optimises performance, usability and cost. No impact to subsequent milestones. Will be reviewed with PCF.
  - Delay in delivery of MSATS technical spec and File Format & Load process documentation, as a result of Procedures Metering Package 2 delay. Scope of Metering Level 2 milestones adjusted accordingly.
  - B2M via eHub technical guide was released 31 May
- Dispatch Workstream
  - New IT Wholesale & Settlements Manager – Sammy Wainrit, welcome Sammy. He has replaced Mal Borschman, effective from Monday 3 June.
  - AEMO Internal - Internal work on track. System Testing has begun for developed work packages
- Settlements Workstream
  - AEMO Internal - Internal work on track. System Testing has begun for developed work packages.
- Readiness Workstream

# Milestone Management

- Two new Level One Milestones for endorsement

#ID	Milestone		Description	Target Date
L1-15	5MS Drafting Amendments determined by AEMC	Regulatory	AEMC publish final determination and rule on 5MS & GS implementation	31-Aug-2019
L1-16	5MS Cost Recovery approach finalised	Regulatory	AEMO is to have finalised and published the cost recovery approach for the 5MS & GS rule changes	30-Sep-2020

- Two new Dispatch Level Two Milestones for endorsement

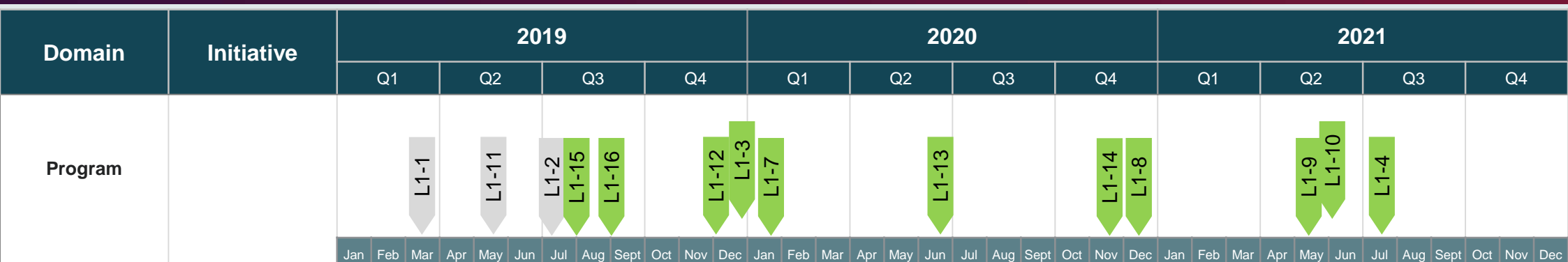
#ID	Level	Workstream	Milestone	Description	Target Date
L2-D12	2	Dispatch	Final Technical Specifications for Package 4 published by AEMO	Technical Specification for changes to Pricing (and Miscellaneous) as a result of 5MS and GS available to participants.	31-Jul-2019
L2-D13	2	Dispatch	Final Technical Specifications for Package 5 published by AEMO	Technical Specification for changes to the full data model as a result of 5MS and GS available to participants.	31-Jan-2020

One metering Level Two milestone change in scope (as endorsed by the OWE)

#ID	Level	Workstream	Milestone	Description	Target Date	Status	Notes
L2-M3	2	Retail	Final Technical Specifications for Packages 2 published by AEMO	Technical Specification for changes to Transition, Meter Data Load – MDFF, B2M via API as a result of 5MS and GS available to participants.	31-Jul-2019	[Firm]	Scope adjustment – B2M via API now part Package 2 (not package 1)



# Level 1 Milestones - Status Report

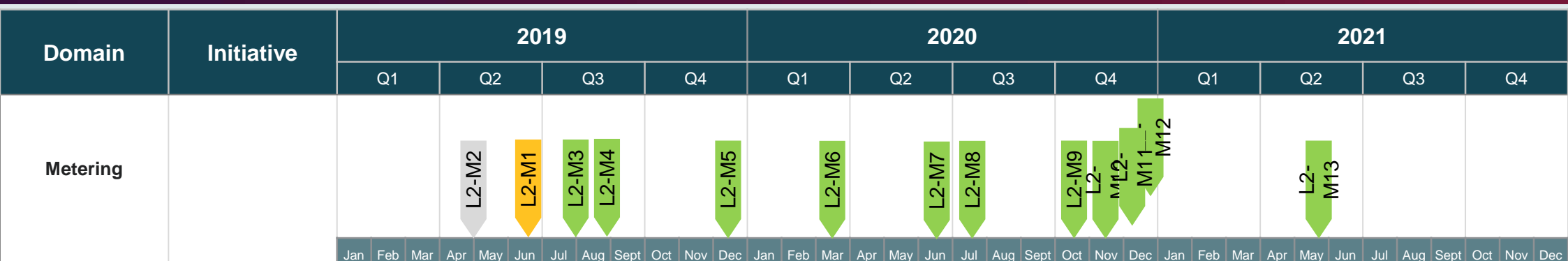


## Key Milestones (Program)

ID	Milestone	Target Date	Expected Date	Status
L1-1	5MS Drafting Amendments submitted to AEMC	20-Mar-2019	15-Mar-2019	Completed, however recent Procedure work has uncovered additional changes which are required. A further milestone will be defined for the additional changes.
L1-11	All AEMO workstream development commenced	23-May-2019	23-May-2019	Completed
L1-2	IEC Approves B2B Procedures	01-Jul-2019	01-Jul-2019	Completed
L1-15	5MS Drafting Amendments determined by AEMC	31-Aug-2019	31-Aug-2019	
L1-16	5MS Cost Recovery approach communicated	30-Sep-2019	30-Sep-2019	
L1-12	5MS Staging environment live	01-Dec-2019	01-Dec-2019	
L1-3	AEMO publishes NEM Procedures	01-Dec-2019	01-Dec-2019	
L1-7	Market Readiness Strategy Published by AEMO	20-Jan-2020	20-Jan-2020	
L1-13	AEMO Internal Development Completed	30-Jun-2020	30-Jun-2020	
L1-14	Market Participants Readiness for Market Trials	30-Nov-2020	[30-Nov-2020]	
L1-8	Participant Market Trials commence	01-Dec-2020	[01-Dec-2020]	
L1-9	Participant Market Trials conclude	31-May-2021	[31-May-2021]	
L1-10	Metering Accreditation Complete	31-May-2021	[31-May-2021]	
L1-4	5MS & UFE Market Go Live	01-Jul-2021	01-Jul-2021	
L1-5	GS Market Go Live	06-Feb-2022	06-Feb-2022	
L1-6	Mandatory 5MS Meter Data Delivery	01-Dec-2022	01-Dec-2022	

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

# Level 2 Milestones – Metering

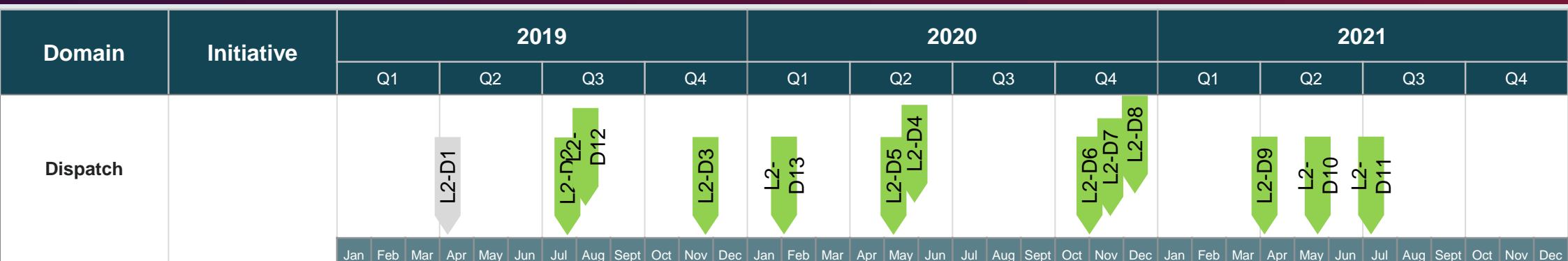


## Key Milestones (Program)

ID	Milestone	Target Date	Expected Date	Status
L2-M1	AEMO internal Metering solution – Solution Design complete (internal)	31-May-2019	17-Jun-2019	Internal delay, due to decision to continue analysis of elements of technical design in relation to performance, usability and cost. No impact to subsequent milestones.
L2-M2	Final Technical Specifications for Package 1 published by AEMO	30-Jun-2019	30-Apr-2019	Complete. Note two key tech specs moved to align with package 2 Procedures (discussed with SWG 20 May 2019).
L2-M3	Final Technical Specifications for Packages 2 published by AEMO	31-Jul-2019	31-Jul-2019	
L2-M4	Final Technical Specifications for Package 3 published by AEMO	31-Aug-2019	31-Aug-2019	
L2-M5	Software Drop for Packages 1 & 2 in 5MS Staging Environment	01-Dec-2019	01-Dec-2019	
L2-M6	Agreement on requirements for Accreditation & Market Trial	31-Mar-2020	[31-Mar-2020]	
L2-M7	AEMO internal Metering solution – Build complete (internal)	30-Jun-2020	30-Jun-2020	
L2-M8	Software Drop for Package 3 in 5MS Staging Environment	31-Jul-2020	31-Jul-2020	
L2-M9	AEMO internal Metering solution – Go Live complete (internal)	31-Oct-2020	[31-Oct-2020]	
L2-M10	New MDFF format accepted by AEMO	01-Nov-2020	[01-Nov-2020]	

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

# Level 2 Milestones - Dispatch

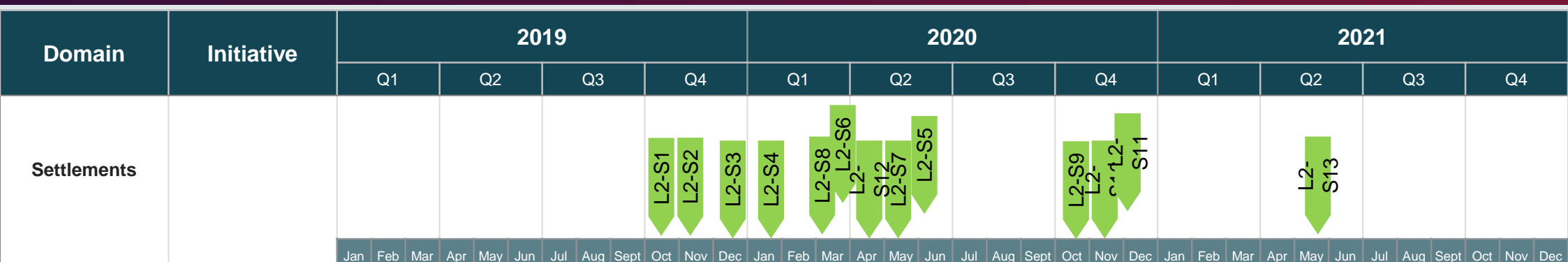


## Key Milestones (Program)

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 2 published by AEMO	31-Jul-2019	31-Jul-2019	
L2-D12	Final Technical Specifications for Package 2 published by AEMO	31-Jul-2019	31-Jul-2019	New Milestone (as per 7 June)
L2-D3	Software Drop for Packages 1,2 & 3 in 5MS Staging Environment	29-Nov-2019	29-Nov-2019	
L2-D13	Final Technical Specifications for Package 2 published by AEMO	31-Jan-2020	31-Jan-2020	New Milestone (as per 7 June)
L2-D5	Software Drop for Package 4 in 5MS Staging Environment	15-May-2020	15-May-2020	
L2-D4	Development completed (internal)	31-May-2020	31-May-2020	
L2-D6	UAT completed (internal)	30-Nov-2020	30-Nov-2020	
L2-D7	Market Trial preparation completed	30-Nov 2020	[30-Nov 2020]	
L2-D8	Market Trial preparation completed	30-Nov 2020	[30-Nov 2020]	
L2-D9	5-min Bidding Phased Go Live Begins	01-Apr-2021	[01-Apr-2021]	
L2-D10	Market Trial conclude	31-May-2021	[31-May-2021]	
L2-D11	30 min Bidding no longer accepted by AEMO	01-Jul-2021	01-Jul-2021	

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

# Level 2 Milestones – Settlements



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

Key Milestones (Program)				
ID	Milestone	Target Date	Expected Date	Status
L2-S1	Final Technical Specifications for Package 1 published by AEMO	15-Oct-19	15-Oct-19	
L2-S2	Software Drop for Package 1	01-Nov-19	01-Nov-19	
L2-S3	Final Technical Specifications for Package 2 published by AEMO	15-Dec-19	15-Dec-19	
L2-S4	Final Technical Specifications for Package 3 published by AEMO	31-Jan-20	31-Jan-20	
L2-S8	Market Trials for reallocations	13-Mar-20	[13-Mar-20]	
L2-S6	Software Drop for Package 2 in 5MS Staging Environment	16-Mar-20	16-Mar-20	
L2-S12	Reallocations Go Live	01-Apr-20	[01-Apr-20]	
L2-S7	Software Drop for Package 3 in 5MS Staging Environment	15-May-20	15-May-20	
L2-S5	Development completed (internal)	31-May-20	31-May-20	
L2-S9	UAT completed (internal)	16-Oct-20	16-Oct-20	
L2-S10	Market Trial preparation completed by participants	30-Nov-20	[30-Nov-20]	
L2-S11	Market Trial preparation completed by AEMO	30-Nov-20	[30-Nov-20]	
L2-S13	Market Trials conclude	31-May-21	[31-May-21]	

# Industry risks & issues

Chris Muffett

# Summary

- Updated register included in meeting pack
- 2 x risks added:
  - Unexpected impacts to B2B Procedures
  - Consequential impact from 5MS/GS implementation amendments
- 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>
- Propose to do a full review of risks/issues in the July meeting

# Change request update

Chris Muffett

# Change Requests currently under consideration

CR#	Title	Objective	Status
CR0 1	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
CR0 4	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 AEMO outcome to be provided to July PCF
CR0 7	Reconciliation reporting	Opportunities to provide additional metering/settlement data to improve reconciliation	Reconciliation Workshop identified 4 areas of opportunity, which AEMO is now considering
CR1 4	Enhancements to RERT	Implement changes to accommodate rule change for settlement of RERT	Currently being scoped, with minimal impact expected
CR1 5	Mandatory Restrictions	Reducing scope of changes in light of review	Currently considering approach – as discussed in Procedures update
CR1 6	Intervention Compensation Settlement	Implement changes to accommodate rule change for Intervention Compensation	Currently being scoped, with minimal impact expected



# Procedures workstream update

Blaine Miner

# Procedures workstream status (Level 3 milestones)

	Pre-consultation		Consultation			
5 MINUTE SETTLEMENT PROCEDURES TRACKING			TIMING			CONTENT
	HLIA	PWG Engagement	Consultation paper	Draft documents	Final documents	Package content
<b>METERING</b>						
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	Aug-19	Sep-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	
<b>SETTLEMENTS</b>						
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	
<b>DISPATCH</b>						
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	
<b>POWER SYSTEM OPS</b>						
1. Operations - Miscellaneous*	TBA	Apr 19 ongoing	n/a	n/a	Oct-19	

TIMING
Started and on track
Started late
Overdue

CONTENT
No issues
Issues
Severe issues

# Consultations - Metering

## 5MS Metering package 2

- Consultation commenced on 20 May 2019
- First stage **submissions due 24 June 2019**
- Final Report and procedures scheduled for publication 30 Sept 2019
- <http://aemo.com.au/Stakeholder-Consultation/Consultations/Five-Minute-Settlement---Metering-Procedure-Changes---Package-2?Convenor=AEMO%20NEM>

## 5MS Metering package 3

- Non-rules consultation, AEMO will share mark-ups for comment with industry
- Expected release is late June 2019

## Information sheet

- High level information on metering package #1 (complete) and progressive consultation approach for metering packages #2 and #3
- <http://aemo.com.au/-/media/Files/Electricity/NEM/5MS/Procedures-Workstream/Stakeholder-Consultation/Metering-package-2/5MS-GS---Metering-Fact-Sheet.pdf>

# Metering Consultations Overview

- **Package 1 –**
  - **5MS Only**
    - Contained 5 procedures all with an effective date of 1 July 2021
      - Met Part A, Met Part B, MDFF Spec, Meter Data Provision and Glossary & Framework
- **Package 2 – Co-consultation**
  - **ICFs**
    - Contains 8 procedures with an effective date of May 2020
  - **5MS/GS/Changes in the delivery of metering data to AEMO**
    - Contains 12 procedures with various effective dates
      - 4 with an effective date of Dec 2020
        - To allow for transitional periods for changes in the delivery of metering data to AEMO
      - 7 with an effective date of Feb 2022
      - 1 with an effective date of Late 2019

# So How Does It All Fit Together?

Legend	
Package 1 - 5MS	
Package 2 - ICFs	
Package 2 - 5MS/GS	

Procedure	Effective Date				
	2019	May-20	Dec-20*	Jul-21	Feb-22
Metrology Part A		v6.05		v7.0	v7.1
Metrology Part B		v6.1		v7.0	v7.1
MDFF Specification			v2.1	v2.0	
Meter Data Provision				v2.0	
Glossary & Framework				v3.0	v3.1
MDM Procedures			v4.0		
MDM Format & Upload Process			v2.0		
NMI Procedure					v7.0
CATS		v4.8			v5.0
WIGS		v4.8			v5.0
RoLR Processes Part A					v2.0
SLP MDP		v1.8	v2.0		
SLP MP		v1.4			
SLP ENM		v1.1			
Exemption - Meter Install. Malfunctions		v1.1			
Exemption - Data Storage	v1.0				

# Consultations – settlements & prudentials

## Auction Participation Agreement

- Consultation commenced on 22 March 2019
- First stage submissions closed 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

- Final report and procedure 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 closed 23 May
- Final report and procedures scheduled for publication 16 August
- <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures->

# Procedures workstream meetings

- Next PWG scheduled for Tuesday 11<sup>th</sup> June:
  - Update on power system operations
  - Debrief on reconciliation support workshop
  - Metering package #2 and #3
- Focus groups:
  - **Past:** Reconciliation support workshop was held Wednesday, 22 May 2019, Melbourne
  - **Future:** Metering focus group, Friday 14 June, Melbourne

# Mandatory restrictions under five-minute settlement

- AEMO is considering the approach to the mandatory restrictions (MR) and whether to keep the regime status quo i.e. i.e. operate mandatory restrictions on a 30-minute basis rather than than a 5-minute basis from 1 July 2021
- Context:
  - MR have never been used, jurisdictions have provided funding in support support of RERT
  - MR framework is currently under review as part of the AEMC's *Investigation into intervention mechanisms and system strength in the NEM*
- Benefits:
  - reduce system changes/costs, particularly if the investigation recommends that MR are changed or repealed
- Procedure impact: Minor terminology changes to *Mandatory Restrictions Offers procedure* (SO\_OP\_3713).



# Systems Workstream update

Hamish McNeish

# Systems Update – Systems Consultation

- In response to stakeholder feedback a number of changes have been made to improve the SWG information

- **SWG Consultation**

- A new consultation webpage has been added, covering:

- Workstream functions
- Current status
  - Not Commenced
  - HLIA (High-Level Impact Assmnt)
  - Draft Tech Spec
  - Final Tech Spec

• [Five-Minute Settlement Systems Dispatch and Operations Consultation](#) (146 KB, pdf)

Specific Function	Document Section(s)				Consultation Status	Release Date	Feedback / Submissions Due
	Version	Section	Version	Section			
Transition	0.7	4.2	HMMS SMS Technical Specification	8.1	Closed	2 April 2019	Closed
			0.1				
Billing Format and Data Model	0.7	4.3	HMMS SMS Technical Specification	3.2	Closed	2 April 2019	Closed
		4.4		5			
			0.1	7.8.5 7.11			

# Systems Update – Technical Specification

- Technical Specifications
  - The 5MS Technical Specification Webpage includes a list of:
    - Expected publications
    - Content and links to milestones
    - Draft and final dates



## Metering

Technical Document	Content	Status	Final Version Due	Last Release	SWG Related Level 2 Milestone	Comments
<a href="#">MDFP Specification NEM12 and NEM 13</a> <a href="#">Developed in the procedures package</a>	MDFP format to support 5-minute meter data	Final	30 Apr 19	30 Apr 2019	L2-M2	Developed in the procedures package.
<a href="#">MSATS Release Schedule &amp; Technical Specification</a>	Transition MDFP and MDMF meter data load process Metering APIs	Not commenced	31 Jul 19	Draft expected in late May 19	L2-M3	Draft expected in late May 19
<a href="#">MSATS Browser Changes</a> <a href="#">RM Reports</a>		Not commenced	31 Aug 19		L2-M4	Draft expected in late May 19

# System Update – SWG Schedule

- To help ensure information is clear:
  - Packages have been added the SWG Schedules to clarify the link to the L2 Milestones
  - Dates have been updated to match the L2 Milestones

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	5MS Staging	Preprod	Production
<b>DISPATCH AND OPERATIONS</b>										
<b>PACKAGE 1 - Bidding FTP and API</b>										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	02-Apr-19	Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	02-Apr-19	Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	02-Apr-19	Oct-19	29-Nov-19	Nov-20	Mar-21
<b>PACKAGE 2 - Bidding Web UI</b>										
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	31-Jul-19	Oct-19	29-Nov-19	Nov-20	Mar-21
<b>PACKAGE 3 - Dispatch, Pre-dispatch and PASA</b>										

# Systems Update

- Latest document releases:
  - 5MS Systems High-Level Impact Assessment (HLIA) – 17<sup>th</sup> May
    - Includes updates on B2M via APIs and MSATS Browser changes
    - Feedback due 3<sup>rd</sup> June
  - MDFF Specification – 20<sup>th</sup> May
    - Included in Procedures Metering Package 2
    - Feedback due 24<sup>th</sup> June
  - MDM format and Upload Process – 20<sup>th</sup> May
    - Included in Procedures Metering Package 2
    - Feedback due 24<sup>th</sup> June

# Readiness workstream update

Greg Minney

# Work Stream Establishment

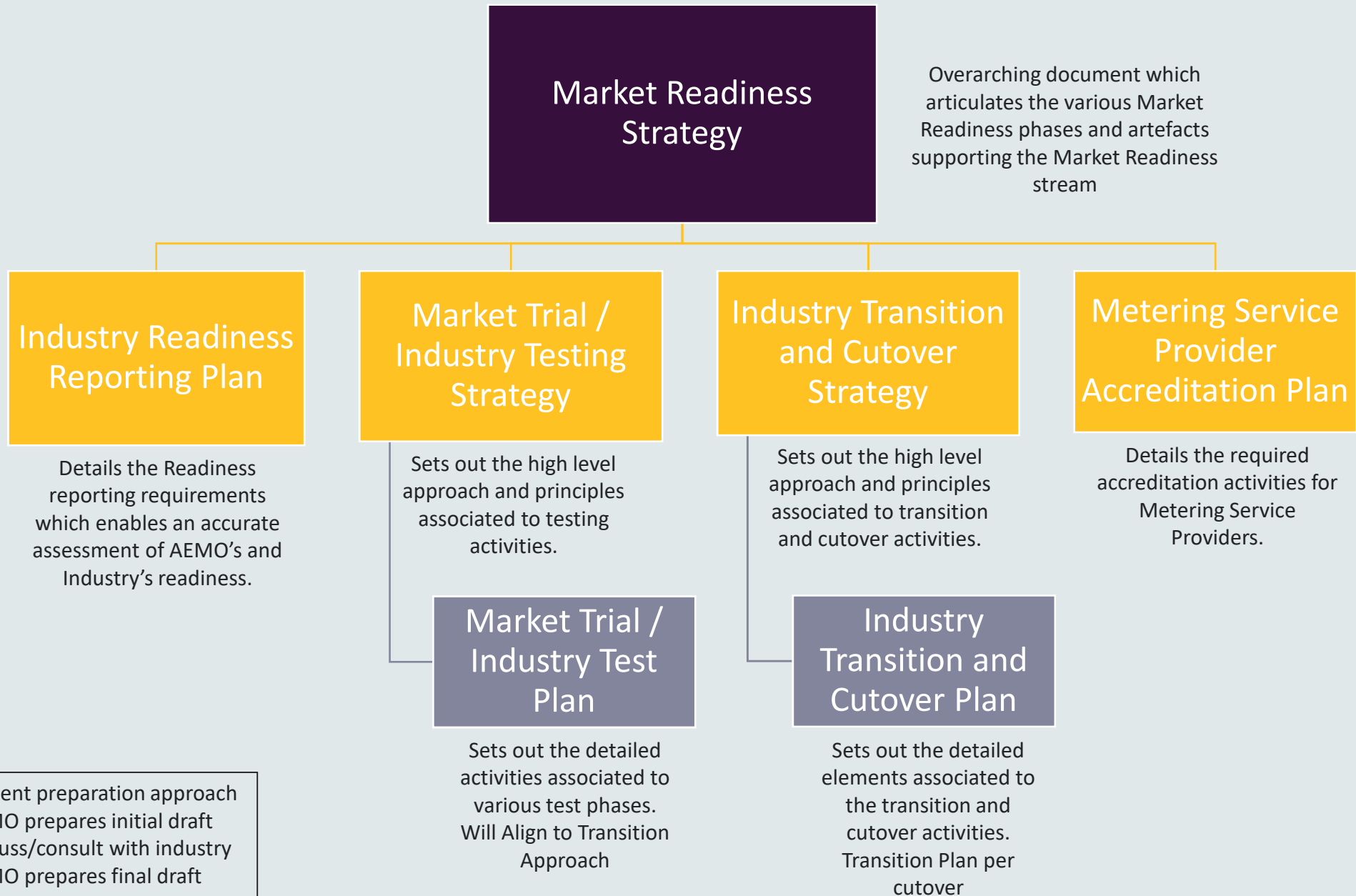
- Nominations for Work Group
  - Nominations received
  - Confirmation of nominations in progress
- Initial Work Group meeting
  - 25<sup>th</sup> June – invitations to be distributed
- Proposed Engagement Priorities for Initial Working Group input (Attached)

# Work Group Engagement – Initial Priorities

Meeting	Date	Meeting Topics	Deliverables for Consultation	Draft Date	Deliverables Finalised (post Consultation)	Draft Date
<b>Initial Meeting</b>	June	Work Group Expectations Objectives of Market Readiness Scope of Readiness Work Stream and AEMO Approach Ground Rules for Work Group Interaction Deliverables / Timing and priority				
<b>Meeting 2</b>	July	Market Readiness Strategy Input Deliverables / Timing Feedback Transition Principles and Approach Input Testing Phases and Approach Interim Readiness Reporting Approach	Market Readiness Strategy	30/08/2019		
<b>Meeting 3</b>	August	Feedback on Transition Principles / Timing Market Trial Strategy Input Interim Readiness Reporting approach/ criteria/ timing	Industry Test Strategy Transition and Go-Live Strategy	2/9/2019 27/09/2019		
<b>Meeting 4</b>	September	Principles for Industry Readiness Reporting Initial Issues and Risks Workshop			Industry Test Strategy	30/10/2019



# 5MS/GS Readiness



# Stakeholder update

Monica Morona

# Stakeholder Engagement Update

- **Calendar:** An annual calendar has been updated for June – August for all 5MS Forum and Working Group meetings.
  - Calendar available online:  
<https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>
- **Stakeholder Survey:** Scheduled for June, AEMO will be undertaking a six monthly survey of 5MS stakeholders.
  - Outcomes of the survey will be presented the July PCF.
- **Consultation Fortnightly Update:** feedback noted that a section for upcoming consultation would also be of benefit.
- **Program newsletter:** The 5MS team will be sending out a regular Program overview email
  - The update will cover general 5MS & GS implementation activities and Program milestones/delivery.

# Stakeholder Resources – Webpage Update

Focus on improving available information – particularly the website. Started with the Systems webpage. Focus on providing clarity for:

- Technical documentation and specification updates dates
- Consultation requirement and timeframes
- Linkages to milestones and other 5MS Program deliverables

5MS team are working to improve the information provided to industry as the Systems workstream moves towards finalisation and the Program transitions to Readiness and Implementation.

This includes:

- Stakeholder feedback surveys to understand industry needs
- Update Stakeholder Engagement and Communications Plan – version 2.0
- Review of small participant engagement approach
- 5MS website review and update – Systems Workstream main focus

# Systems Webpage Update

The screenshot displays the AEMO Systems Webpage. At the top, there is a navigation bar with links for Stakeholder Consultation, AEMO, Dispatch and Operations, Market Centre, and Contact Us. The AEMO logo is on the left, and navigation buttons for Electricity and Gas are on the right. Below the navigation bar, a breadcrumb trail shows: NATIONAL ELECTRICITY MARKET > FIVE MINUTE SETTLEMENT AND GLOBAL SETTLEMENT > SYSTEMS WORKSTREAM > SYSTEMS TECHNICAL CONSULTATION > DISPATCH AND OPERATIONS. The main header is 'DISPATCH AND OPERATIONS'. A left-hand menu lists 'In this section' with sub-items: Systems Technical Consultation, Dispatch and Operations (highlighted), Metering, and Settlement. The main content area is titled 'Dispatch and Operations' and features a link to 'Five Minute Settlement Systems Dispatch and Operations Consultation (146 KB, pdf)'. Below this is a table of consultation documents.

Specific Function	Document Section(s)				Consultation Status	Release Date	Feedback / Submissions Due
	H1 IA		Tech Specs				
	Version	Section	Version	Section			
Transition	0.7	4.2	EMMS EMS Technical Specification	8.1	Closed	2 April 2019	Closed
				0.1			
Bidding Format and Data Model	0.7	4.3	EMMS EMS Technical Specification	3.7	Closed	7 April 2019	Closed
				5			
				7.8.5 7.11 9			

# Systems Webpage Update

## Systems Dispatch & Operations – Consultation

Specific Function	Workstream Stage	Document Sections				Consultation Status	Release Date	Feedback / Submissions Due	Relevant Level 2 Milestones	Systems Workstream Package	Procedures Workstream Package	Comments
		HLIA		Tech Specs								
		Version	Sections	Version	Sections							
Transition	Final (Proposal)	0.7	4.2	<a href="#">EMMS 5MS Technical Specification</a> 0.1	8.1	Closed	2 April 2019	Closed	L2-D1	Dispatch & Operations Package 1: Bidding FTP and API		Proposed Tech Specs subject to review and adoption by Readiness workstream
Bidding Format and Data Model	Final Tech Spec	0.7	4.3 4.4	<a href="#">EMMS 5MS Technical Specification</a> 0.1	3.2 5 7.8.5 7.11 9	Closed	2 April 2019	Closed	L2-D1	Dispatch & Operations Package 1: Bidding FTP and API	Dispatch Package 1 Bids & Offers	
Bidding Web UI and APIs	Draft Tech Spec	0.7	N/A	<a href="#">EMMS 5MS Technical Specification</a> 0.05	6.1 7.8.6 to 7.8.9	Draft Tech Spec Closed	1 March 2019	Closed	L2-D2	Dispatch & Operations Package 2 - Bidding Web UI	Dispatch Package 1 – Bids & Offers	Subject to prototyping
Dispatch schedule	Final Tech Spec	0.7	4.7	<a href="#">EMMS 5MS Technical Specification</a> 0.1	3.3	Closed	2 April 2019	Closed	L2-D1	Dispatch & Operations Package 3 - Dispatch, Pre-dispatch and PASA	Dispatch Package 1 – Bids & Offers	

# Systems Webpage Update

**SYSTEMS TECHNICAL DOCUMENTS**

**In this section**

- Systems Workstream
- Systems Working Group (SWG)
- Systems Technical Documents
- Systems Technical Consultation

**Overview:**

The systems technical documentation provides the detail of the changes to AEMO's market facing systems. These documents are expected to provide the information required to allow industry to understand AEMO's IT systems changes and for industry or vendors to make the required changes to their own systems.

The technical specifications are being produced in stages, allowing progressive release and consultation on the 5 minute and global settlement changes. The following table provides the current status of these documents.

For more information on Systems consultation activities and timelines click [here](#) for the Systems Consultation page.

**Dispatch and Operations, Settlements and Metering**

Technical Document	Content	Final Version Due	Status	Last Release	SWG Related Level 2 Milestone	Comments
<a href="#">SWS Systems High-Level Impact Assessment (HLIA)</a>	Retail Systems	30 Dec 18	Draft	17 May 2018	N/A	The HLIA is a working document updated periodically as consultations and designs complete.
	Dispatch Systems					
	Operational Systems					
	Settlement Systems					

**Dispatch and Operations**

Technical Document	Content	Status	Final Version	Last Release	SWG Related	Comments

# Feedback Surveys

**Consultation status updates:** Have received feedback from the surveys from PCF, PWG, SWG and Reconciliation Workshop. Key themes include:

- Focus on Readiness and Cutover information and updates
- More information on Program interdependencies / timeframes
- AEMO to outline requirements and expectations for participation / feedback ahead of the meeting



# Global Settlement recap & integration approach

Chris Muffett

# Global settlement recap

- On 6 December 2018, the AEMC finalised a rule to implement Global Settlement
- Global Settlement is an alternative methodology for settling within a distribution area, that will replace settlement-by-difference
  - This will remove any inequity between retailers, and provide visibility of the Unaccounted For Energy (UFE) within distribution areas.
- More information is provided in the Global Settlement fact sheet:  
[http://www.aemo.com.au/-/media/Files/Electricity/NEM/5MS/Program-Information/2018/5MS\\_What-is-global-settlement.pdf](http://www.aemo.com.au/-/media/Files/Electricity/NEM/5MS/Program-Information/2018/5MS_What-is-global-settlement.pdf)

# Global settlement implementation timeline

**1 December 2019**

AEMO procedures updated for both 5MS and GS

**1 July 2021**

5MS begins  
AEMO starts publishing UFE data ('soft start')

New *procedure* required  
[NER 3.15.5(d) and 11.112.5]

**6 February 2022**

GS begins

**1 March 2022**

AEMO's first annual report on UFE trends

New *annual report* [NER 3.15.5B] and new *reporting guidelines* [NER 3.15.5B(d) and 11.112.6]

# Key areas of impact

- Several procedures are impacted, and are being consulted on as part of the metering and settlements packages
- Changes to AEMO systems are required, across both retail and wholesale systems
- Additional data is required:
  - NSPs/MDPs are required to provide information on non-contestable unmetered loads
  - MDPs are required to provide metering data for all connection points, using the data delivery process currently being consulted on
- AEMO will begin publication of UFE from 1 July 2021, although there will be no financial impact from the allocation of UFE
  - UFE allocation will become financial from 6 February 2022
- GS will take effect on 6 February 2022 through a change to participant roles

# GS integration approach

- Global settlement is being implemented in parallel with Five-Minute Settlement, with AEMO systems being developed to handle both arrangements
- Key functionality will be delivered as part of the combined cutover and transition arrangements, but with switches to control:
  - Calculation and publication of UFE – to be activated for periods after 1 July 2021
  - Financial allocation of UFE – to be activated for periods after 6 February 2022
  - Treatment of all distribution connection points as 2<sup>nd</sup> tier (i.e. settle globally) – activated by a change to role standing data on 6 February 2022
- Global settlement arrangements will be exercised during the market trial, and potentially will involve switching between current and global settlement arrangements.

# Industry & market testing approach

Tui Grant

# Market Trial Approach

- There will be a number of go live dates for the program, each requiring participants to assess the changes and engage in AEMO testing as their business interests dictate.
- Testing will be a mix of Informal, Invitation and Formal Market Trials. Each is a key component of Participant readiness
  - Supported by Industry staging environment and individual participant programs
- Focus of testing is on process interaction between market participants
  - Communication between participants
  - Key market processes
- Key processes and flows will be planned into cycles with data preparation agreed between scenario participants as part of test planning
- AEMO will consolidate participant reported issues and completion statistics for overall readiness assessment
  - Participant self assessment







# 5MS Potential Market Testing – Settlements

- **Participants**

- Wholesale Generators FRMP
- Bass Link

- **Open invitation for full market trial for participants impacted**

- **Go Live: 5 minute settlement**
  - New settlements with 5 minute reads

Core Function	Key Elements	Critical Tests	Systems Impacted
Settlements	New Invoice layout	Produce invoice from the new system	Settlements
Settlements	new reports	Provide reports/files for participants to consume and verify	Settlements
Settlements	additional data produced	Provide reports/files for participants to consume and verify	Settlements
Settlements	Go Live	Invoice for the go live period with a mix of 5 and 1/2 hourly data	Settlements

# 5MS Potential Market Testing – Dispatch and Bidding

- **Participants**

- Wholesale Generators
- Bass Link

- **Open invitation for full market trial to participants impacted**

- **Go Live: 5 minute bidding**

- New API's and screens

all remaining functionality

- Reporting etc

Core Function	Key Elements	Critical Tests	Systems Impacted
Dispatch	Any report associated with dispatch	Participants running reports to confirm able to download and content	Bidding
Bidding	Submission interfaces - API , FTP and Web	Enter new 5 minute bids for new periods and existing half hour periods	Bidding
Bidding	Simulate cutover	Simulate the cut over date so participants can verify what will occur on 1 <sup>st</sup> July	All
Bidding	New bidding format	Enter new 5 minute bids for new periods and existing half hour periods	Bidding

# Cutover & transition approach

Greg Minney

# Transition and Cutover Approach

- AEMO to develop Transition and Cutover approach options
  - Scope includes: AEMO IT Systems Releases, Participant Systems, Physical Metering Upgrades, Data population and update, Participant and AEMO responsibilities, Market commencement (5MS / GS)
  - Assessment of benefits/ disadvantages of alternate approaches
  - Transition Considerations (attached slide)
- Engage Industry via RWG (July / August) for input
- Transition and Go Live Strategy for consultation (Sept)
- Finalise Strategy (Jan 2020)
- Transition Plan(s) to support implementation of agreed strategy
  - Identified cutovers – with detailed cutover plans
  - Expected transition activities and participant / AEMO responsibilities
  - Monitoring of progress against agreed transition plan

# Draft Transition and Cutover considerations

- Rule mandated capabilities and timings
- Early release of Capability to support participant preparation
  - Testing and proving environments
  - Production capability
- Minimise number of participant required upgrades
- Market confidence in Settlement Process
- Separate internal AEMO Platform Upgrade from 5 MS Market Start
- Timeframes and capability to support meter upgrades (type 1,2,3,4\*, 7) before 1 July and GS metering population requirements
- Internal Business readiness to support – platforms and Market Operation
- Industry proving and Market Trial Timeframe and approaches
- Pre Production releases for participant testing prior to upgrade of internal AEMO systems
- Reflect business cycles during transition period
- Metering Accreditation updates in line with MDP system and process upgrades

# 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
  - Jim Agelopoulos, 5MS Retail Systems Lead
  - Sammy Wainrit, 5MS Wholesale Systems Lead
  - Peter Carruthers, 5MS Business Advocate
  - Monica Morona, 5MS & GS Stakeholder Engagement
- Contact details:
  - 5MS email: [5ms@aemo.com.au](mailto: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>

JUNE							JULY						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	31	1	30	1	2	3	4	5	6
2	3	4	5	6	7	8	7	8	9	10	11	12	13
9	10	11	12	13	14	15	14	15	16	17	18	19	20
16	17	18	19	20	21	22	21	22	23	24	25	26	27
23	24	25	26	27	28	29	28	29	30	31	1	2	3
30	1	2	3	4	5	6	4	5	6	7	8	9	10

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



# Appendix

# Appendix 1 – Level 1 & 2 milestones

# Level One Milestones – Description

#ID	Milestone		Description	Original Target Date	Status
L1-1	5MS Drafting Amendments submitted to AEMC	Regulatory	Issues with current drafting collated and submitted back to the AEMC by AEMO.	20-Mar-2019	Completed
L1-2	IEC Approves B2B Procedures	Regulatory	The IEC must have consulted and recommended to AEMO any changes to the B2B procedures.	01-Jul-2019	Completed
L1-3	AEMO publishes NEM Procedures	Regulatory	The approved 5MS and GS changes to NEM Procedures are completed and published on the AEMO website.	01-Dec-2019	Mandated
L1-4	5MS & UFE Market Go Live	Regulatory	Industry settles electricity at five-minute intervals. UFE reported to market.	01-Jul-2021	Mandated
L1-15	5MS Drafting Amendments determined by AEMC	Regulatory	AEMC publish final determination and rule on 5MS & GS implementation	31-Aug-2019	Provisional
L1-16	5MS Cost Recovery approach finalised	Regulatory	AEMO is to have finalised and published the cost recovery approach for the 5MS & GS rule changes.	30-Sep-2020	Provisional
L1-5	GS Market Go Live	Regulatory	NEM Market Settlements operation commences using Global Settlements.	06-Feb-2022	Mandated
L1-6	Mandatory 5MS Meter Data Delivery	Regulatory	Five-minute reads are mandatory from all new and replacement meters.	01-Dec-2022	Mandated

#ID	Milestone		Description	Original Target Date	Status
L1-7	Market Readiness Strategy Published by AEMO	Readiness	A completed Market Readiness strategy is published on the AEMO website.	20-Jan-2020	Firm
L1-14	Market Participants Readiness for Market Trials	Readiness	All Market Participants are ready for the commencement of 5MS Market Trials.	30-Nov-2020	Provisional
L1-8	Participant Market Trials commence	Readiness	Initial 5MS Market Trial commences.	01-Dec-2020	Provisional
L1-9	Participant Market Trials conclude	Readiness	Final Market Trial completes.	31-May-2021	Provisional
L1-10	Metering Accreditation Complete	Readiness	MPs and MDPs who are delivering 5-min data for 1 July 2021 have been accredited as part of the market readiness process.	31-May-2021	Provisional
L1-11	All AEMO workstream development commenced	System Delivery	All internal workstreams will have commenced development to deliver the 5MS and GS solutions.	23-May-2019	Completed
L1-12	5MS Staging environment live	System Delivery	The 5MS Staging environment is available to Participants, who can interact with deployed 5MS and GS code.	01-Dec-2019	Provisional
L1-13	AEMO Internal Development Completed	Systems Delivery	All AEMO internal system development completed.	30-Jun-2020	Provisional

# Level Two Milestones – Metering (External)

#ID	Level	Workstream	Milestone	Description	Date	Status
L2-M1	2	Retail	<i>AEMO internal Metering solution – Solution Design complete (internal)</i>	Solution Design phase for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete.	31-May-2019	Firm
L2-M2	2	Retail	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to MDFF NEM12 NEM13 as a result of 5MS and GS available to participants.	30-Apr-2019	Complete
L2-M3	2	Retail	Final Technical Specifications for Packages 2 published by AEMO	<b>Technical Specification for changes to Transition, Meter Data Load – MDFF, B2M via API as a result of 5MS and GS available to participants.</b>	31-Jul-2019	Firm
L2-M4	2	Retail	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for changes to the MSATS Browser (LVI) and MSATS Report changes as a result of 5MS and GS available to participants.	31-Aug-2019	Firm
L2-M5	2	Retail	Software Drop for Packages 1 & 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Meter Data Load – MDFF and B2M via API available for participant testing.	01-Dec-2019	Firm
L2-M6	2	Retail	Agreement on requirements for Accreditation & Market Trial	Program agreement of the Accreditation requirements and process, and on market testing requirements and process.	31-Mar-2020	Provisional
L2-M7	2	Retail	<i>AEMO internal Metering solution – Build complete (internal)</i>	Build phase for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete	30-Jun-2020	Firm
L2-M8	2	Retail	Software Drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for MSATS Browser (LVI) and MSATS Report enhancements and available for participant testing.	31-Jul-2020	Firm
L2-M9	2	Retail	<i>AEMO internal Metering solution – Go Live complete (internal)</i>	Go Live date for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete	31-Oct-2020	Provisional
L2-M10	2	Retail	New MDFF format accepted by AEMO	AEMO deploys MDFF capable software to PROD, and all market participants can begin submitting files in the new MDFF format.	01-Nov-2020	Provisional
L2-M11	2	Retail	Market Trial preparation completed by participants	All market participants who are required to submit five-minute meter reads are ready for market trials	30-Nov-2020	Provisional
L2-M12	2	Retail	Market Trial preparation completed by AEMO	AEMO has deployed all relevant software to the 5MS pre-Production environment and is ready to deliver the agreed Market Trial scenarios	30-Nov-2020	Provisional
L2-M13	2	Retail	Market Trials conclude	All relevant Market Participants have completed Market Trials to submit five-minute read data.	31-May-2021	Provisional

# Level Two Milestones – Dispatch (External)

#ID	Level	Workstream	Milestone	Description	Date	Status
L2-D1	2	Dispatch	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to Dispatch, Pre-dispatch P30/7DAY, ST PASA, Bidding Data Model and Bidding Format as a result of 5MS and GS available to participants.	2-Apr-2019	Firm
L2-D2	2	Dispatch	Final Technical Specifications for Package 2 published by AEMO	Technical Specification for changes to the Bidding Web UI and APIs as a result of 5MS and GS available to participants.	31-Jul-2019	Firm
L2-D12	2	Dispatch	Final Technical Specifications for Package 4 published by AEMO	Technical Specification for changes to Pricing (and Miscellaneous) as a result of 5MS and GS available to participants.	31-Jul-2019	[Firm]
L2-D3	2	Dispatch	Software Drop for Packages 1,2 & 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Dispatch, Predispatch P30/7DAY, ST PASA, Bidding Data Model and Bidding Format, Bidding Web UI and APIs and Predispatch P5.	29-Nov-2019	Firm
L2-D13	2	Dispatch	Final Technical Specifications for Package 5 published by AEMO	Technical Specification for changes to the full data model as a result of 5MS and GS available to participants.	31-Jan-2020	[Firm]
L2-D5	2	Dispatch	Software Drop for Package 4 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for RERT, Trading Price / Price Revision, Administrated Pricing and CPT, Suspension Pricing, Negative Residue Management, data model for Dispatch	15-May-2020	Firm
L2-D4	2	Dispatch	<i>Development completed (internal)</i>	All AEMO internal development work has completed for the Dispatch stream	31-May-2020	Firm
L2-D6	2	Dispatch	<i>UAT completed (internal)</i>	All AEMO internal UAT has completed for the Dispatch stream	30-Nov-2020	Firm
L2-D7	2	Dispatch	Market Trial preparation completed	All market participants who are required to submit 5MS bids and offers are ready for market trials	30-Nov 2020	Provisional
L2-D8	2	Dispatch	Market Trial preparation completed	AEMO has software deployed to pre-production environment and is ready to deliver the agreed Market Trail scenarios	30-Nov 2020	Provisional
L2-D9	2	Dispatch	5-min Bidding Phased Go Live Begins	Participants can begin submitting 5-min bids to the market	01-Apr-2021	Provisional
L2-D10	2	Dispatch	Market Trial conclude	Market Trial scenarios related to dispatch have been completed	31-May-2021	Provisional
L2-D11	2	Dispatch	30-min Bidding no longer accepted by AEMO	All Wholesale market Participants now submitting five-minute bids and offers to AEMO	01-Jul-2021	Mandatory

# Level Two Milestones – Settlements (External)

#ID	Level	Workstream	Milestone	Description	Date	Status
L2-S1	2	Settlements	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to Reallocation as a result of 5MS and GS available to participants.	15-Oct-2019	Firm
L2-S2	2	Settlements	Software Drop for Package 1	Software deployed into the 5MS Staging environment for Reallocations.	01-Nov-2019	Firm
L2-S3	2	Settlements	Final Technical Specifications for Package 2 published by AEMO	Technical Specification for changes to Settlements and Billing as a result of 5MS and GS available to participants.	15-Dec-2019	Firm
L2-S4	2	Settlements	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for changes to Prudentials as a result of 5MS and GS available to participants.	31-Jan-2020	Firm
L2-S5	2	Settlements	<i>Development completed (internal)</i>	All AEMO internal development work has completed for Settlements stream	31-May-2020	Firm
L2-S6	2	Settlements	Software Drop for Package 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Settlements and Billing.	16-Mar-2020	Firm
L2-S7	2	Settlements	Software Drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Estimations and Prudentials.	15-May-2020	Firm
L2-S8	2	Settlements	Industry Testing for Reallocations	Required market participants have completed industry testing for the upgraded reallocations web portal.	13-Mar-2020	Provisional
L2-S9	2	Settlements	<i>UAT completed (internal)</i>	All AEMO internal UAT has completed for Settlements stream	30-Nov-2020	Firm
L2-S10	2	Settlements	Market Trial preparation completed by participants	All market participants who will receive Wholesale settlement invoicing are ready for market trials.	30-Nov-2020	Provisional
L2-S11	2	Settlements	Market Trial preparation completed by AEMO	AEMO has deployed all relevant software to the 5MS pre-Production environment and is ready to deliver the agreed Market Trial scenarios.	30-Nov-2020	Provisional
L2-S12	2	Settlements	Reallocations Go Live	AEMO has deployed reallocation software to the PROD environment and 5-minute reallocation requests are enabled.	01-Apr-2020	Provisional
L2-S13	2	Settlements	Market Trials conclude	All relevant Market Participants have passed the Market Trial for Settlements	31-May-2021	Provisional