

# Five-Minute Settlement Program: Program Consultative Forum 12

AEMO 5MS & GS Program Team

FRIDAY 4 JULY 2019

AEMO OFFICES:

LEVEL 22, 530 COLLINS STREET, MELBOURNE  
SYDNEY

LEVEL 2, 20 BOND STREET,

LEVEL 9, 99 GAWLER PLACE, ADELAIDE

LEVEL 10, 10 EAGLE STREET, BRISBANE

**WEBEX** – ACCESS CODE: 573 135 441; PASSWORD: Qm283435

**DIAL IN** – NO: 1800 468 102 / 02 9037 0069; ACCESS CODE: 573 135 441; PASSWORD: 762 834 35

**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 – 10.15am	Minutes and actions from previous meeting	Chris Muffett (AEMO)
2a	10.15am – 10.25am	Milestone Change Assessment Approach	Graeme Windley (AEMO)
<b>Matters for Noting</b>			
3	10.25am – 10.45am	Program update	Graeme Windley (AEMO)
4	10.45am – 11.00am	Systems Workstream update	Hamish McNeish (AEMO)
6	11.00am – 11.10am	Change request update	Chris Muffett (AEMO)
<b>BREAK 11:10am – 11.20am</b>			
7	11.20am – 11.30am	Readiness Workstream update	Greg Minney (AEMO)
8	11.30am – 11.40am	Procedures Workstream update	Emily Brodie (AEMO)
<b>Matters for Discussion</b>			
9	11.40am – 12.10pm	Industry Risks & Issues Review	Graeme Windley (AEMO)
10	12.10pm – 12.30pm	Market Readiness Reporting	Greg Minney (AEMO)
<b>Other Business</b>			
11	12.30pm – 12.40pm	General questions	Chris Muffett (AEMO)
12	12.45pm – 12.45pm	Forward meeting plan	Chris Muffett (AEMO)

# Minutes and actions from previous meeting

Chris Muffett

# Actions

ITEM	TOPIC	ACTION REQUIRED	RESPONSIBLE	STATUS
11.3.1	Program Update	Action 11.3.1 – AEMO to propose an approach to assessing the impacts of potential milestone changes to industry delivery.	Graeme Windley	4 July 2019 Update and new framework presented at Agenda Item 2a
11.3.2	Program Update	AEMO to confirm milestone reporting classifications – critical dependencies classification	Graeme Windley	4 July 2019 See MPP file for further information

# Milestone Review and Assessment of Impact: AEMO

- AEMO is to engage on a collaborative process with the PCF in discussing milestone delays which could impact AEMO's program, participant programs and/or market readiness
- The table below contains the information AEMO will provide the relevant Working Groups and the PCF upon assessing the impact of milestone changes
- This is a mandatory process for any scope, time or cost change for all milestones

<b>#ID</b>	
<b>Description</b>	
<b>Current Date</b>	<b>Proposed Date</b>
<b>Change Requested</b>	
<b>Impacted</b>	<b>Directly:</b> <b>Indirectly:</b>
<b>AEMO Assessment</b>	<b>Scope change:</b> <b>Schedule change:</b> <b>AEMO recommendation:</b>
<b>Risk Assessment</b>	<b>Overall Program:</b> <b>Path Forward:</b> <b>Workaround:</b>
<b>SWG Feedback</b>	<b>Scope adjustment:</b> <b>Date adjustment:</b>

# Milestone Review and Assessment of Impact: Industry

- Where there is an impact to industry programs, participants will be requested to submit the information provided within the table below
- This process will be followed with agreement via the PCF in advance, as it may not apply in all circumstances.

<b>Milestone #ID</b>	
<b>Participant Details</b>	
<b>Organisation / Business</b>	
<b>Contact person</b>	
<b>Potential impact to Participant</b>	
<b>Schedule / Timeline</b>	
<b>Processes</b>	
<b>Resources</b>	
<b>Other</b>	

# Program update

Graeme Windley

# Program Update

- Overall
  - Milestone change Impact Assessments for L2 Metering to be discussed
  - Critical dependency removed from legend; dependencies added to updated PowerPoint
- Procedures Workstream
  - Overall Green, several individual documents delays, however tracking ahead of schedule to complete all documentation by September.
- Readiness Workstream
  - First Readiness Working Group set for Thursday 27 June
  - AEMO to take an inclusive approach to defining industry cutover activities



# Program Update

- Metering Workstream
  - AEMO Internal – Proof of Concept accepted for the new Metering Data Management and Profiling (MDM & PAE) solution, build begun.
  - Procedures Metering Package 2 has been delayed due to definition of GS and UFE discussions in the market.
  - MDM File Format and Load Process (Metering Data) consultation submissions just closed. MSATS Tech Spec to be published 28 June.
- Dispatch Workstream
  - AEMO Internal - Internal work on track, including industry web Bidding interface. System Testing has begun for developed work packages.
  - Technical details for Negative Residue Management due for draft distribution 28 June – final draft Dispatch technical distribution.
- Settlements Workstream
  - AEMO Internal work on track, System Testing begun for developed work packages.
  - All HL Impact Assessments to industry; Draft Tech Spec's by 31 Oct 2019

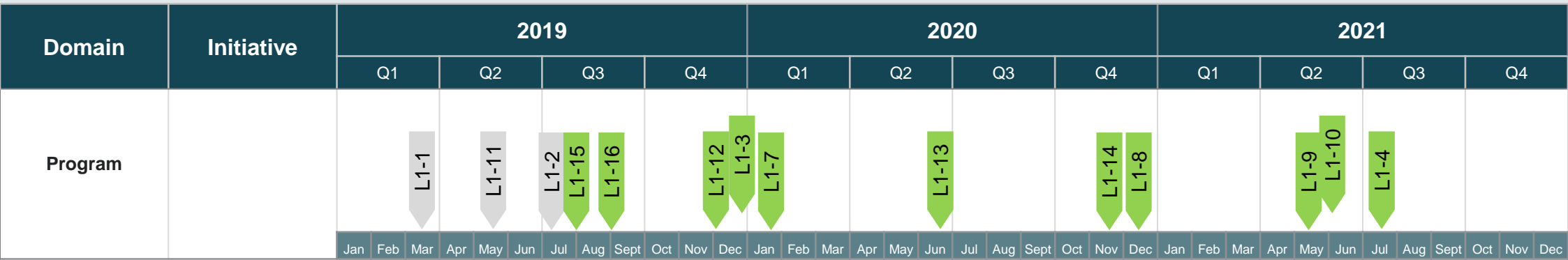
# Milestone Change Impact Assessment

#ID	L2-M3 Final Technical Specifications for Packages 2 published by AEMO		
Description	Technical Specification for changes to Transition, Meter Data Load – MDFF, <del>B2M via API</del> as a result of 5MS and GS available to participants.		
Current Date	31 Jul 2019	Proposed Date	30-Sep-2019
Change Requested	<b>Scope Adjustment:</b> The removal of B2M API (to Package 3), <b>Time Adjustment:</b> Two month delay due to finalising GS and UFE procedures		
Impacted	<b>Directly:</b> MDPs; AEMO. <b>Indirectly:</b> Retailers; Generators.		
AEMO Assessment	<b>Scope change:</b> The B2M via API adjustment does not impact the integration solution, due to the participant option of using FTP at go live and beyond. This aligns it with items closer in scope. <b>Schedule change:</b> The dependency and tight timeframe between the Procedures Metering Package 2 consultation and tech spec delivery creates the scenario for this impact. <b>AEMO recommendation:</b> Agree the change in scope and delay the milestone to proposed date. Assess further after MP2 feedback.		
Risk Assessment	<b>Overall Program:</b> Low – no impacted AEMO future milestone dependencies due to the change <b>Path Forward:</b> A risk of further delay remains, due to tight coupling between the procedures finalisation timeframe and tech spec delivery timeframe. Numerous comments were received from Procedures Metering consultation package 2, however initial view is the comments don't provide significant variation in position. <b>Workaround:</b> Option to separate “MDM File Load and Processing” document and Transition		
SWG Feedback	<b>Scope adjustment:</b> <u>Ausnet Services</u> : no impact. <b>Date adjustment:</b> <u>Energy Queensland</u> : minimal impact. <u>Origin</u> : concerns over delays to the overall program, although the MDFF flow is not impacting them specifically delays to participant programs will have an impact to them due to the tight overall timeframes.		

# Milestone Change Impact Assessment

<b>#ID</b>	L2-M4 Final Technical Specifications for Package 3 published by AEMO		
<b>Description</b>	Technical Specification for <b>introduction of B2M via API as well as</b> changes to the MSATS Browser (LVI) and MSATS Report changes as a result of 5MS and GS available to participants.		
<b>Current Date</b>	31 Aug 2019	<b>Proposed Date</b>	30 Sep 2019
<b>Change Requested</b>	<b>Scope Adjustment:</b> B2M via API now part of Package 3 (not Package 2). <b>Time Adjustment:</b> One month delay due to finalising GS and UFE procedures		
<b>Impacted</b>	<b>Directly:</b> MDPs; Retailers; Generators; Distributors; AEMO <b>Indirectly:</b>		
<b>AEMO Assessment</b>	<b>Scope change:</b> The B2M via API adjustment does not impact the integration solution, due to the participant option of using FTP at go live and beyond. This aligns it with items closer in scope. <b>Schedule change:</b> Delay due to impact of GS on RM Reports and Browser screens. <b>AEMO recommendation:</b> Agree the change in scope and delay the milestone to proposed date. Assess further after MP2 feedback.		
<b>Risk Assessment</b>	<b>Overall Program:</b> Low – no impacted AEMO future milestone dependencies due to the change <b>Path Forward:</b> A risk of further delay remains, due to tight coupling between the procedures finalisation timeframe and tech spec delivery timeframe. Numerous comments were received from Procedures Metering consultation package 2, however initial view is the comments don't provide significant variation in position. <b>Workaround:</b> N/A		
<b>SWG Feedback</b>	<b>Scope adjustment:</b> <u>Ausnet Services</u> : no impact. <b>Date adjustment:</b> <u>Energy Queensland</u> : minimal impact. <u>Origin</u> : concerns over delays to the overall program, although the MDFFF flow is not impacting them specifically delays to participant programs will have an impact to them due to the tight overall timeframes.		

# Level 1 Milestones - Status Report

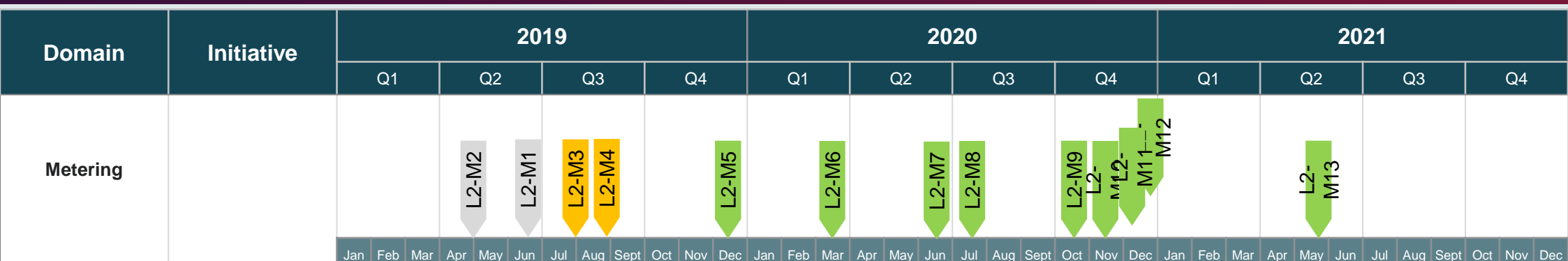


### Key Milestones (Program)

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	08-Aug-2019	On target for early completion
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]	
L1-16	5MS Cost Recovery approach communicated	30-Sep-2020	30-Sep-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

# Level 2 Milestones – Metering

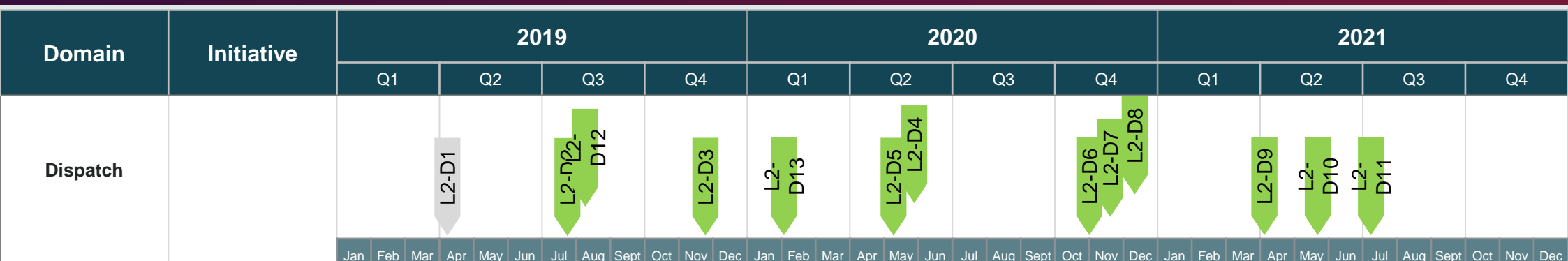






## Key Milestones (Program)

ID	Milestone	Target Date	Expected Date	Status
L2-M1	AEMO internal Metering solution – Solution Design complete (internal)	31-May-2019	17-Jun-2019	Complete
L2-M2	Final Technical Specifications for Package 1 published by AEMO	30-Jun-2019	30-Apr-2019	Complete. AEMO added as a recipient of MDFF meter data
L2-M3	Final Technical Specifications for Packages 2 published by AEMO	31-Jul-2019	<del>31-Jul-2019</del> 30-Sep-2019	Consultation on date adjustment with the PCF
L2-M4	Final Technical Specifications for Package 3 published by AEMO	31-Aug-2019	<del>31-Aug-2019</del> 30-Sep-2019	Consultation on date adjustment with the PCF
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]	
L2-M11	Market Trial preparation completed by participants	30-Nov-2020	[30-Nov-2020]	
L2-M12	Market Trial preparation completed by AEMO	30-Nov-2020	[30-Nov-2020]	

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

# Level 2 Milestones - Dispatch

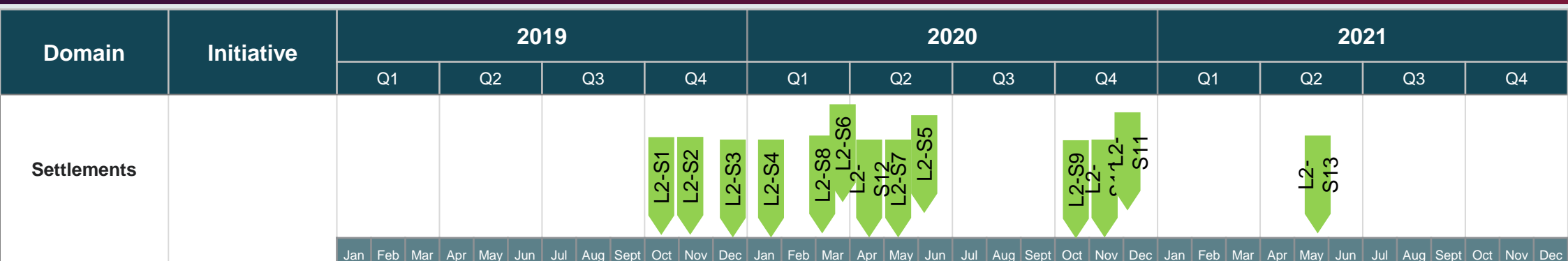


-  Milestone complete
-  Milestone on track
-  Milestone at risk
-  Milestone not achieved

## 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 4 published by AEMO	31-Jul-2019	31-Jul-2019	New Milestone (as per 7 June), incl pricing and miscellaneous details.
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 5 published by AEMO	31-Jan-2020	31-Jan-2020	New Milestone (as per 7 June), incl full data model details
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]	

# Level 2 Milestones – Settlements



## 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]	

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

# Systems Workstream update

Hamish McNeish



# System Workstream - Metering

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>METERING</b>											
PACKAGE 1 - Metering Data & Metrology											
<b>MDFF</b> • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	Dec-2019	Sep-20	Nov-20	
PACKAGE 2 - MSATS & SLPs											
<b>Transition</b> • MSATS Release Schedule & Technical Specification	Aug-18	Sep-18	Aug-18	Nov-18	31-May-19	Jul-19 (At Risk)	-				
<b>Meter Data - MDFF and MDMF</b> • MDM File Format and Load Process (Technical Specification) • MSATS Release Schedule & Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	Jul-19 (At Risk)	-			Nov-20	
PACKAGE 3 - Miscellaneous											
<b>B2M via API</b> • MSATS Release Schedule & Technical Specification	Oct-18	-	Apr-19	09-May-19	31-May-19	3-Sep-19	Aug-19 TBC	30-Dec-19 TBC	Feb-20 TBC	Mar-20 TBC	
<b>MSATS Browser (LVI) changes</b> • MSATS Release Schedule & Technical Specification			May-19			Aug-19	TBC	Jul-20 TBC			
<b>MSATS Report changes</b> • MSATS Procedures MDM Procedure • MDM File Format and Load Process (Technical Specification) • MSATS Release Schedule & Technical Specification General Process & Document Clean-up	Oct-18	-	Apr-19	Apr-19	28-Jun-19 TBC	Aug-19 (At Risk)	TBC	Jul-20 TBC	Sep-20	Nov-20	

Agreed at SWG to remain Apr-19

General change Added calendar days where known

Potential impact from Metering Procedures Package 2

Item shifted into Systems Metering Package 3

Added missing date

Added TBC to expected date

# System Workstream - Metering

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	SMS Staging	Preprod	Production
<b>METERING</b>										
PACKAGE 1 - Metering Data & Metrology										
<b>MDFF</b> • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	1-Dec-2019	Sep-20	Nov-20
PACKAGE 2 - MSATS & SLPs										
<b>Transition</b> • MSATS Release Schedule & Technical Specification	Aug-18	Sep-18	Aug-18	Nov-18	31-May-19	Jul-19 (At Risk)	-	-	-	-
<b>Meter Data - MDFF and MDMF</b> • MDM File Format and Load Process (Technical Specificaiton) • MSATS Release Schedule & Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	Jul-19 (At Risk)	-	1-Dec-2019	Sep-20	Nov-20
PACKAGE 3 - Miscellaneous										
<b>B2M via API</b> • MSATS Release Schedule & Technical Specification	Oct-18	-	Apr-19	09-May-19	31-May-19	30-Sep-19	Aug-19 TBC	30-Dec-19 TBC	Feb-20 TBC	Mar-20 TBC
<b>MSATS Browser (LVI) changes</b> • MSATS Release Schedule & Technical Specification	Aug-18	-	May-19	09-May-19	28-Jun-19 TBC	Aug-19	TBC	Jul-20 TBC	Sep-20	Nov-20
<b>MSATS Report changes</b> • MSATS Procedures MDM Procedure • MDM File Format and Load Process (Technical Specificaiton) • MSATS Release Schedule & Technical Specification General Process & Document Clean-up	Oct-18	-	Apr-19	Apr-19	28-Jun-19 TBC	Aug-19 (At Risk)	TBC	Jul-20 TBC	Sep-20	Nov-20

# System Workstream - Dispatch

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>										
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	02-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	02-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P5	Nov-18	Oct-18	Nov-18	TBC	TBC	TBC	-	TBC	Nov-20	May-21
ST and PD PASA	Aug-18	-	Oct-18	Nov-18	Oct-18	02-Apr-19	Oct-19	29-Nov-19	Nov-20	Mar-21
<b>PACKAGE 4 - Pricing and Miscellaneous</b>										
Trading Price / Price Revision	Aug-18	-	Feb-19	Nov-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Administered Pricing and CPT	Aug-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	<b>Changed from TBC</b>  <b>Includes Data Model scripts</b>	Nov-20	May-21
Suspension Pricing	Sep-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-		Nov-20	May-21
Negative Residue Management	Sep-18	-	Feb-19	Dec-18	Jun-19	31-Jul-19	-		Nov-20	May-21
RERT	Oct-18	TBC	TBC		TBC	TBC	TBC		Nov-20	May-21
<b>PACKAGE 5 - Full Data Model</b>										
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	31-Jan-20	Oct-20	29-Nov-19	Nov-20	May-21

# System Workstream - Dispatch

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>										
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	02-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	02-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P5	Nov-18	Oct-18	Nov-18	TBC	TBC	TBC	-	TBC	Nov-20	May-21
ST and PD PASA	Aug-18	-	Oct-18	Nov-18	Oct-18	02-Apr-19	Oct-19	29-Nov-19	Nov-20	Mar-21
<b>PACKAGE 4 - Pricing and Miscellaneous</b>										
Trading Price / Price Revision	Aug-18	-	Feb-19	Nov-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Administered Pricing and CPT	Aug-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Suspension Pricing	Sep-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Negative Residue Management	Sep-18	-	Feb-19	Dec-18	Jun-19	31-Jul-19	-	15-May-20	Nov-20	May-21
RERT	Oct-18	TBC	TBC		TBC	TBC	TBC	-	Nov-20	May-21
<b>PACKAGE 5 - Full Data Model</b>										
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	31-Jan-20	Oct-20	29-Nov-19	Nov-20	May-21

# System Workstream – Settlement and Operations

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>SETTLEMENTS</b>										
<b>PACKAGE 1 - Reallocations</b>										
Reallocation	Dec-18	Nov-18	Dec-18	Mar-19	Jul-19	Oct-19	Nov-19	Nov-19	Mar-20	Apr-20
<b>PACKAGE 2 - Settlements and Billing</b>										
Settlements	Oct-18	Nov-18	Dec-18	Mar-19	Aug-19	Dec-19	-	Mar-20	Nov-20	May-21
Billing	Oct-18	Nov-18	Dec-18	Mar-19	Aug-19	Dec-19	-	Mar-20	Nov-20	May-21
<b>PACKAGE 3 - Prudentials and Estimation</b>										
Prudentials	Sep-18	Nov-18	Dec-18	Mar-19	Oct-19	Jan-20	Nov-19	May-20	Nov-20	May-21
Estimation	Oct-18	Nov-18	Dec-18	Mar-19	Oct-19	Jan-20	-	May-20	Nov-20	May-21
Full Data Model	Refer DISPATCH									

# Technical Specifications

## Retail/Metering

Technical Document	Description	DRAFT	FINAL
<b>Meter Data File Format (MDFF)</b> - B2B and B2M Meter Data Format	Changes to support 5-minute meter data	<b>25 Jan 19</b>	<b>30 Apr 19</b>
<b>MDM File Format and Load Process</b> - Processing/loading meter data into AEMOs MDM	Changes to support loading and processing MDFF	<b>20 May 19</b>	<b>31 Jul 19</b>
<b>MSATS 5MS Technical Specification</b> - B2M via API	Changes to introduce APIs for existing B2M messages	<b>31 May 19</b>	<b>30 Sep 19</b>
<b>MSATS 5MS Technical Specification</b>	Changes in MSATS MDM functionality for 5-minute	<b>28 Jun 19</b>	<b>31 Jul 19</b>

# Technical Specifications (2)

## Dispatch and Operations

Technical Document	Description	DRAFT	FINAL
<b>EMMS 5MS Technical Specification</b> <ul style="list-style-type: none"><li>- Bidding Format and submitting</li><li>- Dispatch/Pre-dispatch/PASA</li></ul>	Changes related to bidding shifting to 5-minute intervals	<b>28 Dec 18</b>	<b>2 Apr 19</b>
<b>EMMS 5MS Technical Specification</b> <ul style="list-style-type: none"><li>- Bidding Web UI/APIs/Upload</li><li>- Mandatory Restrictions</li><li>- Pricing and Miscellaneous</li></ul>	Changes to support Web Bidding interface, and changes related to pricing shift to 5-minutes	<b>28 Jun 19</b>	<b>31 Jul 19</b>

# Technical Specifications (3)

## Settlements

<b>Technical Content</b>	<b>Description</b>	<b>DRAFT</b>	<b>FINAL</b>
<b>EMMS 5MS Technical Specification</b> - Reallocations	Changes to support reallocations at 5-minute resolution	<b>30 Aug 19</b>	<b>31 Oct 19</b>
<b>EMMS 5MS Technical Specification</b> - Settlements and Billing	Changes to support Settlements at 5-minutes and Global Settlement	<b>30 Aug 19</b>	<b>27 Dec 19</b>
<b>EMMS 5MS Technical Specification</b> - Prudentials and Estimation	Changes required due to changes in Settlement and Billing	<b>30 Oct 19</b>	<b>31 Jan 20</b>



# Vendor/Participant Considerations

## 1. Review the 5MS systems High-Level Impact Assessment

- Determine areas of impact to your systems
- Use this information as an input to requirements and design artefacts

## 2. Review and provide feedback on DRAFT Technical Specifications

- Technical Specifications are released by email on the AEMO artefacts
- Use this information as an input to design documents
- Feedback is 2 weeks from

## 3. Design and Develop based on FINAL Technical Specifications

- Plan based on AEMOs dates for FINAL technical specifications
- Use this information as an input to design documents
- Carryout internal tests against this technical specification

## 4. Plan Testing using the 5MS Staging Environment

- Plan testing activities based on AEMO dates of releases into 5MS Staging
- Carry out integration testing against 5MS Staging

# Change request update

Chris Muffett

# Change Requests under consideration

CR#	Title	Objective	Status
CR0 4	Pre-Dispatch	Enhancements to 5-minute Pre-dispatch, to provide improved market information in response to 5MS and the changing generation mix	Proposed approach is to not extend beyond 1 hour in 5MS, but to include FSIP in formulation. To be discussed at Dispatch Focus Group
CR0 7	Reconciliation reporting	Opportunities to provide additional metering/settlement data to improve reconciliation	Closed – replaced by CR18-21
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	Proposed approach is to retain existing 30-minute offer and schedule process
CR1 6	Intervention Compensation Settlement	Implement changes to accommodate rule change for Intervention Compensation	Currently being scoped, with minimal impact expected

# Change Requests under consideration - new

CR#	Title	Objective	Status
CR18	Additional reconciliation data in RM reports	Reconciliation workshop #1: Consider provision of additional data to improve participant reconciliation of metering and settlement data	Currently being scoped, prior to assessing impact
CR19	Continuation of 30-minute RM and settlement reports	Reconciliation workshop #2: Consider continued delivery of reports in simulated 30-minute format to reduce transition impact to participant reconciliation	Currently being scoped, prior to assessing impact
CR20	Provision of raw profiled data	Reconciliation workshop #3: Consider provision of raw profiled data to participants to improve reconciliation processes	Currently being scoped, prior to assessing impact
CR21	Delivery of retail standing data through data interchange	Reconciliation workshop #4: Consider provision of retail standing data via DI to improve efficiency/quality of synchronising data	Currently being scoped, prior to assessing impact

# Readiness workstream update

Greg Minney

# Readiness Workstream Update

- Initial RWG conducted 27<sup>th</sup> June
- 30+ participants represented
- Agenda Topics:
  - Confirm Scope and Objectives of Workstream
  - RWG Operation
  - Market Readiness Strategy Deliverable
  - Interim Readiness Reporting

# 5MS/GS Market Readiness Workstream Scope

## Readiness Reporting and Management

- Establishment of objective readiness criteria, with regular reporting by impacted participants
- Analysis and assessment of reported results
- Proactive responses to identified issues
- Readiness issue and risk assessments, including recommended contingency options
- Escalation of issues as required

## Industry Testing and Market Trials

- Planning, execution and management of Market / Industry test activities
- Environment support and availability
- Capability release and timing

## Transition and Cutover

- Establishment of Market Transition Strategy which details the steps, activities and responsibilities in moving from current state to future state
- Planning and monitoring of participant and AEMO transition activities (link to readiness criteria)
- Systems cutover planning and execution - including industry co-ordination

## Metering Accreditation Updates

- Identification of timing and scope of accreditation requirements
- Accreditation Update approach
- Monitor accreditation progress against agreed timeframes

# Defining market readiness for 5MS and GS

## *DRAFT definition:*

- Market readiness represents the successful implementation by AEMO and NEM participants of all necessary activities required for a seamless change to:
  - 5MS on 1 July 2021
  - UFE reporting from 1 July 2021
  - GS on 6 February 2022
- Market readiness applies to the 5MS/GS readiness of the NEM rather than to each individual participant's own readiness.



# Draft market readiness principles

- Joint commitment to readiness for 'go-live'
- Collaborative approach to market readiness
- Each party is responsible for their own readiness
- Communicate readiness issues and risks as early as possible, in writing
- True and honest readiness reporting
- Appropriate handling of confidential and commercially sensitive information by AEMO
- AEMO explains the basis for readiness decisions to NEM participants

# Upcoming RWG Meetings – Content and Discussion Items

- Seeking feedback for proposed content/topic areas

Meeting Date	Meeting	Proposed Content	Deliverables for Consultation	Deliverables Finalised	Deliverables Date
26 July	RWG #2	<ul style="list-style-type: none"> <li>• Market Readiness Strategy Input Deliverables / Timing Feedback</li> <li>• Transition Principles and Approach Input</li> <li>• Testing Phases and Approach</li> <li>• Interim Readiness Reporting Approach</li> </ul>	Market Readiness Strategy		30/08/2019
27 Aug	RWG #3	<ul style="list-style-type: none"> <li>• Feedback on Transition Principles / Timing</li> <li>• Market Trial Strategy Input</li> <li>• Interim Readiness Reporting approach / criteria / timing</li> </ul>	Industry Test Strategy  Transition and Go-Live Strategy		2/9/2019  27/09/2019
24 Sept	RWG #4	<ul style="list-style-type: none"> <li>• Principles for Industry Readiness Reporting</li> <li>• Initial Issues and Risks Workshop</li> </ul>		Industry Test Strategy	30/10/2019

# Procedures workstream update

Emily Brodie

# Procedures workstream status (Level 3 milestones)

5 MINUTE SETTLEMENT PROCEDURES TRACKING	Pre-consultation		Consultation			CONTENT
			TIMING			
	HLIA	PWG Engagement	Consultation paper	Draft documents	Final documents	
<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	Aug-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

- 20 submissions to first round consultation received on first round consultation from broad range of stakeholders
- Draft report and procedures scheduled for publication 5 August 2019
- Final report and procedures scheduled for publication 30 September 2019
- <http://aemo.com.au/Stakeholder-Consultation/Consultations/Five-Minute-Settlement---Metering-Procedure-Changes---Package-2?Convenor=AEMO%20NEM>

## 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>

# Consultations – settlements & prudentials

<http://www.aemo.com.au/Stakeholder-Consultation>

- Dispatch Procedures (non-rules consultation)
  - minor amendments proposed to implement 5MS
  - general improvements to provide document clarity
  - Submissions closed Friday 28 June
  - Final documents to be published by the end of July
- Credit Limit Procedures
  - updates to support 5MS implementation
  - change to the season definitions
  - Submissions due Friday 12 July
- Settlement Residue Auctions: Auction Participation Agreement
  - minor update to clause 16.5 of the procedure
  - Submissions close Tuesday 16 July

# Procedures workstream meetings

- Next PWG scheduled for Friday 12<sup>th</sup> July:
  - Update on power system operations
  - Debrief on metering workshop
  - Metering package #2 and #3
- Focus groups:
  - **Past:**
    - Metering focus group, Friday 14 June, Melbourne
  - **Future:**
    - Dispatch focus group, Tuesday 16 July, AEMO offices and webinar
    - Metering focus group, Thursday 18 July, Sydney

# Industry Risks & Issues - Review

Graeme Windley



# Summary

- 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>

# Risks & Issue: Review and Update (1)

ID	TITLE	LIKELIHOOD	CONSEQUENCE	RISK RATING	CURRENT ACTIONS / APPROACH	SUGGESTED CHANGES
R01	Small Participant Engagement	Medium	Medium	Medium	<ul style="list-style-type: none"> <li>AEMO executing a plan for small participant engagement</li> <li>PCF members to make recommendations to AEMO to allow greater participation from resource constrained stakeholders</li> <li>AEMO to host seminars for small generators, the first being in Feb-2019.</li> </ul>	
R02	Risk that there is one or more participants that aren't 'ready' at go-live	High	High	High	<ul style="list-style-type: none"> <li>AEMO will facilitate the development of a testing plan through the Readiness workstream.</li> <li>AEMO will engage through the PCF and 1 on 1 meetings to ensure that participants have adequate transition plans in place.</li> <li>AEMO will provide reports of test outcomes and progress against planned milestones.</li> <li>Participants to provide regular and accurate readiness reports via the process being facilitated by AEMO.</li> <li>AEMO will develop a Market Readiness strategy to provide clarity and certainty that will assist participant planning.</li> <li>AEMO will prepare an Industry Readiness Reporting Plan, to provide a clear picture on participant readiness at key milestones throughout the program (which can feed into management actions that can be addressed through the PCF and EF).</li> </ul>	
R03	Resource constraints over summer periods	High	Medium	Medium	<ul style="list-style-type: none"> <li>AEMO will work with participants through the forums and working groups to ensure that the schedule is reasonable and understood with adequate advanced notice for consultation and testing requirements</li> <li>Participants to provide feedback on AEMO's program timeline and readiness proposals</li> </ul>	

# Risks & Issue: Review and Update (2)

ID	TITLE	LIKELIHOOD	CONSEQUENCE	RISK RATING	CURRENT ACTIONS / APPROACH	SUGGESTED CHANGES
R04	Big bang approach	Low	Medium	Low	<ul style="list-style-type: none"> <li>Staged approach to procedure implementation in preparation for Rule go-live. AEMO to begin distributing information on the readiness workstream from Mar-May 2019, with a more detailed view of industry testing and the cutover for the June 2019 PCF.</li> <li>AEMO system implementation to be completed in advance.</li> <li>Participants will be using the new systems prior to Rule go-live</li> <li>AEMO to consider limitations of current Rule drafting</li> <li>Procedure go-live action plans will be discussed and developed through the PWG and released as part of the consultation process</li> </ul>	
R05	Unintended consequences of Rule as drafted	Medium	Low	Low	<ul style="list-style-type: none"> <li>Engage with the AEMC to rectify as inconsistencies identified</li> <li>AEMO to engage with participants to identify issues</li> </ul>	
R06	Interaction with other industry changes that have already been adopted through rule changes	High	High	High	<ul style="list-style-type: none"> <li>Engage broadly internally and externally to understand other industry priorities.</li> <li>Plan engagement with consideration of these priorities</li> <li>AEMO to report at EF on any timeline slippage</li> <li>AEMO to internally align where other program procedure and system impacts overlap</li> <li>1 on 1 meetings to discuss this risk</li> <li>Consider how other forums (e.g. NEMWCF) can be utilised to address</li> </ul>	

# Risks & Issue: Review and Update

## (3)

ID	TITLE	LIKELIHOOD	CONSEQUENCE	RISK RATING	CURRENT ACTIONS / APPROACH	SUGGESTED CHANGES
R07	Potential implications for financial markets	Medium	High	High	<ul style="list-style-type: none"> <li>AEMO to engage with AFMA, ASX and other trading platforms, and update PCF on interactions as required.</li> </ul>	
R08	Procedure changes arising from IT activities	Medium	Medium	Medium	<ul style="list-style-type: none"> <li>AEMO to consider including option of further round of procedure change prior to 5MS go live</li> </ul>	
R09	Impact to 5MS from other rule changes that are being considered	Medium	High	High	<ul style="list-style-type: none"> <li>AEMO and industry to participate in rule change processes and to advise AEMC of potential 5MS implications</li> <li>Escalate to EF should road blocks or slippage occur.</li> <li>Participants to engage through the AEC and the ENA.</li> </ul>	
R10	Vendor contract negotiation timelines	Medium	High	High	<ul style="list-style-type: none"> <li>Build negotiation time into program timelines</li> <li>AEMO to engage with participants to identify issues</li> <li>AEMO to hold a vendor briefing session end of November</li> <li>AEMO to maintain a collated list of vendors, with participants asked to supply vendor details</li> <li>Participants to provide updates to the PCF regarding vendor performance</li> </ul>	
R11	The AEMO internal project is not ready for 5MS Go Live	Low	High	Medium	<ul style="list-style-type: none"> <li>Ensure transparency around AEMO's internal program deliverables, presenting to the PCF on an agreed basis</li> <li>Agree Level 1 and Level 2 Readiness milestones for the PCF.</li> </ul>	
R12	Unexpected impact to B2B Procedures	Low	Medium	Low	<ul style="list-style-type: none"> <li>IEC and B2BWG to review all B2B procedures following the completion of the of the 5MS Procedures work (review expected in early 2020)</li> </ul>	

# Risks & Issue: Review and Update (4)

ID	TITLE	WORK STREAM	LIKELIHOOD	CONSEQUENCE	RISK RATING	CURRENT ACTIONS / APPROACH	SUGGESTED CHANGES
105	Visibility of 5MS implementation costs	Program				<ul style="list-style-type: none"> <li>AEMO to discuss internally and report back</li> </ul>	
106	Support for metering transition activities throughout 2022	Program				<ul style="list-style-type: none"> <li>AEMO to discuss internally with Steering Committee on program approach.</li> </ul>	
107	Support for Global Settlement go live	Program				<ul style="list-style-type: none"> <li>AEMO to discuss internally with Steering Committee on program approach.</li> </ul>	

# Industry Readiness Reporting

Greg Minney

# Context and objective

- PCF requested AEMO to consider Interim Readiness Reporting to:
  - baseline the general level of participant preparedness
  - occur from now until Feb 2020
- Objectives:
  - to provide a consolidated view of current industry preparedness
  - to identify emerging risks across participant categories
- Full readiness reporting is planned to commence from Feb 2020
- Approach was presented to RWG on 27<sup>th</sup> June

# Proposed approach to interim readiness reporting (draft attached)

- High level questions to be answered in Y/N/ N/A format with inclusion of estimated timeframe to address in the case of “N” response
- Organisations to submit a separate response for each participant type they represent in the market
- AEMO to consolidate, *anonymise* responses and present analysis at a future RWG/PCF:
  - Current level of preparedness
  - Key risks and concerns
  - Market participants can compare their level of progress to others in same segment



# Proposed approach to interim readiness reporting (draft attached)

- Interim reporting repeated every 2 months until full readiness reporting implemented
- Questions to be refined progressively based on consolidated responses from participants
- Reporting request will be sent to the RWG representative

# Interim Readiness Reporting Questionnaire – Draft

## Participant Name

**Participant type:** Generator / Retailer/ LNSP/ MDP/ MC

Area	Readiness Criteria	Response	Planned timeframe	Reasoning
<b>Governance</b>	Participant understanding of scope and timing of 5MS and GS Rule changes Rule Impact Assessment completed Board/ Executive Management Awareness Project Funding Determined and Committed	Y/ N/ N/a	Date or TBC	
<b>Project Establishment</b>	Project Delivery Structure Established Project Management and Executive Sponsorship Established Project Delivery Timeline Established Progress Tracking in place Commercial Activities defined and included in project			
<b>IT Delivery</b>	IT Delivery Approach Established Scope of Required IT Change established IT Delivery Project Mobilised Vendor Upgrade Releases Identified and Planned			
<b>Business Process</b>	Business Process Impact Assessed Impact of Market Procedure changes assessed Impacted non-market business changes assessed			
<b>Market Readiness</b>	Intention to Participate in Market trials Market trial period incorporated in project delivery timelines			
<b>Overall Summary</b>	Based on your current status and plans, what level of confidence do you have that your organisation will be ready for 5MS and GS market start	H/M/L		

**Key Delivery Risks** *summary of key participant delivery risks*

# Proposed Timeline for Implementation

Action	Date
Feedback on Questions / Approach from RWG & PCF	11 <sup>th</sup> July
If Feedback Non Controversial – Updated Questionnaire Distributed to RWG Reps	18 <sup>th</sup> July
Responses due	31 <sup>st</sup> July
Review consolidated analysis with RWG (WebEx briefing)	6 <sup>th</sup> August
Review consolidated analysis with PCF	8 <sup>th</sup> August
Present consolidated analysis to EF	15 <sup>th</sup> August

# 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>

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

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

