



5MS & GS Systems Working Group #12 – 15 July

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

Agenda (Melbourne time/AEST)

NO	TIME	AGENDA ITEM	PRESENTER
Preliminary matters			
1	10:00am – 10:05am	Welcome, introduction and apologies - SWG Update and Purpose	Sammy Wainrit
2	10:05am – 10:15am	Minutes and actions from last meeting	Hamish McNeish
Matters for noting			
3	10:15am – 10:30am	Retail Stream update	Hamish McNeish
4	10:30am – 10:40am	Dispatch Stream update	Ian Devaney
5	10:40am – 10:50am	Settlements Stream update	Sammy Wainrit
6	10:50am – 11:00am	Readiness Working Group update	Greg Minney
7	11:00am – 11:05am	Stakeholder Engagement Update	Monica Morona
BREAK 11:05am – 11:20am			
Matters for discussion			
8	11:20am – 11:40am	Settlements Reallocations – overview	Pedro Riveros Gutierrez
9	11:40am – 12:00pm	Debrief on Metering Focus Group – feedback review	Simon Tu
10	12:00pm – 12:30pm	Technical Specifications: Dispatch and Metering – feedback review	Hamish McNeish, Simon Tu
11	12:30pm – 12:40pm	Dispatch Focus Group – proposed agenda	Ian Devaney
Other business			
12	12:40pm – 12:50pm	Forward meeting plan	Hamish McNeish
13	12:50pm – 1:00pm	General questions	Sammy Wainrit

Systems Working Group Update

Sammy Wainrit

Working Group feedback and review

- 12 months into the Program – a good time to review the Working Group as the Systems Workstream deliverables increase.
- A time to reassess the purpose and functionality of the SWG.
- Incorporate and support the needs of industry as identified through the stakeholder feedback and stakeholder surveys.

Systems Working Group purpose

- Main stakeholder forum for direct industry input into the development of technical specifications for 5MS and GS matters.
- AEMO will:
 - Support discussion at the SWG with timely information
 - Provide adequate time and notice for requests for views/feedback
 - Consider industry views in development of technical documents and requirements
- SWG members will:
 - Be prepared for the SWG as a **discussion** forum
 - Have considered SWG materials and be prepared to table Participant views and issues
 - Prepare and respond to AEMO Technical Specifications associated with 5MS/GS

Actions

Open actions

Item	Topic	Action required	Action Update	Responsible	By
1.6	Participant bandwidth implications	<p>AEMO to provide assessment on bandwidth/networking impacts.</p> <p>Design work is largely complete – next update moved to SWG in August 2019</p>	Pending	AEMO	August 2019
9.7.6	Metering – Meter Data Delivery	<p>AEMO to provide clarification for reporting in the cutover period, where the reports go across the 30min and 5min intervals, will reports display data for both 48 and 288 intervals.</p> <p>This remains in design, next update at SWG in August</p>	Pending	AEMO	August 2019

Closed actions

Item	Topic	Action required	Action Update	Responsible	By
7.6	Request for change password API	AEMO is progressing an API for this, outside of the 5MS project. This will provide an API allowing a URM account to reset its own password.	Closed	AEMO	May 2019
9.7.5	Metering – Meter Data Delivery	Participant feedback required in regard to RM reports identified to be retired; are any of these reports utilised or business critical.	Closed	AEMO	May 2019
10.9.5	General Questions	Present findings of Metering Focus Group discussion at next SWG.	Closed	AEMO	Jul 2019
10.9.4	General Questions	Metering processing error codes will be proceed in August 2019.	Closed	AEMO	Jul 2019
11.4.1	Metering Update	Milestone L2-M3 - MDPs, Retailers and Generators to raise any likely impact on their schedules or associated risks should this document be delayed to 30 Sep 2019	Closed	SWG Participants	26 Jun 2019

Closed actions (continued)

Item	Topic	Action required	Action Update	Responsible	By
11.4.2	Metering Update	Milestone L2-M4 - MDPs, Retailers, Distributors and Generators to raise any likely impact on their schedules or associated risks should this document be delayed to 30 Sep 2019	Closed	SWG Participants	26 Jun 2019
11.9.1	MSATS Standing Data Scenarios	SWG Participants to inform AEMO if a more detailed Scenario discussion is required via 5ms@aemo.com.au	Closed	SWG Participants	3 Jul 19
11.11.1	Technical Document Update	SWG Members to consider including detail on any submissions for Metering Procedures Package 2 on the value of warnings where meter standing data is not yet configured in MSATS	Closed	SWG Participants	24 Jun 19
11.12.1	Forward Meeting Plan	AEMO to include Staging and Metering Focus Group updates at the August SWG #14	Closed	AEMO	15 Jul 19
11.12.2	Forward Meeting Plan	AEMO to add Readiness updates as a standing agenda item at the SWG	Closed	AEMO	15 Jul 19
11.12.3	Forward Meeting Plan	SWG Members to provide feedback on any items where a focus group may be beneficial	Closed	SWG Participants	3 Jul 19

Matters for noting

Retail Stream update

Hamish McNeish

Milestone Changes – agreed at PCF

- The following changes were endorsed at the PCF

#ID	Milestone	Description	New Date	Notes	Who's Impacted by change
L2-M3	Final Technical Specifications for Packages 2 published by AEMO	Technical Specification for changes to Transition, Meter Data Load – MDFF as a result of 5MS and GS available to Participants.	30-Sep-2019	Delay agreed at PCF based on AEMO proposal and industry feedback	Directly: MDPs AEMO Indirectly: Retailers Generators
L2-M4	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for introduction of B2M via API as well as changes to the MSATS Browser (LVI) and MSATS Report changes as a result of 5MS and GS available to Participants	30-Sep-2019	Delay agreed at PCF based on AEMO proposal and industry feedback	MDPs Retailers Generators Distributors AEMO

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
METERING										
PACKAGE 1 - Metering Data & Metrology										
MDFF • 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										
Transition • MSATS Release Schedule & Technical Specification	Aug-18	Sep-18	Aug-18	Nov-18	31-May-19	30-Sep-19	-			
Meter Data - MDFF and MDMF • MDM File Format and Load Process (Technical Specification) • MSATS Release Schedule & Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	30-Sep-19	-	1-Dec-2019	Sep-20	Nov-20
PACKAGE 3 - Miscellaneous										
B2M via API • MSATS Release Schedule & Technical Specification	Oct-18	-	Apr-19	09-May-19	31-May-19	30-Sep-19	30-Aug-19 TBC	30-Dec-19 TBC	Feb-20 TBC	Mar-20 TBC
MSATS Browser (LVI) changes • MSATS Release Schedule & Technical Specification	Aug-18	-	May-19	09-May-19	28-Jun-19	30-Aug-19	TBC	Jul-20 TBC	Sep-20	Nov-20
MSATS Report changes • 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	30-Sep-19	TBC	Jul-20 TBC	Sep-20	Nov-20

Change in dates agreed at PCF

Added day to date

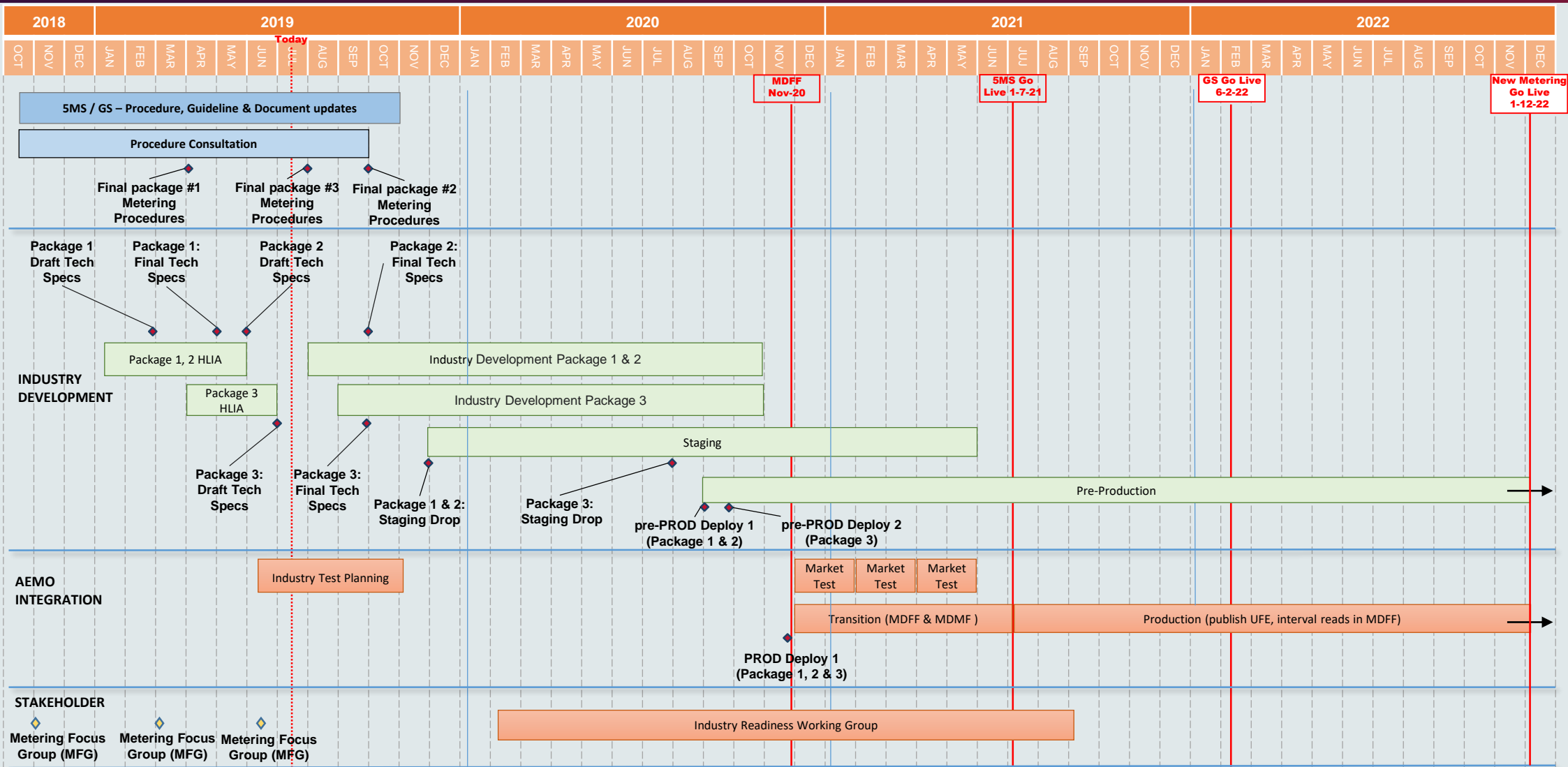
System Workstream – Metering (un-annotated slide)

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
METERING										
PACKAGE 1 - Metering Data & Metrology										
MDFF • 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										
Transition • MSATS Release Schedule & Technical Specification	Aug-18	Sep-18	Aug-18	Nov-18	31-May-19	30-Sep-19	-	-	-	-
Meter Data - MDFF and MDMF • MDM File Format and Load Process (Technical Specification) • MSATS Release Schedule & Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	30-Sep-19	-	1-Dec-2019	Sep-20	Nov-20
PACKAGE 3 - Miscellaneous										
B2M via API • MSATS Release Schedule & Technical Specification	Oct-18	-	Apr-19	09-May-19	31-May-19	30-Sep-19	30-Aug-19 TBC	30-Dec-19 TBC	Feb-20 TBC	Mar-20 TBC
MSATS Browser (LVI) changes • MSATS Release Schedule & Technical Specification	Aug-18	-	May-19	09-May-19	28-Jun-19	30-Aug-19	TBC	Jul-20 TBC	Sep-20	Nov-20
MSATS Report changes • 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	30-Sep-19	TBC	Jul-20 TBC	Sep-20	Nov-20

Level two milestones – Metering (external)

#ID	Level	Workstream	Milestone	Description	Date	Status	Notes
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.	17-Jun-2019	[Firm]	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	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	Metering Package 2 has re-released this. The only change is AEMO added as a recipient of MDFF meter data.
L2-M3	2	Retail	Final Technical Specifications for Packages 2 published by AEMO	Technical Specification for changes to Transition, Meter Data Load – MDFF-as a result of 5MS and GS available to Participants.	30-Sep-2019	[Firm]	Alignment with Metering Package 2
L2-M4	2	Retail	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for introduction of B2M via API as well as changes to the MSATS Browser (LVI) and MSATS Report changes as a result of 5MS and GS available to Participants.	30-Sep-2019	[Firm]	Alignment with Metering Package 2
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-available for Participant testing.	01-Dec-2019	[Firm]	On Track
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	Aligned with the MSP Accreditation Plan document
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]	On Track
L2-M8	2	Retail	Software Drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for B2M via API, MSATS Browser (LVI) and MSATS Report enhancements and available for Participant testing.	31-Jul-2020	[Firm]	On Track
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	On Track
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	Dependent upon readiness strategy
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	Content and timing of Market Trials TBD
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	Content and timing of Market Trials TBD
L2-M13	2	Retail	Market Trials conclude	All relevant Market Participants have completed Market Trials to	31-May-2021	Provisional	Content and timing of Market Trials TBD

5MS Participant timeline – Metering



B2M via API – likely Participant usage

- As part of 5MS, AEMO will enable B2M communication via an API route; this is due in PROD towards the end of Q1, 2020.
- This will not be the sole communication route for 5MS, with the FTP communication route remaining open.
 - AEMO's current target date for removal of FTP is approx. 2025; the transition from FTP will occur post the 5MS & GS Program.
- AEMO will provide resourcing to support testing activities and environments and monitoring/assessment of the additional loads on network connectivity.

QUESTION: To enable AEMO to plan resourcing better, could the SWG provide a view of:

- 1. How many Participants would use the B2M via API facility and**
- 2. From when this is likely to happen?**

System Workstream – Dispatch and Operations

Ian Devaney

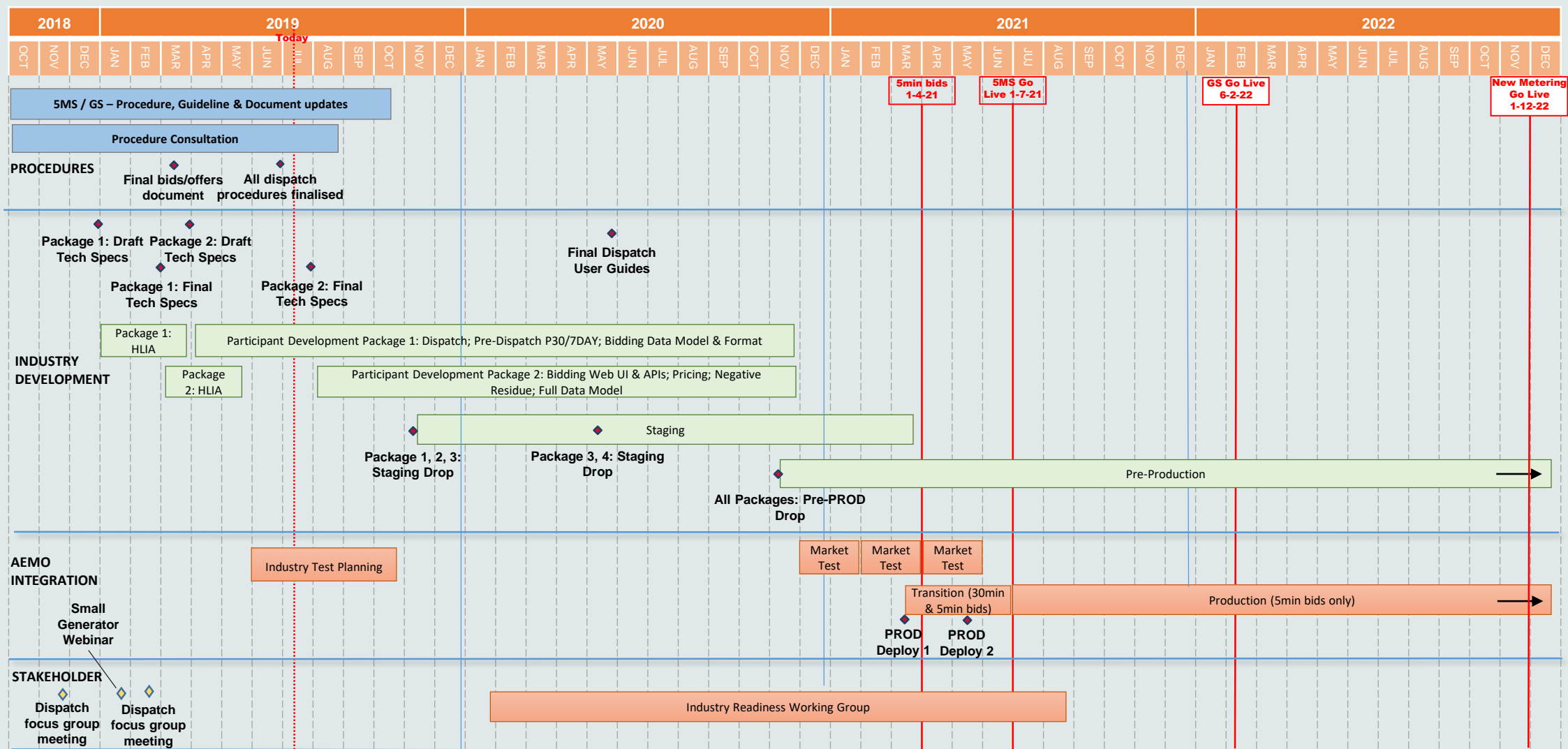
System Workstream - Dispatch

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	SMS Staging	Preprod	Production
DISPATCH AND OPERATIONS										
PACKAGE 1 - Bidding FTP and API										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	02-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	02-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	02-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 2 - Bidding Web UI										
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	31-Jul-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 3 - Dispatch, Pre-dispatch and PASA										
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	31-Oct-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 4 - Pricing and Miscellaneous										
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
PACKAGE 5 - Full Data Model										
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	31-Jan-20	Oct-20	29-Nov-19	Nov-20	May-21

Level two milestones - Dispatch

#ID	Level	Workstream	Milestone	Description	Date	Status	Notes
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]	Final now published. Delay of 2 days due with confirmation of API naming standard taking longer than expected.
L2-D2	2	Dispatch	Final Technical Specifications for Package 4 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]	Package 4, not 2.
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]	On Track
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]	On Track
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	Content and timing of Market Trials TBD
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	Content and timing of Market Trials TBD
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	Content and timing of Market Trials TBD
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	
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-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]	

5MS Participant timeline - Dispatch



Settlements Stream update

Sammy Wainrit

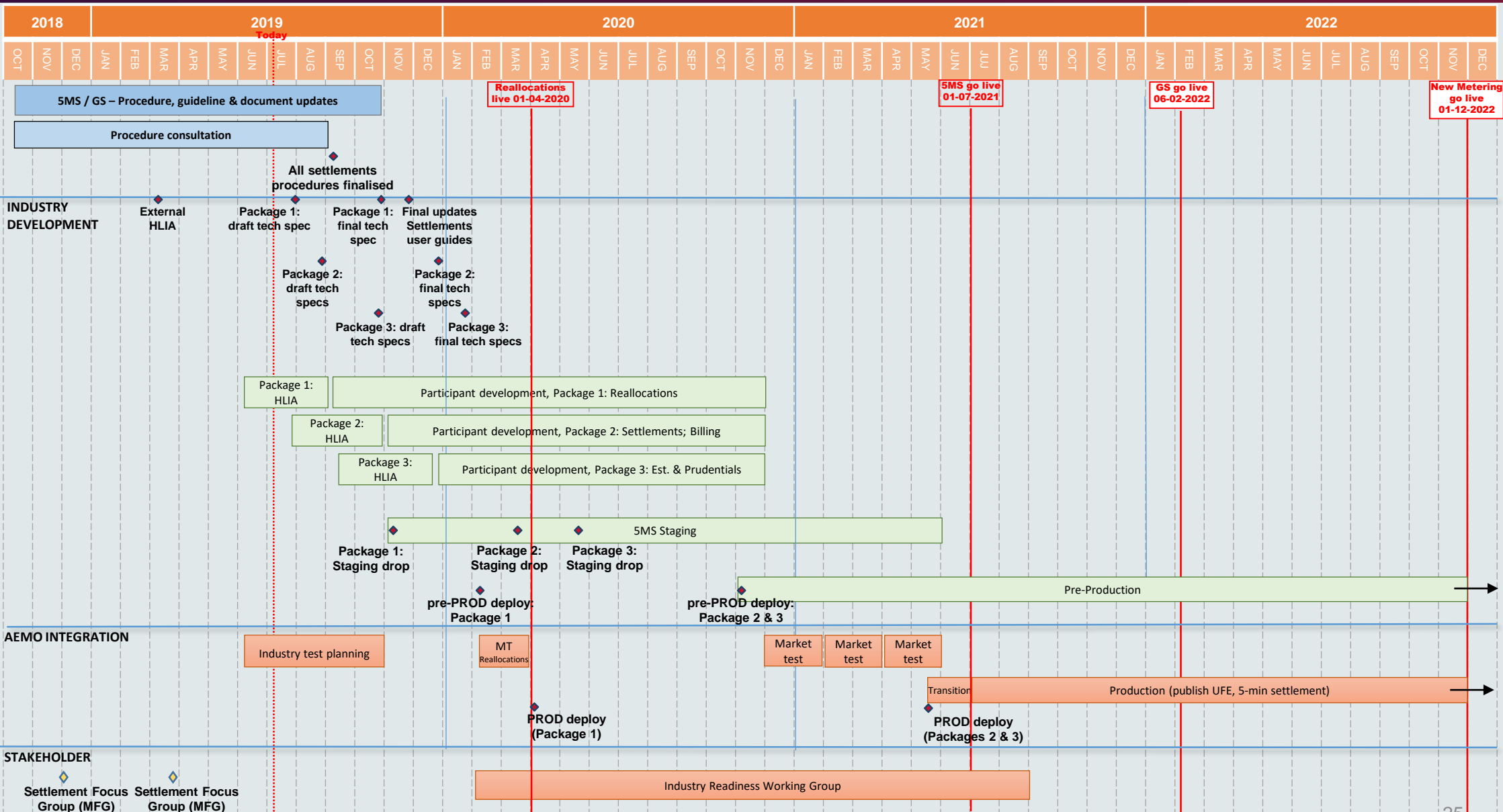
System Workstream – Settlement and Operations

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
SETTLEMENTS										
PACKAGE 1 - Reallocations										
Reallocation	Dec-18	Nov-18	Dec-18	Mar-19	31 Jul 19	31 Oct 19	01 Nov 19	01 Nov 19	Mar-20	Apr-20
PACKAGE 2 - Settlements and Billing										
Settlements	Oct-18	Nov-18	Dec-18	Mar-19	30 Aug 19	20 Dec 19	-	Mar-20	Nov-20	May-21
Billing	Oct-18	Nov-18	Dec-18	Mar-19	30 Aug 19	20 Dec 19	-	Mar-20	Nov-20	May-21
PACKAGE 3 - Prudentials and Estimation										
Prudentials	Sep-18	Nov-18	Dec-18	Mar-19	31 Oct 19	Jan-20	01 Nov 19	May-20	Nov-20	May-21
Estimation	Oct-18	Nov-18	Dec-18	Mar-19	31 Oct 19	Jan-20	-	May-20	Nov-20	May-21
Full Data Model	Refer DISPATCH									

Level two milestones - Settlements

#ID	Level	Workstream	Milestone	Description	Date	Status	Notes
L2-D1	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]	On Track
L2-D2	2	Settlements	Software Drop for Package 1	Software deployed into the 5MS Staging environment for Reallocations.	01-Nov-2019	[Firm]	On Track
L2-D3	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]	On Track
L2-D4	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]	On Track
L2-D5	2	Settlements	<i>Development completed (internal)</i>	All AEMO internal development work has completed for Settlements stream	31-May-2020	[Firm]	On Track
L2-D6	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]	On Track
L2-D7	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]	On Track
L2-D8	2	Settlements	Industry Testing for Reallocations	Required Market Participants have completed industry testing for the upgraded reallocations web portal.	13-Mar-2020	[Provisional]	Content of Market Trials TBD
L2-D9	2	Settlements	<i>UAT completed (internal)</i>	All AEMO internal UAT has completed for Settlements stream	30-Nov-2020	[Firm]	
L2-D10	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	Content and timing of Market Trials TBD
L2-D11	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	Content and timing of Market Trials TBD
L2-D12	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-D13	2	Settlements	Market Trials conclude	All relevant Market Participants have passed the Market Trial for Settlements	31-May-2021	Provisional	Content and timing of Market Trials TBD

5MS Participant timeline – Settlements



Readiness Working Group update

Greg Minney

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.

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

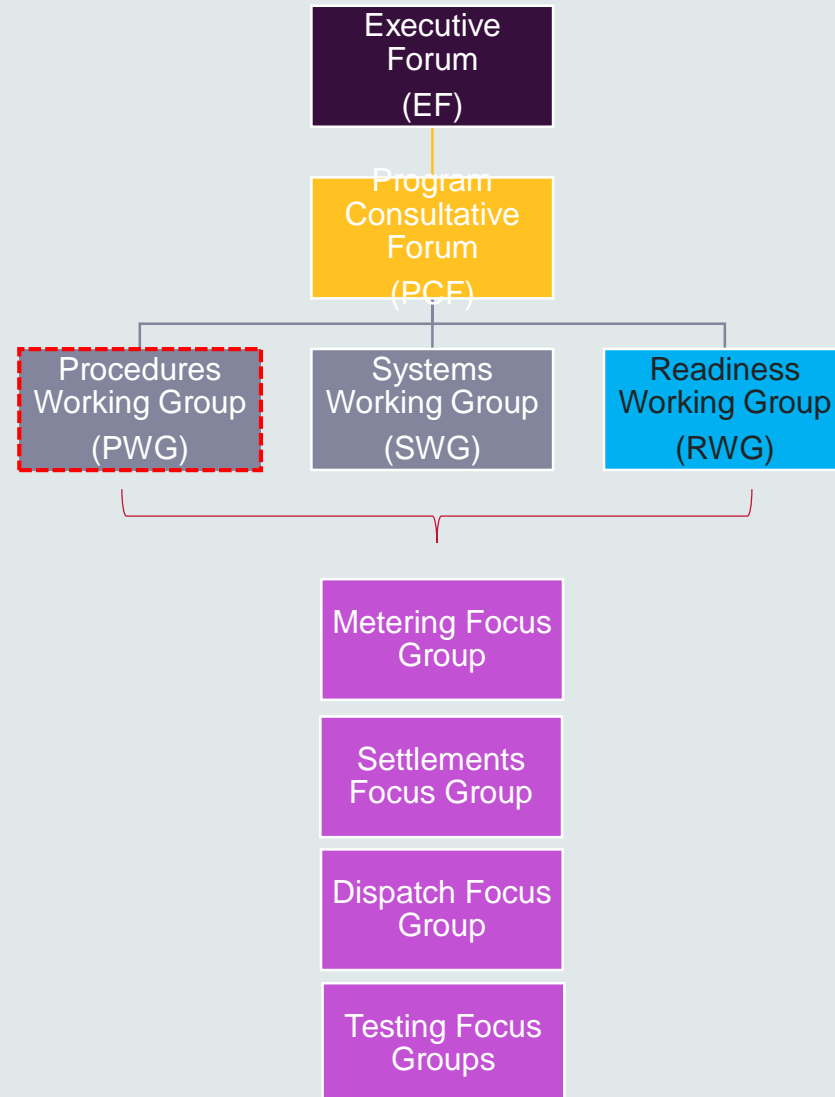
- Identification of timing and scope of accreditation requirements
- Accreditation Update approach
- Monitor accreditation progress against agreed timeframes

What's NOT in scope for the Readiness Workstream

- Resolution of technical solution definitions and procedural issues
 - Focus is on the readiness impact and ensuring the appropriate groups are engaged in developing appropriate resolutions
- Making Participants take part in readiness activities, such as readiness reporting and market trials
- Approving changes to key milestones/deliverables, including date changes
 - The Readiness Workstream/RWG will make recommendations to the EF/PCF, based on Readiness based assessments, for their consideration

RWG engagement

- PCF
 - Monitor & report on milestone progress
 - Escalate issues
 - Provide advice
 - Respond to actions and questions
- PWG & SWG
 - Exchange information
 - Assign and complete actions
 - Manage areas of cross-dependency
- Focus Groups
 - Assign actions & deliverables
 - Receive content, analysis and/or recommendations



Indicative timelines

NOTE: Deliverable dates are currently draft/proposed dates

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

Stakeholder Engagement Update

Monica Morona

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

#ID	
Description	
Current date	Proposed date
Change requested	
Impacted	Directly: Indirectly:
AEMO assessment	Scope change: Schedule change: AEMO recommendation:
Risk assessment	Overall Program: Path forward: Workaround:
SWG feedback	Scope adjustment: Date adjustment:

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.

Milestone #ID	
Participant details	
Organisation / Business	
Contact person	
Potential impact to Participant	
Schedule / timeline	
Processes	
Resources	
Other	

Stakeholder update – Participant survey feedback

- Ongoing SWG surveys after each meeting.
- Areas to improve:
 - Broader focus on bidding and settlement / reconciliation
 - Provide details in advance for the discussion / information expected from Participants
 - Targeted approach to detailed technical discussions – ie more focus groups
 - Focus on impacts to industry, not just AEMO
- Key agenda items:
 - Staging Environment
 - MSATS Standing Data
 - Non-contestable unmetered loads
 - Readiness Strategy

Matters for Discussion

Reallocations

Pedro Riveros Gutierrez

5MS related changes

- Switchover from 30 minute reallocations to 5 minute reallocation on 1 July 2021 (procedures updated to reflect this).
- All formulas/calculations remain the same, except now performed at 5 minute level.
- With reference to business continuity, this will be discussed at the 5MS Readiness Workgroup.
- **30-minute reallocations can only be entered if the “End date” is earlier than 1 Jul 2021.**
- **Conversely, 5-minute reallocations will only be accepted if the “Start Date” is later or on 1 Jul 2021.**

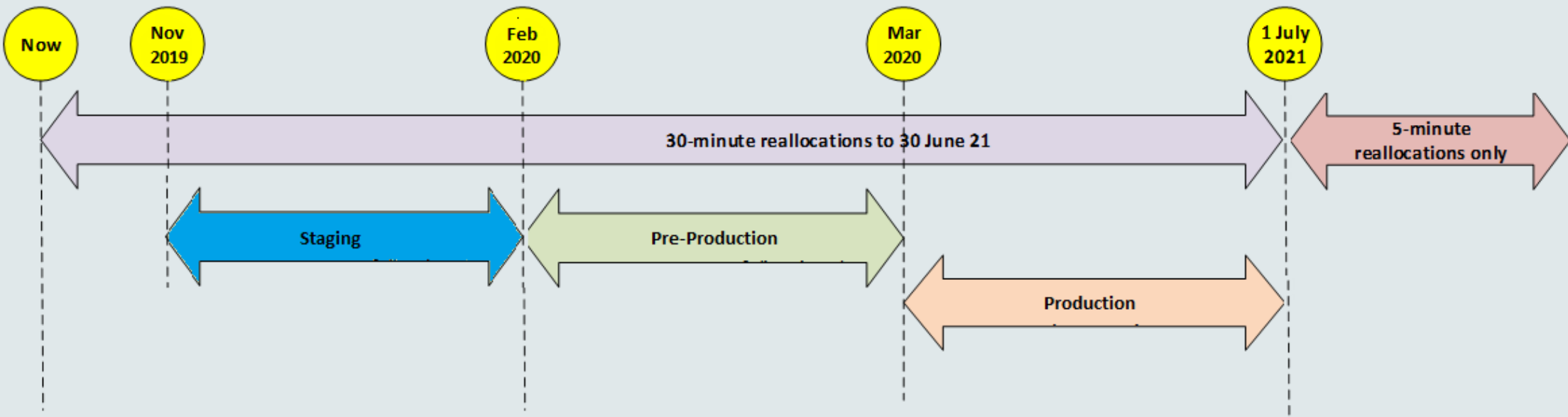
Transition to 5 minute reallocations

- Production reallocations interface for 5-minute reallocations available 6 months prior to July 2021 at the most.
- Pre-production 5-minute reallocations interface to be available for Market Participant testing and developing of API interfaces (aim for early 2020).
- Staging environment visible to Participants separately from Preprod, in November 2019
- Ex-post 30-minutes reallocation will naturally fade out as per the ex-post due date in accordance with the [Reallocation Time Table](#)

2.2. Ex Post Reallocations

- (a) *A reallocation request for an ex post reallocation may be registered after a target trading interval has occurred, but not later than the date and time specified in paragraph (b).*
- (b) *To be included in a final statement, the reallocation request must be registered (i.e. submitted and authorised by the credit and debit parties) before 5.00 pm on the 16th business day after the earliest trading interval specified in the reallocation request.*
- (c) *To be included in a preliminary statement, the reallocation request must be registered before 5.00 pm on the second business day after the billing period end date.*

5 Minute reallocations – indicative timetable of transition arrangements



What if you have 30-minute contracts beyond 1 July 2021?

- 30-minute contracts for \$, MWh or Swap reallocations beyond 1 July 2021
 - Participants can enter in reallocations by dividing the energy volume into 6 equal parts and use the same strike price for each 5-minute period.
 - Approach will correctly settle 30-minute contracts based on \$, MWh or Swap agreement types from 1 July 2021.
- 30-minute Cap and Floor reallocation types beyond 1 July 2021
 - Cannot be correctly reflected in 5-minute periods if contract is based on a 30-minute strike price.
 - There are no reallocations of this type currently in use – it's AEMO's view that support for these reallocation types will not be required beyond the start of 5MS.

Additional system functionality

The following changes are being assessed. AEMO notes that they are not strictly within the scope of the 5MS Program and recognises that they will provide important functionality.

- **API to be available for Participants to develop own reallocation interfaces**

- This is included in the revised procedures and is expected to be implemented within 5MS.
- An early version of the API is expected to be available for reallocations on a 30-minutes basis.
- The API will expose all the methods used in the web UI, methods to create, list and authorise amongst others.

- **Regional calendars**

- Under consideration - a drop down list of authorised/loaded/available calendars for the Participant to choose from, per reallocation ID.
- Procedure change gives AEMO the option of adding in regional calendars for Reallocations.
- It does not change the current functionality of the NEM calendars, to which Participants will continue to have access.
- AEMO is still exploring the best approach for implementing regional calendars and the associated costs.

- **Fill functionality**

- Fill functionality will be implemented within 5MS.
- Functionality will allow Participants to enter a value for one trading interval and, if there are no values for the subsequent intervals, the entered value is used.

Additional system functionality (continued)

• **New business alerts**

- Under consideration – development of a new set of business alerts using the business alert functionality currently available.
- This would enable a new Settlements Direct subscription to alerts, reminders and notifications.
- Currently, Participants can subscribe to available alerts via email or SMS.
- **Current design involves notifying Participants when:**
 - A reallocation has a change in status
 - Subscription options for changes done by anyone else or by any change in the reallocation
 - A reallocation due date is within 2 days

• **Single list of all reallocations**

- Under consideration - Participants to view a single list of all reallocations and the ability to filter and sort this list.
- Additional reporting function/summarisation (ie net position) - more details of Market Participant expectations are required to assess functionality for inclusion.

Additional system functionality (continued)

- **Reverse / Cancel feature**

- Currently Participants are able to reverse/cancel reallocations.
- AEMO is exploring a method to improve this functionality.

- **Copy / Paste functionality**

- Under consideration – similar functionality available for the Bidding Interface.
- This requirement may be satisfied by the Fill functionality.

Debrief on Metering Focus Group

Simon Tu

Debrief on Metering Focus Group

- Systems Highlights

Item	Status
New/Changed NMI Classification codes	<p>Presented at SWG#11 Under discussion by Metering Focus Group (MFG)</p> <p>Discussion on best document to capture the standing data scenarios e.g. NMI Procedures Document</p>
RM Reports	<ul style="list-style-type: none">• AEMO looking at more push data for RM reports• LNSPs proposed including them as recipients of pushed RM43 (UFE) reports• Both API and FTP will be supported for RM reports• Meter data resolution in RM reports will align to meter data resolution as received from MDPs
Changes to meter data delivery to AEMO	<ul style="list-style-type: none">• AEMO-confirmed, delivered net datastreams must be converted to register-level datastreams for Types 1, 2, 3 and subset of Type 4 meters, in CNDS table by 1 July 2021• Meter data and datastreams associated to reactive energy should be delivered to AEMO where the Q and/or K registers exist in the CRI table

Technical Specifications: Dispatch and Metering – feedback review

Hamish McNeish
Simon Tu

Technical document timeline – July to August 2019

Date	Document	Comment
By 31 Jul 19	5MS EMMS Technical Specification - Reallocations 1 st DRAFT	<ul style="list-style-type: none"> • Feedback due 2 weeks after release • Final version due 31st Oct 19
By 31 Jul 19	5MS EMMS Technical Specification - Web Bidding APIs, Pricing and Mandatory Restrictions FINAL	<ul style="list-style-type: none"> • Final version
By 30 Aug 19	5MS EMMS Technical Specification – Settlements and Billing 1 st DRAFT	<ul style="list-style-type: none"> • Feedback due 2 weeks after release • Final version due by 27th Dec 19
By 30 Aug 19	5MS MSATS Technical Specification – MSATS Browser FINAL	<ul style="list-style-type: none"> • Final version

5MS EMMS Technical Specification

Mandatory Restrictions

- Consultation is required, AEMO anticipates limited comments and feedback
- AEMO proposes to finalise the Technical Specification before the procedure is completed as the likelihood of change is low
- AEMO will also discuss this at the Dispatch Focus Group (scheduled 16/07)

Procedures Proposal

- The last 5-minute bid will be used by AEMO's processes to reflect the MR quantity for the 30-minute period

Proposed system design

- The MR Offer Stack remains as per 30-minute (no data model change)
- All MR Quantities provided **must** be the same in a 30-minute period
- The last 5-minute bid will be used by AEMO's processes

QUESTION: Are there any feedback or comments on the proposed approach?

5MS EMMS Technical Specification

Trading Data

The trading price changes from a 30-minute to 5-minute price from trading interval 1 July 2021 00:00:05. The current TRADING_DATA tables will be impacted by this change.

Trading Tables – proposal for discussion

- TRADINGPRICE data will change from 30-minute periods to 5-minute periods
- TRADINGINTERCONNECT, TRADINGLOAD, TRADINGREGIONSUM will stop being populated from 1 July 2021
- A new AVERAGEPRICE30 table will be introduced that will continue to provide the 30-minute average spot price mirroring the pre-1 July 2021 TRADINGPRICE data

QUESTION: Are there any feedback or comments on the proposed approach?

Feedback for technical documents

EMMS 5MS Technical Specification

- v0.3 – Pricing, and additional bidding APIs

MSATS 5MS Technical Specification

- v0.17 – MSATS Browser and RM Report changes

Dispatch Focus Group – agenda

Ian Devaney

Dispatch Focus Group – agenda

Topics to Discuss

1. 5-minute Pre-dispatch enhancements
 - Extension, Price Sensitivities, FSIP
2. 5MS impacts on PASA
 - Operational and systems impact
3. 5MS impacts on RERT
 - Operational and systems impact
4. Mandatory restriction offers under 5MS
 - AEMO proposed approach

Forward meeting plan

Hamish McNeish

Upcoming SWG meeting content

- **Seeking feedback for proposed content/topic areas**

Date	Meeting	Proposed content
Mon, 19 Aug 19	SWG#1 3	<ul style="list-style-type: none">• Discussion<ul style="list-style-type: none">• Staging environment overview• Dispatch Focus Group outcomes• Metering Focus Group update• Technical Specifications<ul style="list-style-type: none">• Settlements: Reallocations specification [feedback review]
Mon, 17 Sept 19	SWG#1 4	<ul style="list-style-type: none">• Discussion<ul style="list-style-type: none">• Bidding Web UI Walkthrough (tentative)• Technical Specifications<ul style="list-style-type: none">• Settlements: Settlements and Billing specification [feedback review]

Upcoming meetings

- Systems Working Group
 - SWG #13 - Mon, 19 August 2019
- Focus groups
 - Participants to advise of key areas for focus group sessions
 - MSATS Standing Data Scenarios to be held in early August (follow-on from June SWG)
- 5MS Meetings and Forum dates
 - Calendar updated to December 2019

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

General questions

Sammy Wainrit

API Gateway – Staging only

- As part of AEMO's Digital Strategy, work is being undertaken on our API Gateway technology and deployment.
- AEMO is planning this work to minimise the impact to Participants using existing APIs, however a potential limitation was noted for the 5MS Staging environment.

QUESTION: If in the 5MS Staging environment the new APIs were only accessible via the internet and not available via MarketNet, is this impact a concern to the SWG?

Further information

- AEMO 5MS Program contacts:
 - Sammy Wainrit – Wholesale Lead
 - Mark Hillaby – Settlements
 - Ian Devaney – Dispatch & Bidding
 - Grant Collins – Infrastructure
 - Hamish McNeish – Technical Advisor
 - Jim Agelopoulos – Retail Lead
 - Monica Morona – Stakeholder Engagement
- Contact details:
 - 5MS email: 5ms@aemo.com.au
 - 5MS webpage: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>

Appendix 1 – Metering Focus Group - debrief

Debrief on Metering Focus Group

- Agenda:
 - Metering consultation update
 - MSATS Standing Data Scenarios
 - Non-contestable Unmetered Loads
 - Proposed Metering Data Quantity and Quality SLAs
 - Changes to RM Reports
 - Readiness Workstream
 - Preparing for 1 July 2021

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
Metering Consultations Overview	<ul style="list-style-type: none"> • Overview of how MP1, MP2-ICF and MP2-5MS/GS fit together • Confirmation on what MP2 was implementing and material items discussed in the consultation paper • Discussion regarding potential submission extensions • MP3 likely to include approx. 5-6 non-rules based documents which will be published for comment 	<ul style="list-style-type: none"> • MFG to provide detailed advice on preferred options for communicating how the Metering Package procedure versions fit together. • MFG to provide feedback regarding the likelihood, benefits and trade-offs of requesting potential submission extensions
MSATS Standing Data Scenarios	<ul style="list-style-type: none"> • AEMO provided an in-depth overview of the 30+ MSATS Standing Data scenarios it had identified to ensure the appropriate treatment of various loads with the introduction of: <ul style="list-style-type: none"> - UFE publication obligations from 1 July 2021 and - UFE financial settlement from 6 Feb 2022 • Associated Questions: • Who will pay for the Bulk connection point metering if the LR is now GLOPOOL? • How would DBs know when to apply SGA NMI Classification Codes? 	<ul style="list-style-type: none"> • MFG to consider preferred options regarding the recovery of Bulk connection point metering fees • AEMO and the MFG to consider preferred SGA identification and classification options • AEMO to consider and apply alternative labelling of Hybrid scenarios • MFG to consider alternative options in handling “mixed import/export” scenarios

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
MSATS Standing Data Scenarios		<ul style="list-style-type: none">• MFG to provide feedback regarding the physical and market based requirements associated with cross-boundary scenarios• AEMO to circulate the underlying diagram used to support the MSATS Standing Data scenarios agenda item• AEMO to consider how and where the information captured in the MSATS Standing Data scenarios diagram could be included in AEMO documentation e.g. diagram or table version included in the NMI Procedure document

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
Non-contestable Unmetered Loads	<ul style="list-style-type: none">• Member raised a question as to what the expected metering classification code would be for these non-contestable unmetered loads e.g. type 8<ul style="list-style-type: none">- AEMO mentioned that the first stage consultation proposed the introduction of a new Metering Installation Type code of 'NCONUML' for these loads• Member raised the issue of contestability for these loads.<ul style="list-style-type: none">- AEMO confirmed that these loads will be treated as market loads but that the AEMC currently considers these loads to be non-contestable	None required

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
Proposed Metering Data Quantity and Quality SLAs	<ul style="list-style-type: none">• AEMO provided context as to why and what was being proposed for metering data quantity and quality standards• Concerns were raised that requiring 100% quality requirements too early in the settlement cycles may result in unintended consequences e.g. premature final substitutions being delivered<ul style="list-style-type: none">- General discussion occurred regarding various scenarios leading to MDPs not being able to provide actual meter reads for remotely read meters for prolonged periods of time• AEMO stated that the final standards needs to strike the right balance between supporting high quality market outcomes and practicality	None required

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
RM Reports	<ul style="list-style-type: none">• AEMO provided an overview of the expected changes to the RM reports• AEMO stated that they are looking to start ‘pushing data’ rather than Participants ‘pulling data’ in the future• LNSPs suggested that including them as recipients of the automated “pushed” RM43 report would be useful, as most UFE related enquiries are “controllable” by LNSPs• AEMO confirmed that both API and FTP will be supported as part of the 5MS program• AEMO noted that changes/requirements impacting RM reports may occur throughout the program due to the discovery of additional implementation requirements and/or the implementation of approved Change Requests• AEMO stated that metering data resolution, in the applicable RM reports, will align to the various levels of metering data being received by AEMO from MDPs i.e. if the MDP delivers 5min metering data to AEMO for a particular NMI, 5min resolution/payloads will be provided for in the associated RM report	None required

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
Readiness Workstream	<ul style="list-style-type: none">• AEMO provided an overview of the scope, priorities and timings of the Readiness Working Group (RWG)• Members asked a couple of clarification questions regarding potential accreditation update requirements<ul style="list-style-type: none">- AEMO confirmed that potential accreditation updates may be required for certain Meter Service Providers e.g. MDPs depending on the amount of change an MSP has had to implement to comply with their 5MS obligations• Members asked questions as to how SWG activities would be considered by the RWG<ul style="list-style-type: none">- AEMO stated that 'yes' the RWG would include SWG activities, such as transition, cutover and testing requirements where appropriate• AEMO noted that the development and finalisation of key readiness artefacts would occur over the next 6mths• AEMO noted that the MFG would have an ongoing role during the Readiness phase of the program, transitioning from a procedural focus to a transition and cutover focus	None required

Debrief on Metering Focus Group

Agenda item	Items of interest	Actions/next steps
Preparing for 1 July 2021	<ul style="list-style-type: none">• Discussions associated with 1 July 2021, 6 Feb 2022 and transitional activities had occurred throughout the day• AEMO noted that the content provided in the agenda item was not to be seen as a comprehensive list but instead as a list of items to support ongoing considerations relating to the successful implementation of the 5MS Program• UFE Publication from 1 July 2021 slide – discussion occurred regarding the need for the DNSP, Retailer and customers agreeing to size and profile of NCULs• Changes to the delivery of meter data to AEMO slide – AEMO confirmed that net datastreams must be converted to register level datastreams for type 1, 2, 3 and subset of type 4 meters, in the CNDS table, by 1 July 2021• The transition of datastreams, from net to register level, for other interval meters is specified in the MP2 first stage procedures• AEMO suggested that metering data and datastreams associated to reactive energy should be delivered to AEMO where the Q and/or K registers exist in the CRI table• A member raised concerns about the data storage exemption not being extended to other type 4, 4A and 5 meters by the AEMC<ul style="list-style-type: none">- AEMO stated that the materiality of this issue would need to be quantified by Participants prior to potential rule changes being considered	None required