



# 5MS & GS Systems Working Group #13

19 August 2019

# Agenda

No	Time (AEST)	Agenda item	Presenter
<b>Preliminary matters</b>			
1	10:00 – 10:05	Welcome, introduction and apologies	Sammy Wainrit
2	10:05 – 10:15	Minutes and actions from last meeting	Sammy Wainrit
<b>Matters for noting</b>			
3	10:15 – 10:25	Retail Stream update	Jim Agelopoulos
4	10:25 – 10:30	Dispatch Stream update	Ian Devaney
5	10:30 – 10:35	Settlements Stream update	Mark Hillaby
6	10:35 – 10:45	Readiness Working Group update	Greg Minney
7	10:45 – 11:05	Metering Focus Group update	Blaine Miner
8	11:05 – 11:15	Dispatch Focus Group update	Ian Devaney
Break 11:15 – 11:25			
<b>Matters for discussion</b>			
9	11:25 – 11:45	Staging Environment	Greg Minney
10	11:45 – 12:05	MDM File Format, Load Process User Guide	Simon Tu
11	12:05 – 12:25	Dispatch and Operations Technical Specification	Hamish McNeish
12	12:25 – 12:40	Reallocations Draft Technical Specifications Feedback	Mark Hillaby
<b>Other business</b>			
13	12:40 – 12:50	Forward meeting plan	Sammy Wainrit
14	12:50 – 13:00	General questions	Sammy Wainrit

# Actions

Sammy Wainrit

# Open Actions (1)

Item	Action required	Responsible	Action Update	By
1.6	AEMO to provide assessment on bandwidth/networking impacts.	AEMO	<p><b>Pending</b></p> <p>Networking impact analysis is ongoing and an update to SWG will be provided no later than November 2019</p>	November 2019
9.7.6	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.	AEMO	<p><b>Pending</b></p> <p>Design is in progress. Updates will be provided as the work progresses.</p> <p>This will be addressed through the Readiness Workstream via cutover. Dates will be publicised to the SWG when set by the RWG.</p>	August 2019
10.9.4	AEMO will consider approach and advise participants when error codes are proposed to be published.	AEMO	<p><b>Complete</b></p> <p>AEMO will present error codes to Participants later in this pack</p>	August 2019

# Open Actions (2)

Item	Action required	Responsible	Action Update	By
12.3.1	AEMO to determine the best method of communicating the readiness activity timeline.	AEMO	<b>Ongoing</b> Matter under consideration by the Readiness Workstream and will be address under the Readiness Transition Go-Live Strategy and Transition Plans	Ongoing
12.3.2	SWG members to provide any further feedback on if they plan to move to B2M via APIs and the expected timeline.	SWG members	<b>Ongoing</b> No feedback received as at 14 Aug	16 August 2019
12.3.3	AEMO to consider publishing an MPP file that reflects the systems timelines.	AEMO	<b>Completed</b> This is provided monthly to the PCF and updated as required. This will be included in the SWG Meeting Pack	August 2019
12.4.1	SWG Members to review Technical Specifications and provide feedback to AEMO via 5MS@aemo.com.au.	SWG members	<b>Ongoing</b> AEMO will consider responses provided during the feedback window	16 August 2019
12.12.1	AEMO to advise SWG of first Testing Focus Group when details available.	AEMO	<b>Ongoing</b> Details will be provided when TFG is scheduled	Ongoing
12.13.1	AEMO to present predictions to SWG on volume of meters capturing 5-minute data by the end of 2022.	AEMO	<b>Ongoing</b> Update to be provided in the workstream updates.	August 2019
12.13.2	SWG members to provide feedback to AEMO regarding the 5MS Staging environment and	SWG members	<b>Ongoing</b> No feedback received as at 14 Aug	16 August 2019

# Retail Stream update

Jim Agelopoulos

# 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>										
<b>PACKAGE 1 - Metering Data &amp; Metrology</b>										
MDFF • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	1 Dec 19	Sep-20	Nov-20
<b>PACKAGE 2 - MSATS &amp; SLPs</b>										
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 (User Guide) • MSATS Release Schedule & Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	30-Sep-19	-	1 Dec 19	Sep-20	Nov-20
<b>PACKAGE 3 - Miscellaneous</b>										
B2M via API • MSATS Release Schedule & Technical Specification	Oct-18	-	Apr-19	9-May-19	31-May-19	30-Sep-19	Oct-19	30 Dec 19 TBC	Feb 20 TBC	Mar 20 TBC
MSATS Browser (LVI) changes • MSATS Release Schedule & Technical Specification	Aug-18	-	May-19	9-May-19	28-Jun-19	30-Aug-19	TBC	31 Jul 20	Sep-20	Nov-20
MSATS Report changes • MSATS Procedures MDM Procedure • MDM File Format and Load Process (User Guide) • MSATS Release Schedule & Technical Specification General Process & Document Clean-up	Oct-18	-	Apr-19	Apr-19	28-Jun-19	30-Sep-19	-	31 Jul 20	Sep-20	Nov-20

Proposed revised date for B2M via API User Guide

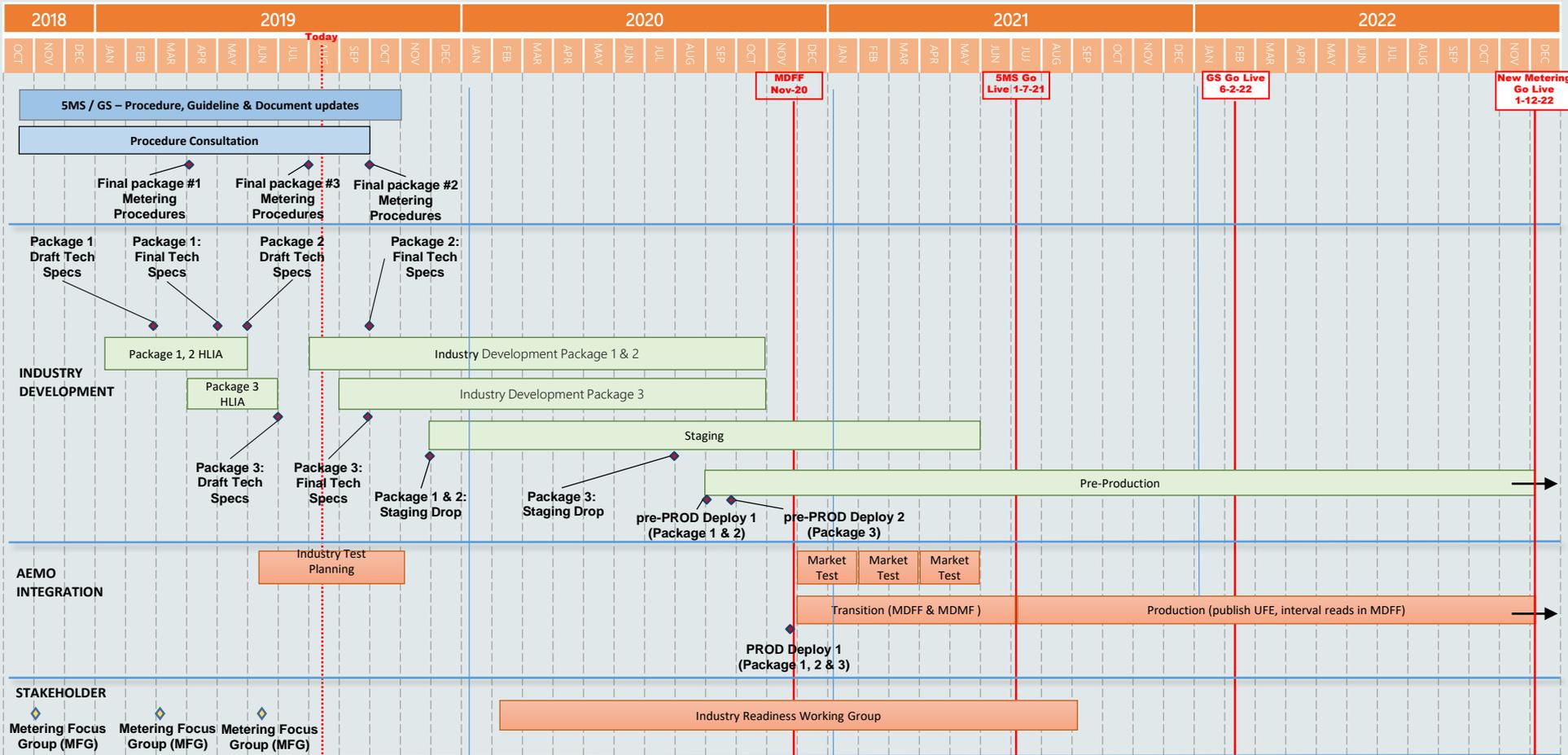
There are no RM Report User Guides

Updated to align to L2 milestones

# System Workstream – Metering

#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 submit five-minute read data.	31-May-2021	Provisional	Content and timing of Market Trials TBD

# 5MS Participant timeline – Metering



# Dispatch Stream update

Ian Devaney

# System Workstream – Dispatch and Operations

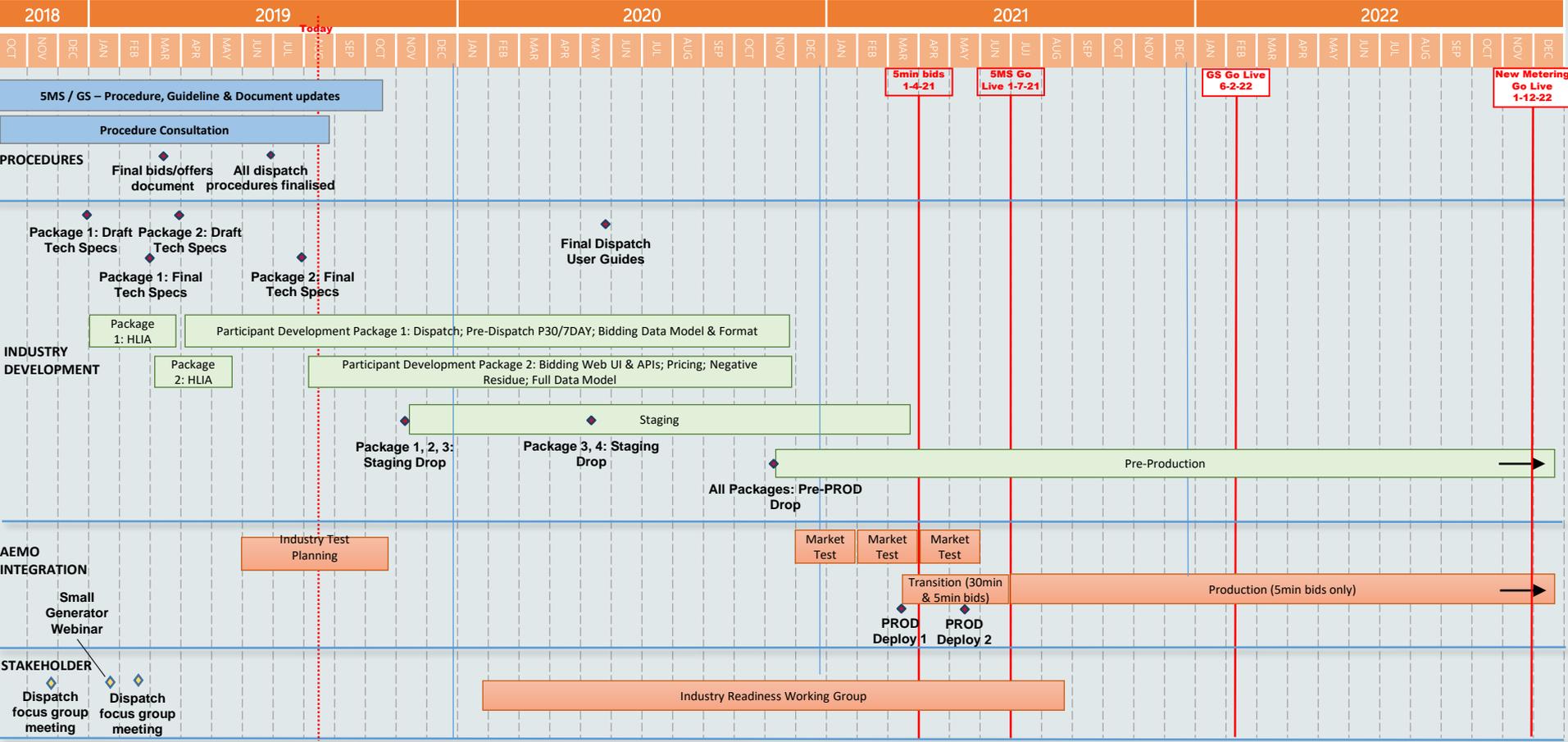
5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	SMS Staging	Preprod	Production
<b>DISPATCH AND OPERATIONS</b>										
<b>PACKAGE 1 - Bidding FTP and API</b>										
Transition	Aug 18	Oct 18	Aug 18	Nov 18	Dec 18	02 Apr 19	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
<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	31 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	31 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	-	-	-	-	-	-	-	-	-
<b>PACKAGE 5 - Full Data Model</b>										
Full Data Model	Sep 18	Ongoing	Ongoing	Apr 19	Ongoing	31 Jan 20	30 Oct 19	29 Nov 19	Nov 20	May 21

Added date to month

# 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

Mark Hillaby

# System Workstream – Settlements

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>SETTLEMENTS</b>										
<b>PACKAGE 1 - Reallocations</b>										
Reallocations	Dec 18	Nov 18	Dec 18	Mar 19	31 Jul 19	15 Oct 19	01 Nov 19	01 Nov 19	Mar 20	Apr 20
<b>PACKAGE 2 - Settlements and Billing</b>										
Settlements	Oct 18	Nov 18	Dec 18	Mar 19	30 Aug 19	20 Dec 19	-	16 Mar 20	Nov 20	May 21
Billing	Oct 18	Nov 18	Dec 18	Mar 19	30 Aug 19	20 Dec 19	-	16 Mar 20	Nov 20	May 21
<b>PACKAGE 3 - Prudentials and Estimation</b>										
Prudentials	Sep 18	Nov 18	Dec 18	Mar 19	31 Oct 19	31 Jan 20	01 Nov 19	15 May 20	Nov 20	May 21
Estimation	Oct 18	Nov 18	Dec 18	Mar 19	31 Oct 19	31 Jan 20	-	15 May 20	Nov 20	May 21
Full Data Model	Refer DISPATCH									

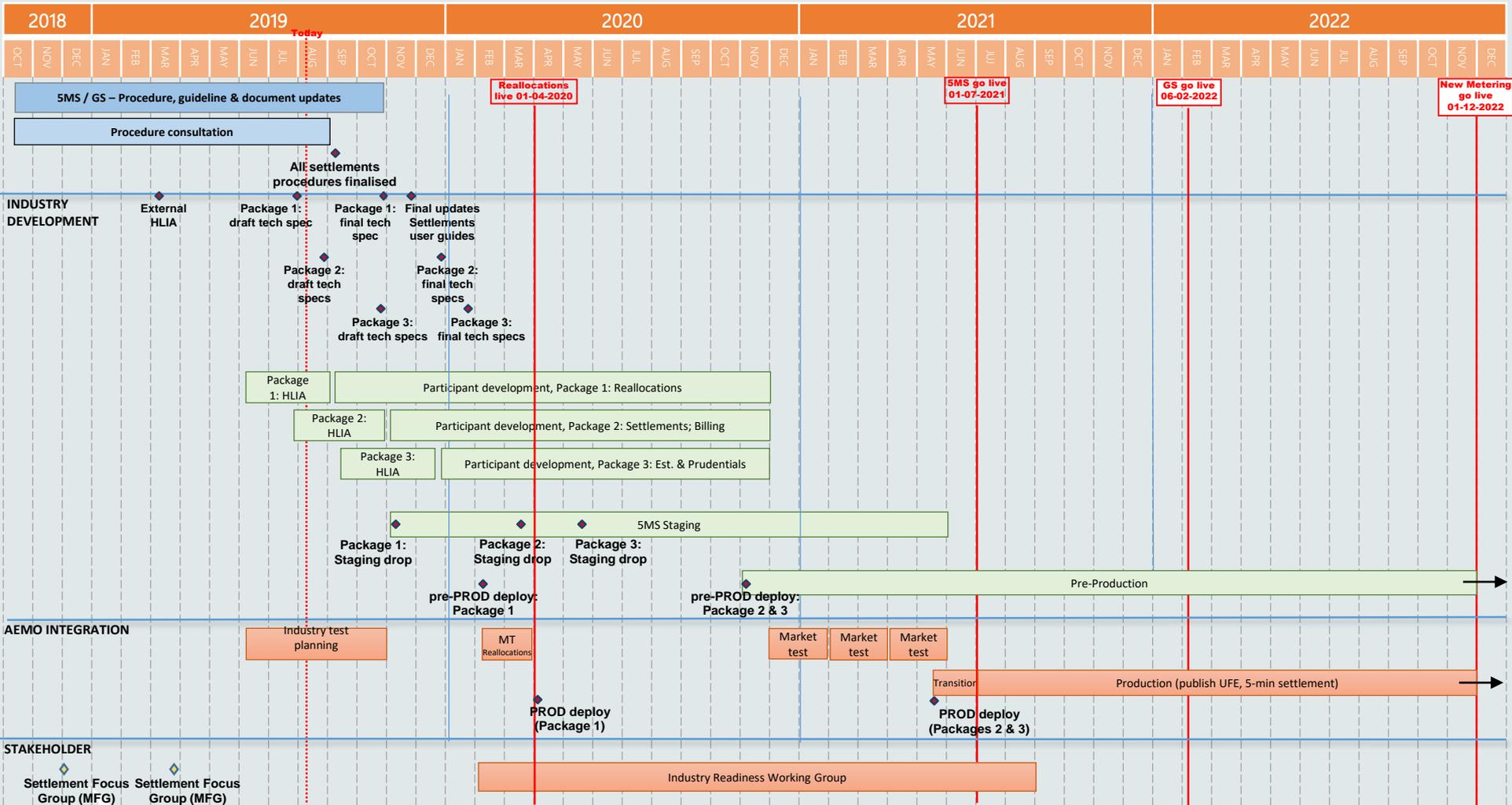
Corrected date to align with L2 milestone

Updated to align to L2 milestones

# 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

# Readiness Deliverables

NOTE: dates to be confirmed and included in Program Milestones

Item	Engagement Commences	Draft Paper Released	Final Paper Released
Market Readiness Strategy	Jun 19	30 Aug 19	29 Nov 19
Industry Test Strategy	Jul 19	30 Sep 19	31 Oct 19
Transition & Go-Live Strategy	Jul 19	30 Sep 19	31 Jan 20
Market Trial Strategy	Jul 19	30 Sep 19	28 Feb 20
Metering Service Provider Accreditation Update Plan	Oct 19	29 Nov 19	31 Mar 20
Industry Readiness Reporting Plan	Sep 19	29 Nov 19	31 Jan 20

# Workstream Update and Market Readiness Deliverables

- Transition Approach
  - RWG is commencing engagement on transition and Go-live Strategy
  - Using Staged systems transition as basis for overall transition
  - Metering transition Activities and timeframes being more fully defined
  - Transition Focus Group established (30<sup>th</sup> Aug) to progress approach and understand interdependencies
- Interim Readiness Reporting
  - Initial Interim Readiness Reporting survey completed and results shared with RWG and PCF
  - Intent to establish an understanding of participant project establishment
  - Consolidated results available from your RWG rep
- Testing Principles
  - Outline of Approach to Industry Testing and Market Trials
  - Suggested testing phases to align with staged transition
  - Will be progressed in Industry and Market Test Strategy Deliverable

# Metering Focus Group update

Blaine Miner

# Metering Focus Group Update

- Held in Sydney on Thursday 18 July 2019
- Agenda
  - Metering Consultation Update
  - June MFG Actions
  - Non-contestable Unmetered Loads
  - MSATS Standing Data Scenarios
  - Proposed Metering Data Quantity and Quality SLAs
  - Readiness Workstream

# Metering Focus Group Update

Agenda Item	Items of Interest
Metering Consultations Overview	<ul style="list-style-type: none"><li>- AEMO discussed the PWG support of decoupling the MP2 and ICF consultations, including high-level reasoning</li><li>- AEMO engaged the MFG on the expected length of time participants may require to submit a well considered submission to the MP2 Draft Determination</li><li>- AEMO stated that the MDM Format and Upload process document was being removed from the MP2 consultation, due to it being a non-rules based technical document</li><li>- AEMO requested that where a participant does not agree with an AEMO Draft position, for them to include sufficient context as to why they disagree and to propose an alternative option wherever possible</li><li>- AEMO described the interplay between Procedure effective dates and Readiness workstream plans</li></ul>
June MFG Actions	<ul style="list-style-type: none"><li>- Discussion regarding the identification and treatment of SGA connection points<ul style="list-style-type: none"><li>- Members stated that they did not know which connection points were associated to an SGA at the time of creating a NMI in MSATS</li><li>- AEMO agreed that DNSPs could not identify SGAs efficiently but did suggest that they could identify non-registered embedded generators (NREG)</li><li>- Proposed SGA NMI Classification Code be removed and NREG added</li></ul></li><li>- AEMO confirmed that all June actions are now considered closed</li></ul>

# Metering Focus Group Update

Agenda Item	Items of Interest
Non-contestable Unmetered Loads	<ul style="list-style-type: none"><li>- General discussion regarding various NMI creation models:<ul style="list-style-type: none"><li>- One NMI to one connection point and one NMI to multiple connection points</li><li>- AGL described their proposed master to child NMI option</li><li>- Multiple child NCUL connection point NMIs linked to one master NMI</li></ul></li><li>- Participants agreed that a one to one model is preferable but recognised that this arrangement will take time to transition to<ul style="list-style-type: none"><li>- Participants believed that AEMO should provide for both models in the Draft so that industry can lead the transition</li></ul></li><li>- Agreement that 'Type 7 approach' works well for predictable NCULs such as watchman lights</li><li>- Members suggested that other less predictable NCULs should be treated as flat 12 or 24hr profiles</li><li>- AEMO recognised issues with having DBs publish certain information to the market e.g. confidentiality concerns<ul style="list-style-type: none"><li>- AEMO will remove the publishing requirement relating to NCULs in the MP2 Draft Procedures</li></ul></li><li>- Discussed submission feedback regarding AEMO profiling NCUL instead of MDPs<ul style="list-style-type: none"><li>- Most members believed that the required updates to MDP systems should be manageable and that MDPs should perform this function</li><li>- AEMO mentioned that if it had to perform the profiling then Retailers would also need to build this functionality in order for them to be able to validate AEMO's market charges</li><li>- AEMO's draft position will be that the MDP needs to perform this profiling and supply 5min metering data to the market</li></ul></li></ul>

# Metering Focus Group Update

Agenda Item	Items of Interest
MSATS Standing Data Scenarios	<ul style="list-style-type: none"><li>- AEMO not intending to proceed with NMI classification Code of SGA, to be replaced by NREG</li><li>- AEMO not intending to proceed with HYBRID NMI classification Codes, tied up with ESS rule change development and timing</li><li>- Question regarding the provisioning/treatment of Small or Large NCULs<ul style="list-style-type: none"><li>- In instances where NCULs are being aggregated under one NM, should the NMI be classified as Small or Large?</li><li>- DNSPs prefer procedures to say NCULs are always Small, irrespective of aggregated load, but retailers may have a different view</li></ul></li><li>- Member asked if the NMI Classification Code is an enumerated list<ul style="list-style-type: none"><li>- AEMO confirmed that the participant submitted NMI Classification code is validated by MSATS at the time of CR submission using a codes table and it is not based on an Enumerated list. As a result there is no impact to the aseXML schema when introduction new NMI Classification codes</li></ul></li><li>- Expected process for updating MSATS standing data<ul style="list-style-type: none"><li>- NMI Classification Codes – as per the standard CATS CR process</li><li>- GLOPOOL updates – updates to be performed by AEMO, supported by applicable participants</li></ul></li><li>- Implications of the introduction of GLOPOOL<ul style="list-style-type: none"><li>- Retailers/LRs will no longer receive metering data where they are not the FRMP of the NMI e.g. bulk supply point metering data</li></ul></li><li>- Question asked about who will pay the metering charges for boundary metering if the LR is GLOPOOL<ul style="list-style-type: none"><li>- MSPs to discuss this issue with NSPs</li></ul></li><li>- Members mentioned that all of the variations of cross-boundary supplies needs to be discussed and finalised<ul style="list-style-type: none"><li>- Ausgrid stated that all of these scenarios must be finalised to ensure the correct NSP system validations are developed</li><li>- Members Suggested the need to have a Cross Boundary Guideline to flush out the permutations and the detail</li></ul></li></ul> <p><b>Action:</b> AEMO to arrange WebEx session to explore variety of cross boundary scenarios</p> <p><b>Action:</b> MFG to provide known cross-boundary scenarios for inclusion in the WebEx session e.g. 66KVs (that are bidirectional)</p>

# Metering Focus Group Update

Agenda Item	Items of Interest
Proposed Metering Data Quantity and Quality SLAs	<ul style="list-style-type: none"><li>- AEMO stated that some the proposed Quantity SLAs in the MFG slide pack does not reflect the previously distributed slide pack, due to feedback being received from an MDP prior to the meeting<ul style="list-style-type: none"><li>- MDP feedback suggested that the Quantity SLA for R1/R2 should be 100%</li></ul></li><li>- AEMO asked what scenarios caused the quantity of reads to not be a 100% by Revision 1<ul style="list-style-type: none"><li>- Member mentioned that system deficiencies and manual exception processes resulted in this outcome</li><li>- AEMO asked why MDP systems were not programmed to provide temporary substitutions while manual exceptions were being investigated</li><li>- Member mentioned that substitution methods are different for different meter types, some involve negotiation with other parties and this takes time and manual intervention</li><li>- Members were comfortable with quantity targets being between 99% and 99.9%</li></ul></li></ul>

# Metering Focus Group Update

Agenda Item	Items of Interest
Readiness Workstream	<ul style="list-style-type: none"><li>- Member asked if the introduction of NCULs would result in the need for accreditation updates<ul style="list-style-type: none"><li>- AEMO stated that this would be dependent on the exact scenario and that these considerations would be addressed as part of the Readiness Workstream</li></ul></li><li>- Question asked if the Readiness group had developed a 'flow path' about what would happen if certain participants were ready and others were not<ul style="list-style-type: none"><li>- AEMO stated that the RWG would be considering this issue in the coming months</li></ul></li><li>- Member made a comment that Readiness appears to be only focusing on 1 July 2021 delivery as opposed to 1 July 2021, 6 February 2022 and 1 December 2022 delivery<ul style="list-style-type: none"><li>- AEMO commented that Readiness will consider the activities required to successfully implement both Rules</li></ul></li><li>- Member mentioned that some participants will be delivering their system changes throughout 2021 and 2022<ul style="list-style-type: none"><li>- Will be transitioning type 4 and 4A of meters throughout 2022</li><li>- On average approximately 650 meters per day to deliver 5min data throughout 2022 to meet the 01 Dec 2022 deadline</li></ul></li></ul>
General Business and Next Steps	<ul style="list-style-type: none"><li>- AEMO Stakeholder team will be contacting MFG members to confirm primary contact details</li><li>- Readiness is currently considering if a new call for nominations will be required to support the Readiness centric MFG discussions</li></ul>

# Metering package #2 – consultation update

Blaine Miner

# Metering Package 2 – Draft Determination Overview

Deliverable	Date
Issues Paper published	20 May 2019
Submissions due on Issues Paper	24 June 2019
Draft Report published	5 August 2019
Submissions due on Draft Report	2 September 2019
Final Report published	30 September 2019

- Draft Determination published on Monday 5<sup>th</sup> August
  - Submissions close Monday 2 Sept (4 weeks)
  - Final Determination indicative date 30 Sept (At-Risk due to Draft submission extension)
- Material Items
  - Treatment and profiling of non-contestable unmetered loads
  - Metering data quality and quantity requirements
  - Inclusion of MSATS Standing data scenario content into the relevant procedures e.g. NMI Procedure
  - Approach to the removal/replacement of the LR and the introduction of the ENLR

# Metering Package 2 – Draft Determination Overview

Material Item	AEMO Draft Determination
Treatment and profiling of non-contestable unmetered loads	<ul style="list-style-type: none"> <li>- Creation of NCUL NMIs in MSATS               <ul style="list-style-type: none"> <li>- AEMO’s Metering Procedures e.g. Metrology Procedures: Part A &amp; Part B will explicitly allow for both a one NMI to one device and a one NMI to multiple device arrangement.</li> </ul> </li> <li>- Classification of NCULs               <ul style="list-style-type: none"> <li>- AEMO considers that the inclusion of one new NMI Classification Code of ‘NCONUML’ and one associated Meter Installation Type code of ‘NCONUML’ will adequately support the correct treatment of these supplies in the market.</li> </ul> </li> <li>- Profiling of NCULs               <ul style="list-style-type: none"> <li>- Predictable loads                   <ul style="list-style-type: none"> <li>- Discretion should be provided to metering coordinators (MCs) as to when a ‘Type 7’ methodology could be applied in profiling NCULs.</li> </ul> </li> <li>- Unpredictable loads                   <ul style="list-style-type: none"> <li>- Procedures should align as much as possible to the existing methodologies used to support retail and network billing of these supplies. Profiling arrangements should be agreed between the Distributor, Retailer and the Customer.</li> </ul> </li> </ul> </li> </ul>
Changes to the metering data quantity and quality requirements	<ul style="list-style-type: none"> <li>- AEMO maintains that the delivery of timelier and more accurate metering data from MDPs will result in more accurate and efficient market settlement outcomes. AEMO does however acknowledge that implementing 100% targets could result in unintended consequences and does not provide for legitimate exception scenarios.</li> </ul>

# Metering Package 2 – Draft Determination Overview

Material Item	AEMO Draft Determination
Exemption Procedure: Metering Provider Data Storage Requirements	<ul style="list-style-type: none"> <li>- The draft exemption procedure will account for the modifications to clauses 7.1.2 and 7.8.2 of the NER for Victorian advanced metering infrastructure (AMI), as applicable in Victoria only.</li> <li>- There is no change to the position that data storage exemptions will only be considered for applicable interval meters that just fall short of Rule 7.8.2(a)(9) of the NER i.e. 30-34 days of storage.</li> </ul>
Treatment and maintenance of the LR and FRMP fields	<ul style="list-style-type: none"> <li>- A new notional Market Participant ID of 'GLOPOOL' will be introduced to effectively remove the applicable LR obligations and notifications in MSATS.</li> </ul>
Global Settlement Connection Point Scenarios	<ul style="list-style-type: none"> <li>- Additional NMI Classification Codes will be introduced to appropriately identify and allocate various connection point loads from 1 July 2021 to support UFE publication requirements.               <ul style="list-style-type: none"> <li>- BULK                   <ul style="list-style-type: none"> <li>- Connection point where a Transmission Network connects to Distribution Network - also termed 'Bulk Supply Point'</li> </ul> </li> <li>- DWHOLSAL                   <ul style="list-style-type: none"> <li>- Distribution network connection point where energy is directly purchased from the spot market by a Market Customer</li> </ul> </li> <li>- NCONUML</li> <li>- NREG                   <ul style="list-style-type: none"> <li>- Connection point associated with a non-registered embedded generator, i.e. a generating unit that is not classified by a registered Market Generator with AEMO, but may be classified by a Small Generation Aggregator as a market generating unit.</li> </ul> </li> <li>- XBOUNDRY                   <ul style="list-style-type: none"> <li>- Distribution Network to Distribution Network connection point</li> </ul> </li> </ul> </li> </ul>

# Dispatch Focus Group update

Ian Devaney

# Dispatch Focus Group update

- AEMO has taken the decision not to include the extension of 5-Minute Pre-Dispatch as part of 5MS Program of works
- Fast Start Inflexibility Profile will be included into 5-Minute Pre-Dispatch with a rule change allowing for this by this month

Two key actions agreed during the DFG:

- AEMO to investigate whether sensitivities could be supported on the current 5MPD platform and respond back to the DFG by email
- AEMO to clarify its current approach to Daily Energy Constraints to the DFG via email

Break (10 mins)

# Staging environment

Greg Minney

# 5MS Staging environment

- The new 5MS Staging environment will be available to Participants from the 1<sup>st</sup> November 2019.
- Any Participant requiring support can contact or email the AEMO support hub who will raise a ticket for the 5MS Program to investigate and resolve.
  - The Program will attempt to acknowledge tickets raised within 24 hours (or the end of the next business day) and perform a high level triage on the issue
  - Once the issue is resolved the ticket will be closed and the Participant notified
  - If the issue is identified as a defect the Participant will be notified of the defect ID and the ticket will be closed.\*
- Changes will be deployed into this environment:
  - as per the dates communicated to Participants in the SWG and RWG, and
  - be limited to the scope defined and communicated in the SWG and RWG in the lead up to each release.
- Formal notifications will be sent after each deployment confirming scope.

*\* Defects identified by Participants will be addressed in line with the internal testing program and released in line with scheduled updates and changes.*

# MDM File Format and Load Process User Guide

Simon Tu

# MDM File Format and Load Process

- Covers what system functionality will be available from 1<sup>st</sup> December 2020
- Obligations on MDM are covered in the Procedures
- Removed from the 5MS Procedure consultation as it is a User Guide.

# MDM File Format and Load Process

## Changes of Note:

- Pg 21: Sample meter data under MDFF should be sent through under the CSVIntervalData element. CNDS data stream type is the identifier that the reads are for a sample meter.
- Pg 24: Specification on the number of transactions per MTRD / MDMT message has been removed
- Pg 31: For MTRD 2 here any party identifies an issue that requires a new version or resend of *metering data*, all recipients, including AEMO, are to receive this.
- Pg 32: For MTRD AEMO shall bundle *ase:MessageAcknowledgement* and *ase:TransactionAcknowledgement* where the *ase:TransactionAcknowledgement/@status="Reject"* where MDFF fails structural validations. Where the Reject is a result of every read failing validation the *ase:MessageAcknowledgement* and *ase:TransactionAcknowledgement* will be sent separately.
- Pg 43 & 44: Updated MTRD validations. AEMO will only validate for settlement related data. B2B elements (Reason Code and Description, Trans Code).
- Finalisation of new error codes (see '*5MS Validations Matrix August 2019.xlsx*')

# MDM File Format and Load Process

- pg 11:

## Transition of Metering Data Transaction Types

From 1 December 2020 MDPs can transition from MDMT Meter Data Notifications to the MTRD Meter Data Notifications transaction type.

Upon MDP commencement of MTRD Meter Data Notification provision to AEMO, the CATS\_NMI\_DATA\_STREAM ('CNDS') table must reflect:

- Register level Data Stream Suffix(s) for Basic and Interval meters. e.g. E1, B1, 11, 41 etc..

OR

- Net Level Data Stream Suffix(s) for an interval meter (e.g. N1, N2, etc..)

Where the CNDS table reflects a Net Level Data Stream Suffix, the standing data provided in the 200 line of an MTRD MDFF NEM12 200 line will be used by AEMO to identify the individual Register Level DataStream Suffix(s) that constitute the 'Net'.

Where the CNDS table is updated to reflect new and/or updated Register level Data Stream Suffix(s), the MDP must ensure AEMO is provided a single MTRD Meter Data Notification comprising of all Register Level DataStream Suffix's for each IntervalDate.

The metering data in the MDFF NEM12 must contain accurate 200 record MDMDDataStreamIdentifier, NMISuffix and NMISuffix. AEMO uses these NEM12 200 record values to identify what datastream suffix constitute net data (net is  $N = (E-B)$ ).

Where the MDP needs to add or remove a contributing suffix, replacement reads must be sent for the impacted interval dates and include all suffixes associated with the NMI within the same transaction.

# RM Reports proposal – removal of last sequence number

- AEMO proposes to ignore Report Last Sequence Number for MDM reports
- All results related to the MDM report request shall be returned for each RM request
- MDM report results shall be split into multiple files where a max row count has been reached
- CATS reports will not be changed
- The field will remain on the MSATS Browser pages, unless the page is changed for other reasons

# RM Reports proposal – removal of last sequence number

## What does this mean for Participants

- Only one request will need to be submitted for any MDM report - Participants may need to remove automation to request the same reports with different Report Last Sequence Numbers
- All MDM report results will be returned for each request - Participants may receive multiple MDM report response files where the number of rows exceeds the max row count
- To distinguish when a full set of data has been sent, a blank file will be sent when the number of results is equal to the max row count for an individual file.
  - Example 1: For RM9 the max row count for each individual file is 10,000. Where the report response contains 20,000 rows, 3 files will be created. File 1 and 2 containing 10,000 results each and File 3 which is blank.
  - Example 2: For RM9 the max row count for each individual file is 10,000. Where the report response contains 20,001 rows, 2 files will be created. File 1 and 2 containing 10,000 results each and File 3 containing 1 row.

# Dispatch and Operations Technical Specification

Hamish McNeish

# Status

- The Final version has been published and can be used for design, development and testing
- The following items are indicated in the document as to be updated:
  - Web Bidding screens and functions
  - 5-minute Pre-dispatch changes – this is raised as a program Change Request (CR)

# API throttling limitations

- Submission of bids
  - Limited to 1 submission per second per participantid
  - A submission can contain bids for multiple days and units
  - An error will be returned from AEMO's e-Hub if the limit is exceeded
  - The BIDOFFERFILETRK table in the Data Model imposes this limit
- Bidding GET APIs
  - limited to 1 request per second per participantid
- Participants must manage these limitations in their own systems
- For FTP AEMO manages this limitation, queueing requests internally

Are there any comments or feedback from the SWG on these limits?

# Bidding validations and error codes (1)

- Errors are now returned in the format:

```
errors: [  
  {  
    code: [string],  
    title: [string],  
    detail: [string],  
    source: [string]  
  }  
]
```

Example:

```
"code": "NEM-Bidding-Price-ExceedsMPC",  
"title": "Price Exceeds MPC",  
"detail": "Prices must not exceed the market price cap of $13,500",  
"source": "$.energyBids[?(@.duid = 'UNIT1' && @.tradingDate='2021-04-21')].energyPeriods[100].price"
```

- The source can be used to identify the JSON element causing the error
- AEMO's Web Bidding will use this

# Bidding validations and error codes (2)

- The updated “Participant Input Interface Energy - MNSP-FCAS Bid File Submission” document includes the validations and error messages
- This document was moved from the Procedures stream into the Systems stream
- The document is proposed to be renamed to:
  - Format and Validation for Energy, FCAS, and MNSP Bids and Offers

# Reallocations Draft Technical Specification

Mark Hillaby

# Update on feedback

As the feedback window closes on 14 August, feedback will be summarised and provided during the SWG meeting and then provided with the notes.

# Technical Specification – Delivery Dates

Sammy Wainrit

# 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	25 Jan 19	30 Apr 19
<b>MDM File Format and Load Process</b> - Processing/loading meter data into AEMOs MDM	Changes to support loading and processing MDFF	20 May 19 5 Aug 19	30 Sep 19
<b>MSATS 5MS Technical Specification</b> - B2M via API	Changes to introduce APIs for existing B2M messages	31 May 19	30 Sep 19
<b>MSATS 5MS Technical Specification</b> - MSATS browser and RM reports	Changes in MSATS MDM functionality for 5-minute meter data	28 Jun 19	30 Sep 19

# Technical Specifications - 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	28 Dec 18	2 Apr 19
<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	28 Jun 19	31 Jul 19

# Technical Specifications – Settlements

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

# Forward meeting plan

Sammy Wainrit

# Upcoming SWG meeting content

Date	Meeting	Proposed content
Mon, 17 Sept 2019	SWG #14	<p><b>Discussion</b></p> <ul style="list-style-type: none"> <li>Bidding Web UI Walkthrough (tentative)</li> </ul> <p><b>Technical Specifications</b></p> <ul style="list-style-type: none"> <li>Settlements: Settlements and Billing specification [feedback review]</li> </ul> <p>Feedback re what's changing in data model for metering            Feedback re what's changing in data model for EMMS            Staging – details of the November drops</p>
Mon, 21 Oct 2019	SWG #15	<p><b>Technical Specifications</b></p> <ul style="list-style-type: none"> <li>Metering: MSATS &amp; SLPs - MSATS and MDFF/MDMF final specifications [feedback review]</li> <li>Metering: B2M via API and MSATS report changes final specifications [feedback review]</li> <li>Reallocations final specification [feedback review]</li> </ul>

# Upcoming meetings

- Focus groups
  - MSATS Standing Data Scenarios to be held in early September (follow-on from June SWG)
- 5MS meetings and forum dates
  - Calendar updated to December 2019

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

# Upcoming meetings



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

Focus Groups
Dispatch
Metering
Settlements
Reconciliation
Transition
Other
Information Sessions

National Public Holiday
State Public Holiday

Meetings and forum dates:

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

# General questions

Sammy Wainrit

