

5MS & GS Systems Working Group #21

29 April 2020

Agenda

No	Time (AEST)	Agenda item	Presenter	
1	10:00 - 10:05	Welcome, introduction and apologies	Graeme Windley	
2	10:05 – 10:15	Actions update	Anne-Marie McCague	
3	10:15 – 10:25	Program update	Graeme Windley	
4	10:25 – 11:10	Proposed Industry Deferral	Numerous	
6	11:10 – 11:15	Reallocations Deployment (5 mins)	Alex Alexander	
7	11:15 – 11:20	Industry Testing Working Group update	Tui Grant	
8	11:20 – 11:30	Readiness Working Group update	Greg Minney	
9	11:30 – 11:35	Procedures update	Simon Tu	
10	11:35 – 11:40	Forward meeting plan	Graeme Windley	
Strea	am Updates			
11	11:50 – 12:00	Retail stream update (incl 2 nd Staging Rollout)	Jim Agelopoulos / Simon Tu	
12	12:00 – 12:05	Changes to AEMO's Meter Data Validation Framework	Simon Tu	
13	12:05 – 12:15	CNDS updates (presentation, 10 mins)	Blaine Miner	
14	12:15 – 12:25	Dispatch stream update (incl 2 nd Staging Rollout)	Ian Devaney	
15	12:35 – 12:40	5MS inbox feedback	Pierre Fromager	
16	12:25 – 12:35	Settlements stream update (incl 3 rd Staging Rollout)	Mark Hillaby / Tui Grant	
17	12:40	Meeting Close	Graeme Windley	



Open actions

ltem	Action required	Responsible	Action update	Ву
20.12.1	AEMO to work with Arif Syarifuddin, Powercor to confirm the rejections of duplicates and which retailers are doing so.	AEMO	Arif Syarifuddin has confirmed that retailers do not reject resent MDFF reads with the same UpdateDateTime. Full update to be provided with current SWG (#21) session.	22/04/2020
20.12.2	AEMO to circulate note on the Rejection of Metering data sent by MDP not in the MDP role. AEMO will present this item to the Transition Focus Group (TFG meeting #6) on 6 April 2020 and the following Readiness Working Group (RWG meeting #10) on 14 of April 2020 to seek the input of these groups. A dedicated follow-up session to be scheduled after this item has been presented to the TFG and RWG.	AEMO	Issue has been presented to TFG and RWG. Principle feedback from TFG is they questioned some of the used cases of where Metering data has been sent out of sequence of standing data. Full update to be provided with current SWG (#21) session.	22/04/2020
20.17.1	AEMO to provide a list of affected tables in the data model.	AEMO	All affected tables have been defined in the tech specs provided. If there is something specific here can you needing to know please email questions to the 5MS Mail box.	22/04/2020
19.7.1	AEMO to confirm the RWD proposal focus at the next SWG.	AEMO	Meter read type code. Consultation on issues paper closed Tue 31 March. Majority of responses support the concept to identify interval length. Suggestions have been received on what format this should be provided in to MSATS.	16/04/2020
19.12.1	Participants that will use the web screens to start using them in the 5MS Staging Environment to provide AEMO insight on how they will respond in the pre-production environment.	Participants	Closed, AEMO received feedback and responded	16/04/2020

Program update

Graeme Windley



Updated for 23-04-2020

Program update and current activities



AEMO program

- Overall Amber, pressures emerging in the development of Metering.
- The AEMO Internal Metering Solution milestone "Build complete" will not complete by 30 June 2020.
- New Retail plan communicated to the PCF – <u>Retail Go Live now 9 March</u> <u>2021</u>.
- The new Retail Go Live date delivers to AEMO obligations for Market Trail activities (non-withstanding the potential of a 12-month deferral).

Systems

- 5MS Reallocations successfully deployed in Production 01-04-2020, completed by a remote deployment team.
- Staging environment updated with Settlements Package 2 and combined Dispatch and Settlements Data Model Released 16 March 2020.



Readiness

- Industry Readiness Report Round 1. Participant Follow up in progress. Round 2 survey issued 14 April – closed 23 April.
- Initial meter installation plans for T 1-3,4* configuration being consolidated.
- ITWG has commenced planning for Participant testing for MDM release.



Level 1 Milestones Change Report

Current as at 03-04-2020

Current L1 Milestone

ID	Stream	Milestone	Planned Date	Expected Date	%	Comments
L1-M6		AEMO Internal Systems Development – Build Complete	30 June 2020	See below	70%	Dispatch and Settlement on time. Metering solution development likely not to be fully complete by 30 June.

Issues impacting the delivery of milestone L1-M6

- Increase in complexity of the solution (under-estimation of effort in some areas)
- Technology issues which have impacted on productivity
- Security
- COVID-19

Mitigation & Consequence

- AEMO considered the approach of prioritising the functionality required for L1-19 AEMO Metering Solution Go-Live on 7 Dec 2020. However, it was determined that this approach would not return the program status to green.
- On this basis, AEMO has determined that the milestone L1-M6 should be rebaselined to 31 August 2020 and consequently, milestone L1-19 AEMO Metering Solution Go-Live should be rebaselined to 9 March 2021
- AEMO will discuss the impact of this on participant programs at the PCF on 5 May

5MS Program Timeline (Jan '20 to Jul '21) Level 1 and External Level 2 Milestones

Current as at 02-04-2020



5MS Program Timeline (Jan '20 to Jul '21) Level 1 and External Level 2 Milestones

Current as at 24-04-2020



Proposed Industry Deferral

Graeme Windley



Principles & Clarifications

- AEMO has submitted a rule change request to AEMC proposing to delay the 5MS and GS dates as follows:
 - The commencement date for 5MS by 1 year to 1 July 2022
 - The "soft" start date for GS to 1 July 2022
 - The "hard" start date for GS to 5 February 2023
 - No change to the 5-min data delivery date of 1 December 2022 for new and replacement type 4/4A meters
 - A transitional rule to allow AEMO to change the effective date of already-determined procedures (updated for 5MS and GS) without further consultation.
- AEMO will continue to deliver the 5MS Program according to the existing program plan
- AEMO has requested an expedited rule change process
- Purpose of today:
 - Present the impacts of the proposed rule change on the AEMO system delivery
 - Present the approach to industry engagement from the 5MS Program team
 - Opportunity for industry questions relating to systems



Dispatch – Impact of 12 month Deferral



Bidding Approach

On the 1st of April 2021 participants will be able to submit 5-Min Bids, however participants impacted only when they do switch to submitting 5-Min bids.

- 1. We will accept and use 5-min Bids from 1st April 2021.
- 2. For 5-min Bids, prices will remain to be set for a trading day, with capacity/availability quantities provided for each trading interval (288 intervals). <u>Until the commencement date capacity/availability quantities must be identical within each 30-min period, and will be rejected if not</u>.
- 3. From 1st April 2021, AEMO systems will use as the current Bid the latest 5-min or 30-min Bid
- 4. 5-min Bids will be provided in JSON format.
- 5. From 5MS rule commencement, 30-min bids will be rejected as invalid.
- 6. The 5-mn Bidding web portal will be available via a new URL. The 30-min Bidding web portal will remain until rule commencement. Participants must be aware the 5-min portal will show the latest of both 5-min and 30-min Bids while the 30-min portal will only show 30-min Bids, which might not be current.



Bidding Approach (cont.)

- The following table shows the acceptance/rejection of 30-min and 5-min bids.
- Note in the table below the commencement date is not defined.

Submission Date:	Prior to 01/04/2021 (Pre-Transition)	01/04/2021 - Day before Commencement (During Transition)	From Commencement (Post-Transition)	
5-Min Bids	Rejected	Accepted	Accepted	
30-Min Bids	Accepted	Accepted	Rejected	



Retail – Impact of 12 month Deferral



Production Go Live

Settlements	AEMO settles the Market at 30 minute				
B2M Schema	Release of r39 schema. Participants who remain on r38 will not be able to access new reporting features.				
Message Protocols	FTP. New B2M via API message patterns (API-Push, API-Pull) available for	Participants looking to transition from FTP.			
MSATS Browser	Metering Data Screen: support for a register level view of metering Screens associated with 'Settlement Data' menu option have been r				
Standing Data and CRs	Standing data and CR support for TNI2, Quality and Quantity levels,	New NMI Classification codes, New Datastream Type (MITC)			
Reports	Participants on r39 schema can request new reports RM37, RM38, RM39 Participants on r38 schema can request existing reports however they will not receive the X of Y message functionality to assist with multiple message results management.				
Supported Transaction Types	MTRD	MDMT			
5- minute Interval Readings	Νο	No			
15-minute Interval Readings	No	No			
30-minute Interval Readings	Yes	Yes			
Accumulation Readings	Yes	Yes			
Metering	 Net Suffix Initiators of MTRD must ensure that the MDFF NEM12 200 record MDMDataStreamIdentifier, NMIConfiguration and the NMISuffix is accurate. AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS and the MDFF NEM12 200 record MDMDataStreamIdentifier, NMIConfiguration, NMISuffix and registers to derive a net. OR Register Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 	 Net Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 			
CNDS Data Streams for Accumulation Metering	 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 	 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 			

5/15 Min Metering Data accepted

Settlements	AEMO settles the Market at 30 minute				
B2M Schema	Release of r39 schema. Participants who remain on r38 will not be able to access new reporting features.				
Message Protocols	FTP. New B2M via API message patterns (API-Push, API-I	Pull) available for	· Participants	looking to transition from FTP.	
MSATS Browser	Metering Data Screen: support for a register level v Screens associated with 'Settlement Data' menu op	•		onality largely unchanged	
Standing Data and CRs	Standing data and CR support for TNI2, Quality and	Quantity levels,	New NMI Cla	ssification codes, New Datastream Type (MITC)	
Reports	Participants on r39 schema can request new report Participants on r38 schema can request existing rep multiple message results management.	orts however the Yellow indicates	ey will not re <mark>a delta</mark>	ceive the X of Y message functionality to assist will	
Supported Transaction Types	MTRD	from the previou	us release	MDMT	
5- minute Interval Readings	AEMO aggregates 5-minute reads to 30 minutes		No		
15-minute Interval Readings	AEMO aggregates 15-minute reads to 30 minutes		No		
30-minute Interval Readings	Yes		Yes		
Accumulation Readings	Yes		Yes		
CNDS Data Streams for Interval Metering	Vet Suffix N Initiators of MTRD must ensure that the MDFF NEM12 200 record • MDMDataStreamIdentifier, NMIConfiguration and the NMISuffix is accurate. • AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS and the MDFF NEM12 200 record • MDMDataStreamIdentifier, NMIConfiguration, NMISuffix and registers to derive a net. • OR • Register Suffix • AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS.		 Net Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 		
CNDS Data Streams for Accumulation Metering	Suffix for Consumption Energy DataS• AEMO Identifies settlement ready Metering Data using Data•• Streams defined in CNDS.•		 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 		

5MS Go Live

Settlements	AEMO settles the Market at 5 minute				
B2M Schema	Release of r39 schema. Participants who remain on r38 will not be able to access new reporting features.				
Message Protocols	FTP. New B2M via API message patterns (API-Push, API-Pull) available for	r Participants looking to transition from FTP.			
MSATS Browser	Metering Data Screen: support for a register level view of metering Screens associated with 'Settlement Data' menu option have been r MSATS Browser to support TNI2 and Multi Use NMI details	rebuilt; functionality largely unchanged			
Standing Data and CRs	Standing data and CR support for TNI2, Quality and Quantity levels, New CR rejection logic for CNDS Suffix and Type.				
Reports	Participants on r39 schema can request new reports RM37, RM38, F Participants on r38 schema can request existing reports however th multiple message results management.				
Supported Transaction Types	MTRD	MDMT			
5- minute Interval Readings	5-minute reads used directly for settlements	No			
15-minute Interval Readings	AEMO profiles 15-minute reads to 5 minutes	No			
30-minute Interval Readings	AEMO profiles 30-minute reads to 5 minutes	AEMO rejects 30-minute interval reads for settlement dates from prior to 5MS Go Live Date. AEMO accepts retrospective 30-minute interval reads for settlement dates prior to 5MS Go Live Date.			
Accumulation Readings	Yes Yes				
CNDS Data Streams for Interval Metering	 Net Suffix Initiators of MTRD must ensure that the MDFF NEM12 200 record MDMDataStreamIdentifier, NMIConfiguration and the NMISuffix is accurate. AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS and the MDFF NEM12 200 record MDMDataStreamIdentifier, NMIConfiguration, NMISuffix and registers to derive a net. OR Register Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 	 Net Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 			
CNDS Data Streams for Accumulation Metering	 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 	 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 			

GS Go Live

GS GO LIVE					
Settlements	AEMO settles the Market at 5 minute				
B2M Schema	Release of r39 schema. Participants who remain on r38 will not be able to access new reporting features.				
Message Protocols	FTP. New B2M via API message patterns (API-Push, API-Pull) availab	le for Participants looking to transition from FTP.			
MSATS Browser	Metering Data Screen: support for a register level view of metering Screens associated with 'Settlement Data' menu option have been i MSATS Browser to support TNI2 and Multi Use NMI details				
Standing Data and CRs	Standing data and CR support for TNI2, Quality and Quantity levels, New CR rejection logic for CNDS Suffix and Type. Configuration of "GLOPOOL" Participant IDs.	New NMI Classification codes, New Datastream Type (MITC)			
Reports	Participants on r39 schema can request new reports RM37, RM38, I Participants on r38 schema can request existing reports however th multiple message results management.				
Supported Transaction Types	MTRD	MDMT			
5- minute Interval Readings	5-minute reads used directly for settlements	No			
15-minute Interval Readings	AEMO profiles 15-minute reads to 5 minutes	No			
30-minute Interval Readings	AEMO profiles 30-minute reads to 5 minutes	AEMO rejects 30-minute interval reads for settlement dates from prior to 5MS Go Live Date. AEMO accepts retrospective 30-minute interval reads for settlement dates prior to 5MS Go Live Date.			
Accumulation Readings	Yes	Yes			
CNDS Data Streams for Interval Metering	 Net Suffix Initiators of MTRD must ensure that the MDFF NEM12 200 record MDMDataStreamIdentifier, NMIConfiguration and the NMISuffix is accurate. AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS and the MDFF NEM12 200 record MDMDataStreamIdentifier, NMIConfiguration, NMISuffix and registers to derive a net. OR Register Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 	 Net Suffix AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 			
CNDS Data Streams for Accumulation Metering	 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 	 Suffix for Consumption Energy Data AEMO Identifies settlement ready Metering Data using Data Streams defined in CNDS. 			

Customer Switching

- The Final Determination on Customer Switching in the NEM was published on 31 March 2020.
- Amended procedures were published alongside the determination, including:
 - MSATS CATS
 - MSATS WIGS
 - MDFF Specification (NEM 12 and NEM 13)
- Key Points to note:
 - AEMO elected not to provide an effective date for these changes.
 - The effects of COVID-19 will continue to be monitored.
 - Once determined, AEMO will communicate the effective date no less than eight months in advance.
- In addition to the changes to support the outcomes of the Customer Switching in the NEM consultation, the MSATS procedures have been redesigned such that:
 - Technical requirement specifications are moved into an independent technical document.
 - MSATS CATS and MSATS WIGS are simplified to contain business process, rights and obligations.



Settlements – Impact of 12 month Deferral



Settlements cont..

Reallocations - update

- Until the proposed rule change deferral has been approved and is in place the Reallocations systems reflect the current rules in place (5-min reallocations from 1 July 2021)
- In order to make the systems changes, if/once the rule change is applied, we will need to work with participants to unravel any 5-min reallocations which have been entered. There are 5-min reallocations in the system which have been voluntarily cancelled. There are currently no authorised 5-min reallocations in the system
- AEMO has asked all participants to contact the Prudential team in the event that any reallocations are required to be added post July 2021



Settlements cont..

Settlements Systems release in April 2021

- The Settlements and Prudentials system release is in April 2021. The system has been designed to be backwards compatible with the existing EMMS Data Model, however we always encourage participants to upgrade to the latest data model versions as they are released. After the release of the new data model for 5MS, older versions may be unsupported. The system will support all of the functionality detailed in the technical specifications for Settlements and Prudentials
- Our design allows us to independently switch on new functionality without further releases of software, this applies to:
 - 5-min settlement interval length
 - Non-financial publication of UFE
 - Global Settlement



Impact of Proposed12-month Deferral on Staging Environment

- AEMO will seek to ensure that all functionality made available in the 5MS Staging Environment up to the current industry go live of 1 July 2021 would remain available in an accessible testing environment until a new go live of 1 July 2022.
- AEMO will not support functionality in multiple testing locations. This infers that if 5-min functionality is available for testing in the Pre-Prod environment, it would not be supported in the 5MS Staging Environment.
- The 5MS Staging Environment is likely to be used for AEMO performance testing within 2020. Notice of any outages will be communicated in advance via the industry forums.



Approach to Assessment of Industry Impact

- To support participant impact assessment and response to proposed rule change the AEMO program will:
 - Develop "deferral scenarios" incorporating transition, participant testing, and metering transition approaches reflecting the proposed deferral
 - Engage the RWG and PCF (and associated focus group) to agree the scenarios
 - Provide input as required to AEMC for development of rule change consultation paper
- Approach and timings to be agreed with the PCF on 5th May
- Principles to reflect:
 - Continuation of AEMO internal program
 - Industry start dates to reflect proposed deferral
 - Support ability of participants to continue their programs where feasible
- Industry Testing with 12 month deferral:
 - Participant testing will be available in the pre-prod environment in advance of each of the relevant go-lives. This will be at 30 minute granularity plus initial opportunity for participants to test certain 5MS capabilities e.g. 5 minute bidding (in transition mode), MDFF file delivery, B2M via API
 - The functionality will remain in the pre-prod environment to support participants that wish to defer their systems development
- Metering transition activities extended to reflect deferral timeframes but reflect opportunity to continue programs if participant chooses

Reallocations Deployment

Alex Alexander



5MS Release 1: Reallocations



5MS Release 1: Reallocations

- PROD Cutover completed 1 April 2020.
- Issues & Resolutions:
 - Identified a DB scripting error arising from Tuesday's DB changes to add two new columns in the database. Once the script was run the issue was resolved in a timely manner without impacting Compliance for either AEMO or the participant.
 - A second issue arose when the Prudentials run failed to start following the Reallocation. The fix was then deployed in production at 2pm Wednesday 1 April 2020. No further issue during Thursday's BAU activity in production.
 - During PVT there was an API Service configuration error (Supplied Reallocation ID not Valid) due to the Reallocation system. Fixed immediately and the PVT test completed successfully.
 - On Thursday 2 April 2020, a participant identified a label error that was showing 'MWH' instead of '\$' in a preview reallocation pop-up. The actual values are correct but the heading has the wrong label. To be fixed in the next software deployment.



Industry Testing Working Group update

Tui Grant



Industry testing working group update

- A request was made at the ITWG and subsequent email calling for nominations for a Focus Group to assist with test plan planning and preparation of release 3.
- This Focus Group has been postponed in light of the proposed 12 month deferral and changes to release 3 milestones.
- Walk through of the changes in the Dispatch and Bidding release were presented along with the changes that the new settlements system would deliver.
- The schema changes where also presented and there was a discussion on what this may mean from a testing perspective. Any detail would be put into the test plan for release 3.



Readiness Working Group update

Greg Minney



Readiness papers - timelines

Readiness paper	RWG/ITWG/FG engagement	Draft paper	Consultation	Comments due	Final paper
Industry readiness contingency plan	Nov-2019	20-Dec	6 weeks	31-Jan-2020	1 May 2020
MSP accreditation update plan	Oct-2019	29-Nov	11 weeks	31-Jan-2020	21-Feb-2020
Bidding and dispatch transition plan	Jun-2020	10-Jul	3 weeks	31-Jul-2020	28-Aug- 2020

Strategies will be updated to reflect updated milestones



31

Workstream engagement

- Contingency Planning
 - Consideration of how "Critical Mass" operates for Market commencements
- Metering Transition Plan
 - TFG conducted 6 April 2020
 - Focus of activity:
 - Increase clarity and understanding of activities in the MTP
 - Confirm those areas where:
 - AEMO support may be required by participants
 - Implementation approaches to activities need elaborating
 - Share plans and approaches across impacted participants
 - Support ongoing participant work programs
 - CNDS clarification document provided



Workstream engagement

RWG

- RWG held 14th April
- Focussed on understanding rule change proposal and establishing basis for participant response and impact assessment
- Contingency Planning
- Consideration of how "Critical Mass" operates for Market commencements

Metering Accreditation Update Plan

- Pre-accreditation meetings have commenced
- Level of impact and timing of accreditation being established



Workstream engagement – Readiness Reporting

- Readiness Reporting Round 1 complete and <u>summary report</u> available on 5MS website
- Q&A conducted 30 March
 - Clarifications on survey interpretation
 - Summary presentation of survey results
- Round 1 Follow up activities:
 - Engagement with key participants
 - Status clarification for MTP activities, as responses were not as expected
 - N/A reported
 - On-track
 - Targeted retailer and generator follow up based on industry criticality
- Round 2 survey issued 14 April 2020
 - Response due 23 April
 - Reporting against current rule commencement timeframes
 - Inclusion of COVID-19 questions
 - Addition of MC classification for response
 - Refinement of results presentation and inclusion of trends



5MS/GS Procedures update

Simon Tu



5MS/GS-related procedure change log

Procedure issue	Status
MDFF file size and transaction limit in file	 Initial feedback to first and second stage B2B procedures consultation showed majority support for: MDFF file size 10MB MDFF 1,000 transaction limit in file non-contestable unmetered loads – use of existing B2B transactions for this family of NMIs Third round of consultation occurring for other matters, however above matters are confirmed.
Proposed procedural change to MDFF quality flag (N flag)	AEMO has submitted an ICF for ERCF consideration at March meeting (Thu 12 March). No objections presented at ERCF. Next steps: AEMO to compile a 'change information pack' for industry consultation.
Proposal for RWD[?]	Meter read type code. Consultation on issues paper closed Tue 31 March. Majority of responses support the concept to identify interval length. Suggestions have been received on what format this should be provided in to MSATS.
Removal of end user details from inventory table	AEMO will progress consultation. Dates TBC, likely to begin Aug/Sep. Follow up with ERCF rep for details.
TNI 2 for cross-boundary meters	While Participants don't have to populate the TNI2 field (AEMO will, similarly to NSP2), they will have to ensure that their systems can receive TNI2. Part of MSATS Standing Data Review. Consultation on issues paper closed Tue 31 March. Majority of responses support AEMO's proposal. Draft determination due Thu 30 Apr.
Obligation for MC to provide updated or substitution data in the cases of theft or fraud	Original ICF lodged by AGL. Discussed at ERCF March meeting. Relates to UFE calculation. Next steps: more analysis to be done and amended ICF needs to submitted before it can proceed.
New: Removal of register ID = suffix requirement	ICF lodged by AusNet to ERCF for its consideration at next meeting.
New: NCONUML objections to CR 2000/2001	ICF to be lodged by Origin. Gap in procedures to be filled. ICF proposes that if an LNSP sets up a new NCONUML NMI and assigns it to a contestable MC, then the contestable MC can object to it as the MC is always the initial MC.
Metering procedures update

Electricity Retail Consultative Forum - next meeting Fri 15 May

- 5MS/GS ICFs
- Update on MSATS standing data review
- ADL discussions ongoing
- <u>https://aemo.com.au/Stakeholder-Consultation/Industry-forums-and-working-groups/Retail-meetings/Electricity-Retail-Consultative-Forum</u>

B2B Working Group - Tue 7 Apr

- Second draft stage (3rd round) of release v3.4 of B2B procedures consultation. All initial response agree with proposals for:
 - MDFF file size 10MB
 - MDFF 1,000 transaction limit in file
 - non-contestable unmetered loads use of existing B2B transactions for this family of NMIs
- <u>https://aemo.com.au/Stakeholder-Consultation/Industry-forums-and-working-groups/Retail-meetings/B2B-Working-Group</u>



Forward meeting plan

Graeme Windley



Forward Meeting Agenda

- SWG #22 Agenda 20 May 2020
- Incl Dispatch & Settlements Staging deployments

To add items to the agenda, please contact us at <u>5MS@aemo.com.au</u>



Upcoming meetings

https://aemo.co m.au/initiatives/ majorprograms/nemfive-minutesettlementprogram-andglobalsettlement

Current as 1 April 2020



APRIL

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

MAY

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

Sa
Ju
6
13
20
27
4

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

Focus Groups
Dispatch
Metering
Settlements
Transition
Industry Testing
Reconciliation
Contingency

Other
Information sessions
General Q&A session
ational Public Holiday

State Public Holiday*

*Relevant state has been marked in a comment. WA, NT, TAS, ACT holidays have not been marked.

Retail stream update

Jim Agelopoulos



 MDFF Acceptance date adjusted to align with revised MDM Go-Live date. Production date aligned with Production milestone "L2-M10 New MDFF format accepted by AEMO" tracked via Readiness Stream.

Systems Workstream - Metering

Current as at 23-04-2020

5 MINUTE SETTLEMENT					Т	IMING				
SYSTEMS TRACKING	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	5MS Staging	Preprod	Production
METERING										
		P	ACKAGE 1 - Me	etering Dat	a & Metrolog	gy				
MDFF • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	1-Dec-19	22-Oct 20 01-Feb-21	01-Feb-21 09-Mar-21
	1		PACKAGE	E 2 - MSATS	& SLPs					
Transition • MSATS 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 Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	30-Sep-19	-	1-Dec-19	22-Oct-20 01-Feb-21	01-Feb-21 09-Mar-21
			PACKAGE	3 – Miscel	laneous					
B2M via API MSATS Technical Specification	Oct-18	-	Apr-19	9-May-19	31-May-19	30-Sep-19	31-Jul-20	N/A	22-Oct-20 01-Feb-21	07-Dec-20 09-Mar-21
MSATS Browser (LVI) changes • MSATS Technical Specification	Aug-18	-	May-19	9-May-19	28-Jun-19	30-Sep-19	31-Jul-20	31 Jul 20 15-Jun-20	22-Oct-20 01-Feb-21	07-Dec-20 09-Mar-21
MSATS Report changes • MSATS Procedures MDM Procedure • MDM File Format and Load Process (User Guide) • MSATS Technical Specification General Process & Document Clean-up	Oct-18	-	Apr-19	Apr-19	28-Jun-19	30-Sep-19	-	31-Jul-20 31-Aug-20	22-Oct-20 01-Feb-21	07-Dec-20 09-Mar-21

1. New 'Release 2' Staging software drop to expose additional functionality at earlier date in Staging environment

2. Revised 'Release 3' Staging software drop to expose remaining end-state functionality in Staging environment

AEMO

 Pre-Production date(s) adjusted during April '20 AEMO replan. Date aligned with "L2-M12 Industry test preparation completed by AEMO for MDM and B2M Go-Live" milestone tracked via Readiness Stream. Production date(s) adjusted during April '20 AEMO replan. Date aligned with "L1-19 AEMO Metering Solution - Go-Live" milestone tracked via Readiness Stream.

Level 2 Milestones – Metering

Current as at 23-04-2020

Domain	Initiative		20	Ž			2020 <mark>چ</mark>		2021				
		Q1	Q2	Q3 Q3	Q4	Q1	Q2	Q: <mark>Z-</mark>	Q4	Q1	Q2	Q3	Q4
Metering			L2-M2 L2-M1	L2-M3	L2-M5		L2-M6	L2-M7					
		Jan Eeh Mar	Apr May Jup	lul Aug Sent C		lan Eeh Mar	Apr May Jup	Jul Aug Sent	Oct Nov Dec	lan Eeb Mar	Apr May Jup		Oct Nov Doc

	Key Mile	estones (Program)			
	ID	Milestone	Target Date	Expected Date	Status
Milestone complete	L2-M1	AEMO internal metering solution – solution design complete (internal)	31-May-2019	17-Jun-2019	Complete
Milestone on track	L2-M2	Final technical specifications for Package 1 published by AEMO	30-Jun-2019	30-Apr-2019	Complete
Milestone at risk Milestone not achieved	L2-M3	Final technical specifications for Package 2 published by AEMO	30-Sep-2019	30-Sep-2019	Complete
	L2-M4	Final technical specifications for Package 3 published by AEMO	30-Sep-2019	30-Sep-2019	Complete
	L2-M5	Software Release 1 for Packages 1 & 2 in 5MS Staging Environment	01-Dec-2019	01-Dec-2019	Complete
	L2-M6	Software Release 2 for Package 3 in 5MS Staging Environment	15-Jun-2020	15-Jun-2020	New Staging milestone to release subset of end-state functionality earlier.
	L2-M7	AEMO internal metering solution – build complete (internal)	30-Jun-2020	31-Aug-2020	Date adjusted post AEMO Apr '20 replanning.
	L2-M8	Software Release 3 for Package 3 in 5MS Staging Environment	31-Jul-2020	31-Aug-2020	Date adjusted post AEMO Apr '20 replanning.

43

Retail – Functionality in Staging Release 2

Objectives

- Allow all Participants to confirm connectivity of their test environments with the AEMO 5MS Staging Environment.
- Allow MDPs to confirm that MTRD CSV MDFF created by their systems for NEM Settlements and TUOS billing are able to pass new AEMO validations for NEM13 and NEM12 (30 min, 15 min and 5 min).
- Allow MDPs to confirm that MDMT CSV MDMF created by their systems for NEM Settlements are able to pass AEMO validations for Basic, Interval and Profile meters.
- Allow MDPs to validate FTP or API message exchange with the NEMMCO participant ID for MTRD and MDMT MeterDataNotifications.
- Allow Participants to confirm AEMO ingested meter reads



Retail – Functionality in Staging Release 2

Scope of functionality

Supported Functions	Staging R	elease 1	Staging Release 2			
	MTRD MDMT		MTRD	MDMT		
Meter Types	NEM12	No	NEM12 and NEM13	Interval, Profile and Consumption		
FTP Message Exchange	Yes	No	Yes	Yes		
API Push Message Exchange	No	No	Yes	Yes		
API Pull Message Exchange	No	No	No	No		
View AEMO Ingested Meter Reads	No	No	MSATS Browser > Metering Data screen	MSATS Browser > Metering Data screen		
Support for Transaction Bundling	No	No	Yes	Yes		
aseXML schema support	Current only	No	Current and Superseeded	Current and Superseeded		



Retail – Functionality in Staging Release 2

Assumptions/Constraints

- B2B message exchange shall not be supported.
- Only message exchange for MTRD Meter Data Notification where the <To> Participant ID is 'NEMMCO' shall be supported.
- B2M CATS CR's shall not be supported.
- Standing Data shall be static and shall consist of a Production data snapshot.
- Connectivity is only via AEMO's MarketNet.
- The API-Pull protocol preference shall not be supported.
- Participants need to notify the AEMO 5MS project to update their protocol preference or preferred MDMT or MTRD schema version.



Changes to AEMO's Meter Data Validation Framework

Simon Tu



Changes to AEMO's Meter Data Validation Framework

AEMO's considerations

- In establishing the new validation framework for B2M MTRD, AEMO reviewed the following B2M MDMT rejection rules:
 - a) Rejecting Metering Data for Data Streams not established in CATS NMI Datastream (CNDS).
 - b) Rejecting Metering Data for NMIs not established in CATS NMI Data (CND).
 - c) Rejecting Metering Data sent by a participant not associated to a NMI in CATS NMI Participant Relationships (CNPR)

AEMO's findings

- AEMO will be able to accommodate scenario (a) and (b) and will, instead of rejecting the metering data, accept and create an informational warning in the associated Transaction Acknowledgment.
- AEMO unfortunately cannot accommodate scenario (c) and will continue to reject Metering Data sent by a participant not in the CNPR role.



CNDS updates

Blaine Miner



Context & Purpose

- Context
 - With the introduction of the 5MS & GS Rule requirements, a more granular and global source of reference data is required.
 - To support this requirement, Net CNDS records will be gradually replaced by Register Level CNDS records.
 - AEMO will be publishing a clarification document shortly to provide specific guidance on how this transition will occur.
- Purpose
 - The purpose of the document is to provide additional context and clarification regarding the maintenance and population of the CATS NMI Datastream ('CNDS') table. These clarifications are intended to support the appropriate completion of required transitional and operational activities leading up to the 5MS Rule commencement.
 - This document also seeks to clarify MDP B2M data delivery concepts relating to the implementation of AEMO's new Meter Data Management (MDM) platform.
- Audience
 - This document is primarily intended for Meter Data Providers (MDPs) affected by the Five-minute settlement (5MS) and Global settlement (GS) market reforms.
 - It assumes the reader has a good level of knowledge about NEM metering data systems and processes.

Table of Contents

This clarification document will include:

- Purpose
- Background
 - 5MS Rule
 - CATS CNDS Table
 - Relevant Metering Dates
 - CNDS Procedural references
 - Potential Procedural Updates
- CNDS Records
- CNDS DataStreamType Codes
- ADL in CNDS
- CNDS & Meter Data Delivery
- Feedback
- Appendix A: Scenarios Net & Register level CNDS records



Examples of some of the clarifications

- Active Net CNDS records will still exist in some instances post 5MS commencement
 - AEMO will be consulting with industry at some point in the future on the introduction of a 'Net' CNDS record 'sunset' clause
- When creating Register Level Interval CNDS records, all of the Net CNDS records must have a deactivation date of the day before the effective date of the associated Register Level CNDS records
- Net CNDS records must reflect a DatastreamType of 'I' (only).
- An MDP must send AEMO Meter data where a NET CNDS record is active (regardless of the NMI status)
- Net CNDS records must not be created from the 5MS commencement with an effective date equal to or greater than the 5MS commencement date
- A Register Level Interval CNDS record must not be replaced by a Net CNDS record
- Register Level Interval CNDS records must reflect a DatastreamType code of 'I', 'P' or 'N'
- Once an Register Level Interval CNDS record has been created, an MDP must send AEMO meter data in MDFF from its effective date
- AEMO's preference is for MDPs to transition Net records to Interval Register level CNDS records as soon as possible from the date AEMO introduces its MDFF capability

Examples of some of the content – cont.

- The tables below provide the valid 'combinations' between DataStreamType codes and the first character of the 'ElectricityDataStream/Suffix' value.
- With consideration to the physical configuration of an individual meter and/or Metering Installation, DataStreamSuffixes highlighted in GREEN reflect AEMO's allowable combinations from the AEMO MDFF Go-Live and not prior to this date.

						_			
	First cha	racter							2 nd character
	Ave	DatastreamType	Master	DatastreamType	Check	DatastreamType	Net	Datastream	
								Туре	
IMPORT kWh	А	I or N for Virtual NMI's	В	l or N for Virtual NMI's	С	Ν	N	l or P	Meter
EXPORT kWh	D	l or N for Virtual NMI	E	I, P or N for Virtual NMI's	F	N			numbers or
IMPORT kvarh	J	Ν	K	Ν	L	Ν	Х	N	measuring
EXPORT kvarh	Р	Ν	Q	Ν	R	Ν			elements are
KVAh	S	N	Т	Ν	U	Ν			to be 1-9 then
Power Factor pF			G	Ν					A-H, J-N, P-Z
Q Metering Qh			Н	Ν	Y	Ν			
Par Metering parh			М	Ν	W	Ν			
VOLTS (or V ² h) or Amps (A ² h)			V	N	Z	Ν			

Net & Register Interval CNDS Records

Accumulation Register Level CNDS Records

First Cha	racter	Second Character	Datastream Type
1	First Datastream	Meter numbers are to be 1-9	С
2	Second Datastream	then A-H, J-N, P-Z.	
3	Third Datastream		
4	First controlled load Datastream		
5	Second controlled load Datastream		
6	Third controlled load Datastream		
7	First LNSP/ENM defined Datastream		
8	Second LNSP/ENM defined Datastream		
9	Third LNSP/ENM defined Datastream		

Examples of some of the content – cont.

#	Scenario Description	Allowable CNDS Record Type	AEMO Meter Data delivery: File Type	<u>Example -</u> CNDS Record: Created On date	<u>Example -</u> CNDS Record: Effective Start date
1	Change request created before AEMO <u>MDM</u> Go-Live with an effective date before AEMO <u>MDM</u> Go-Live	Net (Interval meter) Register (Basic meter)	MDMF (Interval and Accumulation)	11 Nov 2020	10 Nov 2020
2	Change request created after AEMO <u>MDM</u> Go-Live, effective dated before AEMO <u>MDM</u> Go-Live	Net (Interval meter) Register (Basic meter)	MDMF (Interval and Accumulation)	12 Jan 2021	3 Nov 2020
3	Change request created after AEMO <u>MDM</u> Go-Live, effective dated after AEMO <u>MDM</u> Go- Live but before AEMO <i>MDFF</i> Go-Live	Net (Interval meter) Register (Basic meter)	MDMF (Interval and Accumulation)	12 Jan 2021	25 Jan 2021
4	Change request created after AEMO <u>MDFF</u> Go-live, effective dated before AEMO <u>MDM</u> Go-Live	Net or Register (Interval meter) Register (Basic meter)	MDMF (Interval (up until 5MS commencement) and Accumulation) or MDFF (NEM12 or NEM13)	10 Feb 2021	5 Nov 2020
5	Change request created after AEMO <u>MDFF</u> Go-Live, effective dated after AEMO <u>MDM</u> Go- Live but before 5MS Go-Live	Net or Register (Interval meter) Register (Basic meter)	MDMF (Interval (up until 5MS commencement) and Accumulation) or MDFF (NEM12 or NEM13)	12 Mar 2021	31 Mar 2021
6	Change request created after AEMO MDFF Go-Live, effective dated after AEMO MDFF Go-Live but before 5MS Go-Live	Net or Register (Interval meter) Register (Basic meter)	MDMF (Interval (up until 5MS commencement) and Accumulation) or MDFF (NEM12 or NEM13)	14 Apr 2021	15 May 2021
7	Change request created after 5MS Go-Live, effective dated before 5MS Go-Live	Register (Interval meter) Register (Basic meter)	MDMF (Interval (up until 5MS commencement) and Accumulation) or MDFF (NEM12 or NEM13)	6 July 2021	4 Mar 2021
8	Change request created after 5MS Go-Live, effective dated after 5MS Go-Live	Register (Interval meter) Register (Basic meter)	MDFF (NEM12 or NEM13)	10 Oct 2021	9 Sept 2021

Dispatch stream update

lan Devaney



Systems Workstream – Dispatch & Operations

5 MINUTE SETTLEMENT	TIMING									
SYSTEMS TRACKING	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	5MS Staging	Preprod	Production
DISPATCH and OPERATIONS			· · · · · · · · · · · · · · · · · · ·		· · · ·			· · · ·		•
			PACKAGE 1 - E	Bidding FTF	and API					
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
			PACKAGE 2	- Bidding V	Veb UI					
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	31-Jul-19	16-Dec-19	29-Nov-19	Nov-20	Mar-21
		РАСК	AGE 3 - Dispato	ch, Pre-dis	oatch and PA	SA		·		·
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	2-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	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
		PA	CKAGE 4 - Pric	ing and Mi	scellaneous					
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	-	-	-	-	-	-	-	-	-
			PACKAGE 5	- Full Data	Model					
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	31-Jan-20	16-Mar-20	29-Nov-19	Nov-20	May-21

Level 2 Milestones - Dispatch

Current as at 03-04-2020

Domain	Initiative	2019			2020				2021				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Dispatch			L2-D1	L2-D2 L2-D12	L2-D3	L2-D13	L2-D5 L2-D4						
		Jan Feb Mar	Apr May Jun	Jul Aug Sept	Oct Nov Dec	Jan Feb Mar	Apr May Jun	Jul Aug Sept	Oct Nov Dec	Jan Feb Mar	Apr May Jun	Jul Aug Sept	Oct Nov Dec

	Key Milestones (Program)									
	ID	Milestone	Target Date	Expected Date	Status					
	L2-D1	Final technical specifications for Package 1 published by AEMO	2-Apr-2019	2-Apr-2019	Complete					
complete	L2-D2	Final technical specifications for Package 2 published by AEMO	31-Jul-2019	31-Jul-2019	Complete					
on track	L2D12	Final technical specifications for Package 4 published by AEMO	31-Jul-2019	31-Jul-2019	Complete					
at risk	L2-D3	Software drop for Packages 1,2 & 3 in 5MS Staging Environment	29-Nov-2019	29-Nov-2019	Complete					
not achieved	L2-D13	Final technical specifications for Package 5 published by AEMO	31-Jan-2020	16-Mar-2020	Complete					
	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						



Milestone Milestone Milestone

Dispatch – Functionality in Staging Release 2

• Administrative Price Cap

- This will be calculated on a 5-min basis over the last seven days.
- The price will change more frequently because of the average from the sum of 2,016 pricing periods.

• Pricing DDL

- Provides the NEM Report Config.
- Price will now be in 5-min and no longer 30-min.
- The price will change more frequently because of the average from the sum of 2,016 pricing periods.



5MS Inbox feedback

Pierre Fromager



5MS Inbox Feedback

- Participant questioned extent of bidding functionality compared to original discussion in 2018.
 - Bidding is fit for purpose, with some improvements.
- "Following 5MS (and any updates to the Data Model), is there expected to be any changes to the availability of price and demand data, and / or the method in which it is made available (i.e. above URL / .csv format)?"

• No

 Feedback on Dispatch and Operations Tech Spec around DISPATCHOFFERTRK and PREDISPATCHOFFERTRK being in the wrong 'package'.

• This is being addressed.



Settlements stream update

Mark Hillaby



Settlements Program

- Settlements and billing entered Staging in March and we have been running on 30-min functionality
 - The successful execution of 2019Wk16 Rev 2 in the staging environment completes the 30-min phase of activities in the staging environment. The next several weeks will be focused on:
 - Participant engagement with respect to the first 4 weeks of staging activity for Settlements
 - Ensuring everything is in place for the Prudentials release to staging in May 2020
 - Preparing for the 5-minute and Global Settlement activities in staging, currently scheduled for June 2020



Systems Workstream - Settlements

Current as at 15-04-2020

5 MINUTE SETTLEMENT TIMING											
SYSTEMS TRACKING	Internal	Focus/Group	SWG	External	Draft	Final	User	5MS Staging	Preprod	Production	
	HLIA		Engagement	HLIA	Tech Spec	Tech Spec	Guides				
SETTLEMENTS											
	PACKAGE 1 - Reallocations										
Reallocations Dec-18 Nov-18 Dec-18 Mar-19 31-Jul-19 15 Oct 19 1-Nov-19 1-Mar-20 1							1-Apr-20				
			PACKAGE 2 - Se	ettlements a	and Billing						
Settlements	Oct-18	Nov-18	Dec-18	Mar-19	30-Aug-19	20 Dec 19	-	16 Mar 20	Nov-20	Apr-21	
Billing	Oct-18	Nov-18	Dec-18	Mar-19	30-Aug-19	20 Dec 19	-	16 Mar 20	Nov-20	Apr-21	
		P/	ACKAGE 3 - Prud	dentials and	l Estimation						
Prudentials	Sep-18	Nov-18	Dec-18	Mar-19	31-Oct-19	31 Jan 20	15 May 20	15 May 20	Nov-20	Apr-21	
Estimation	Oct-18	Nov-18	Dec-18	Mar-19	31-Oct-19	31 Jan 20	-	15 May 20	Nov-20	Apr-21	
Full Data Model	Refer DISPATCH										



63

Staging Environment Update

- Settlements Package 3 was deployed in the 5MS Staging Environment 16 March 2020. So far:
 - Week 1: 16th March to 20th March 30 minute Prelim 2019Wk24 Completed
 - Week 2: 23rd March to 27th March 30 minute Finals 2019Wk25 and 2019Wk24 Completed
 - Week 3: 30th March to 3rd April 30 minute Revision 1 2019Wk25- Completed
 - Week 4: 6th April to 10th April 30 minute Revision 2 2019WK16- Completed
 - Produced Tax Invoices, RCTI's, Statements, and Reconciliation (SR, etc) reports for both runs
 - Produced Data Interchange files for both runs
 - Identified an integration issue between Settlements Direct and Invoicing
 - The invoicing engine has been updated and a new version tested and released into the Staging Environment
 - Some ongoing work is still required on Settlements Direct to finalise the issue
 - Until this issue is finalised, SR reports will not be available on the Settlements Direct portal without manual intervention
 - All other reports (Tax Invoice etc) are available on the Settlements Direct portal
- Based on feedback at the next ITWG we will proceed with the transition and 5-minute invoices.
- We have now completed the Q&A sessions have been held for any market participants on the last drop in 5MS Staging. More sessions will be set up as part of the next deliverable into Staging in May.
- Post the completion of 5-minute invoices a review will then be undertaken with participants and a plan for global settlement examples will be published.



