



5MS Systems Working Group

SWG#8 - Monday, 18th March 2019

AEMO Offices:

Level 9, 99 Gawler Place, Adelaide

Level 10, 10 Eagle Street, Brisbane

Level 22, 530 Collins Street, Melbourne

Level 2, 20 Bond Street, Sydney

WebEx: <http://aemo.webex.com>

ACCESS CODE: 570 716 221 PASSWORD: MD667237 (63667237 from phones)

Agenda (Melbourne Time)

NO	TIME	AGENDA ITEM	RESPONSIBLE
Preliminary Matters			
	10:00am - 10:05am	Welcome, introduction and apologies	Hamish McNeish (AEMO)
Matters for Noting			
	10:05am – 10:15am	Minutes and Actions from last meeting	Hamish McNeish (AEMO)
	Systems Workstream Updates		
	10:15am – 10:25am	Retail Stream update	Jim Agelopoulos (AEMO)
	10:25am – 10:35am	Settlements Stream update	Bhanu Rajan (AEMO)
	10:35am – 11:45am	Dispatch Stream update	Hamish McNeish (AEMO)
Matters for Discussion			
	10:45am – 11:15am	AEMO Test Strategy	Tui Grant (AEMO)
	11:15am – 11:30am	Dispatch – Debrief on Focus Group	Pierre Fromager (AEMO)
	11:30am – 12:15pm	Metering – Debrief on Focus Group	Simon Tu (AEMO)
	12:15pm – 12:30pm	Dispatch Tech Spec – Feedback summary	Hamish McNeish (AEMO)
Other business			
	12:30pm – 12:40pm	General questions	Hamish McNeish (AEMO)
	12:40pm – 12:45pm	Forward meeting plan	Hamish McNeish (AEMO)

Matters for Noting

Hamish McNeish

Open Actions

- Meeting notes with actions have been emailed and published
- Any feedback?

Item	Topic	Action required	Action Update	Responsible	By
1.6	Participant bandwidth implications	AEMO to provide assessment on bandwidth/networking impacts.	AEMO still reviewing	AEMO	Feb 19
3.2	Bidding data model transition	AEMO to include in data model focus group discussion, date to be scheduled.	Proposed for Feb-19	AEMO	Feb 19
7.1	SWG Website to be updated to include links	Add links to Consultations, specifications, HLIA, data models etc -all key Industry artefacts	Proposed for March -19	AEMO	18/3/19
7.2	Market trial proposal	AEMO's proposal for market trials & industry role to be documented and published to SWG website	Proposed for April-19	AEMO	18/4/19
7.5	Bidding Tech Spec actions:	Additional content to be added to the Technical Specification - Add URM rights to the tech spec - Add additional API compression support	Proposed for March-19	AEMO	18/3/19
7.6	Request for change password API	AEMO to investigate adding an API to allow resetting of a URM useraccount password (as used by API's)	Proposed for March-19	AEMO	18/3/19
7.8	Risk of delays to AEMO's system/functional release impacting participants ability to be ready for market trials and SMS go live 1 July 2021	Raise to the PCF for adding a risk (if it doesn't already exist) and working through mitigations	Proposed for March-19	AEMO	8/3/19
7.9	Support of participant domain names	rather than API addresses, especially with systems now moving to the cloud AEMO to investigate what is possible, and provide an update at the next SWG.	Proposed for March-19	AEMO	18/3/19

Actions to Close

Item	Topic	Action required	Action Update	Responsible	By
3.3	Bidding data model tables	AEMO to include in data model focus group discussion, date to be scheduled.	Completed in Dispatch FG 15-Feb	AEMO	Feb 19
7.1	SWG Website to be updated to include links	Add links to Consultations, specifications, HLIA, data models etc -all key Industry artefacts	Links added to Website	AEMO	18/3/19
7.3	Provide a table of stream milestones	As an addendum to the Plan on a page, a table of the key milestones, dates and a description of the milestones should be provided by AEMO. e.g. Dispatch Prod 1 & 2, Drop 4 in Sandbox	Included in SWG pack for 18/3/19	AEMO	18/3/19
7.4	Update Deliverables table	Revised dates and new format to be updated for each stream as appropriate and circulated to SWG attendees	Included in SWG pack for 18/3/19	AEMO	18/3/19
7.7	MDFF specification information	AEMO to send link to the MDFF specification for five minute settlements to SWG representatives	Link added to Website	AEMO	18/3/19
7.8	Risk of delays to AEMO's system/functional release impacting participants ability to be ready for market trials and SMS go live 1 July 2021	Raise to the PCF for adding a risk (if it doesn't already exist) and working through mitigations	A similar risk was also raised at the last PCF. This has been added to the program risk register.	AEMO	8/3/19

5MS IT stream Composition

System Workstream Role Update

- Ian Devaney – has been appointed as Dispatch Lead commencing 4-March.

5MS IT Team composition is;

- Mal Borschman – 5MS IT Manager
- Hamish McNeish – 5MS Technical Advisor
- Systems Workstream Leads
 - Retail Jim Agelopoulos
 - Settlements Bhanu Rajan
 - Dispatch Ian Devaney
 - Infrastructure Grant Collins

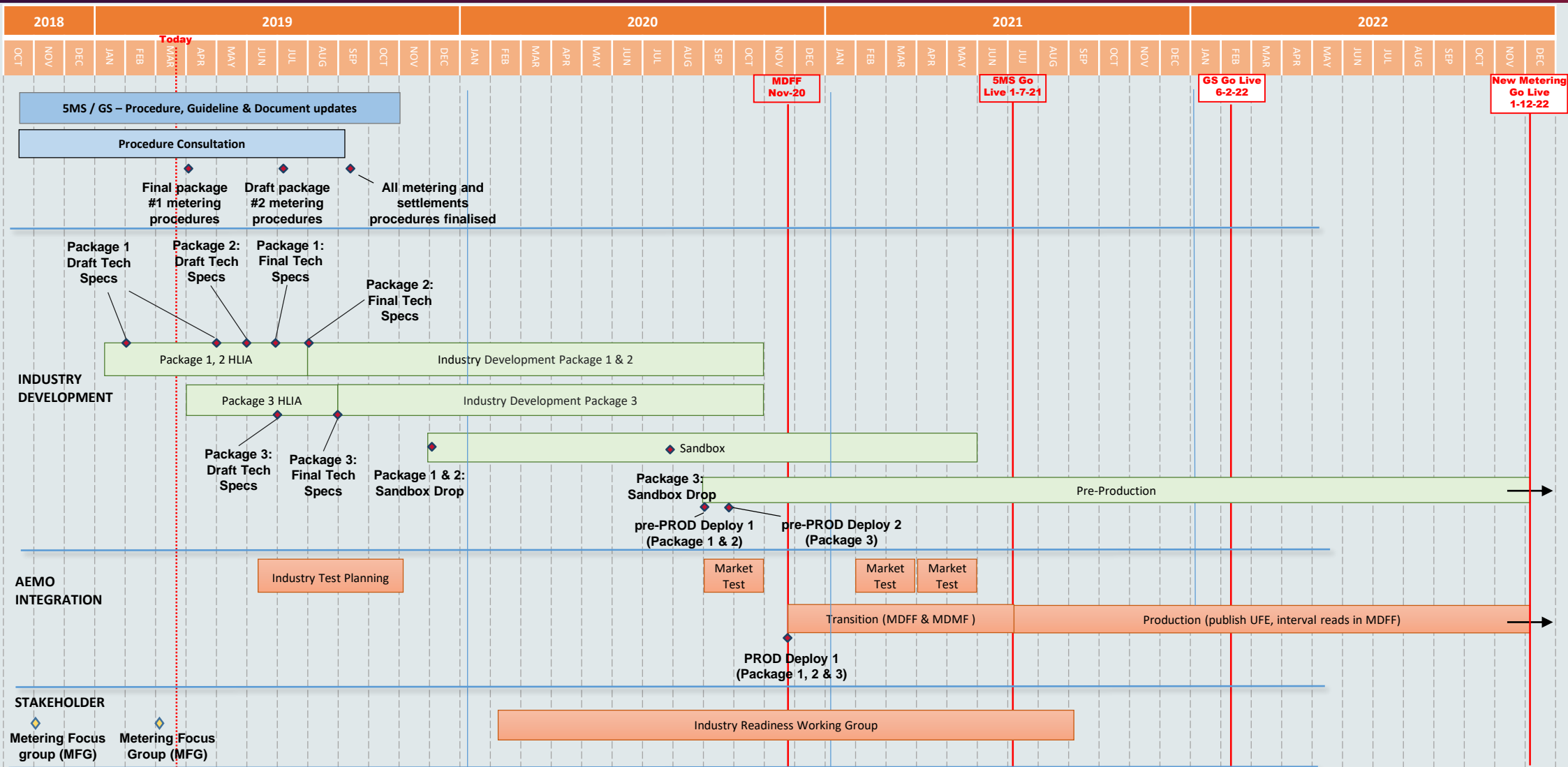
System Workstream – Metering

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
METERING											
Package 1	Transition	Aug-18	Sep-18	Aug-18	Nov-18	Apr-19	Jun-19	-	Dec-19	-	-
	MDFF • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	Dec-19	Sep-20	Nov-20
	Meter Data - MDFF and MDMF • MDM File Format and Load Process • MSATS Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	Apr-19	Jun-19	-	Dec-19	Sep-20	Nov-20
Package 2	B2M to eHub Technical Guide (new)	Oct-18	-	Mar-19	Feb-19	May-19	Jul-19	-	Dec-19	Sep-20	Nov-20
Package 3	MSATS Browser (LVI) Changes • Guide to MSATS Web Portal • MSATS Technical Specification	Aug-18	May-19	May-19	Apr-19	Jun-19 TBC	Aug-19 TBC	TBC	-	Sep-20	Nov-20
	MSATS Report Changes • MSATS Procedures MDM Procedure • MDM File Format and Load Process • MSATS Technical Specification	Oct-18	May-19	May-19	Apr-19	Jun-19 TBC	Aug-19 TBC	-	-	Sep-20	Nov-20

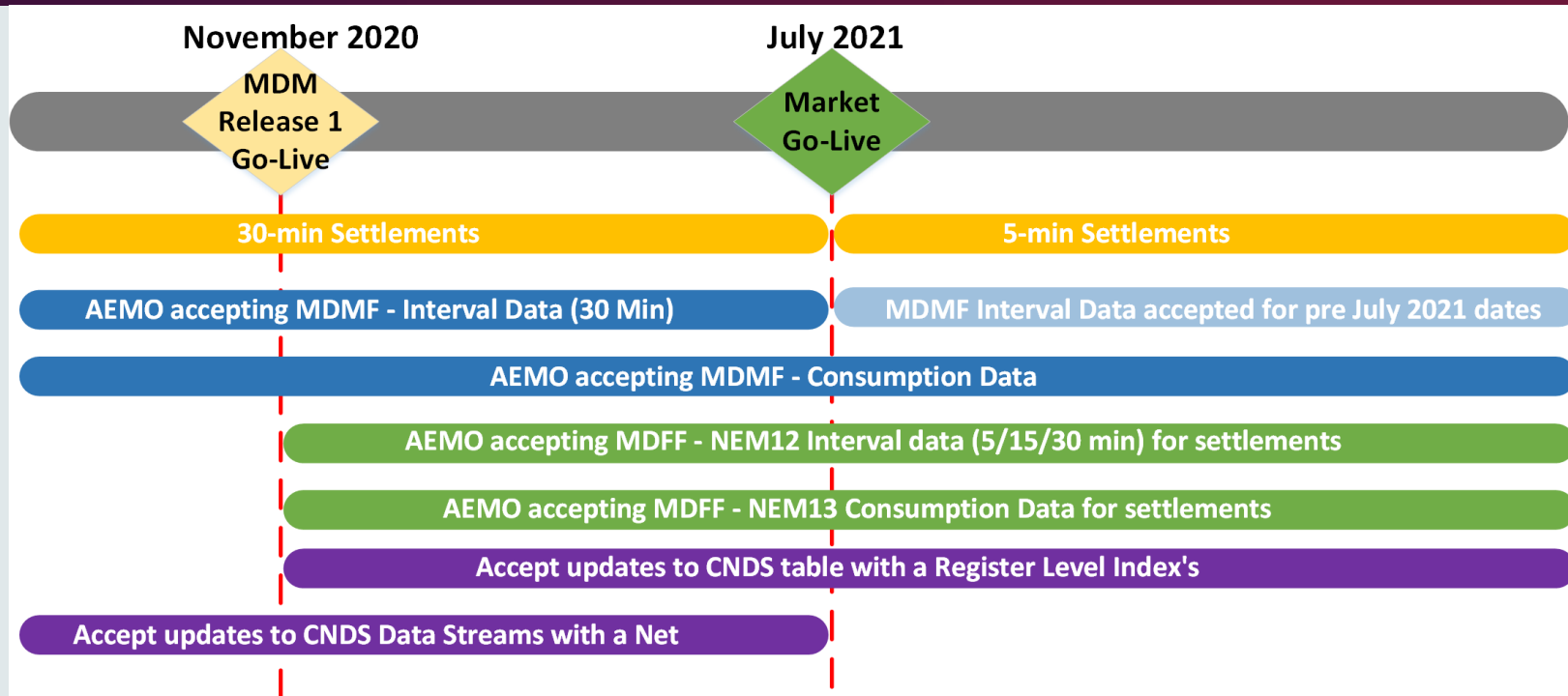
5MS Participant Timeline – Metering



Level Two Milestones - Metering

Level	Workstream	Milestone	Description	Date	Status	Notes
2	Metering	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to Transition, Meter Data – MDFF, B2M MDFF (API and FTP) as a result of 5MS and GS available to participants.	30-Jun-2019	Provisional	On Track
2	Metering	Final Technical Specifications for Packages 2 published by AEMO	Technical Specification for changes to and Standing Data and validations, and B2M via eHub, as a result of 5MS and GS available to participants.	31-Jul-2019	Provisional	On Track
2	Metering	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for changes to the MSATS Browser (LVI) and MSATS Report Changes as a result of 5MS and GS available to participants.	31-Aug-2019	Provisional	On Track
2	Metering	Software Drop for Packages 1 & 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Transition, Meter Data – MDFF, B2M MDFF (API and FTP), Standing Data and validations, B2M via eHub.	01-Dec-2019	Provisional	On Track
2	Metering	Agreement on requirements for Accreditation & Market Trails	Program agreement of the Accreditation requirements and process, and on market testing requirements and process.	20-Jan-2020	Provisional	Date to be approved by PWG
2	Metering	AEMO internal MDM solution – participant testing	Participant regression testing on for new MDM build begins	01-Sep-2020	Provisional	Detail TBC; full market not req'd
2	Metering	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	
2	Metering	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	Tentative	Content and timing of Market Trials TBD
2	Metering	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 Trail scenarios	30-Nov-2020	Tentative	Content and timing of Market Trials TBD
2	Metering	Market Trials conclude	All relevant Market Participants have passed UAT to submit five-minute read data.	31-May-2021	Tentative	Content and timing of Market Trials TBD

Metering Transition



- **1 November 2020**
 - AEMO begins to accept MDFF files
 - Where MDFF is now being set AEMO begins accepting CNDS Register Reads
- **1 November 2020 to 30 June 2021**
 - 5 and 15 minute reads received by AEMO will be aggregated by AEMO to 30 minutes to support 30 minute Settlements
- **1 July 2021**
 - AEMO will profile received 15 and 30 minute reads to 5 minute resolution for Settlement
 - AEMO will stop accepting new MDMF interval reads
 - AEMO will continue to accept MDMF consumption reads
 - AEMO will stop accepting Change Requests for CNDS Net Datastreams

System Workstream – Dispatch

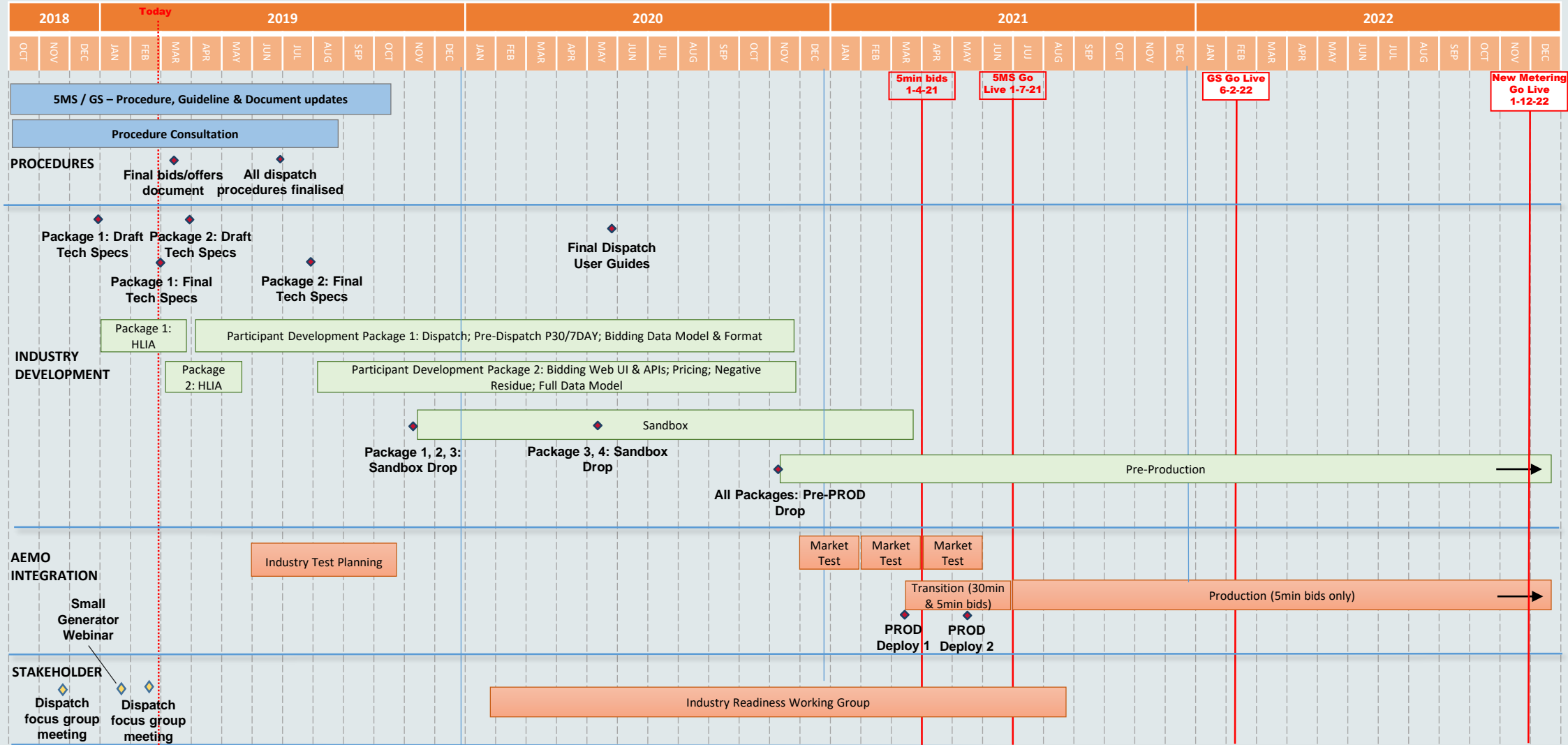
Hamish McNeish

System Workstream - Dispatch

- Current estimated timeline

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagemen t	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	5MS Staging	Preprod	Production
DISPATCH										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	Mar-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	Jul-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	Mar-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	Mar-19	Oct-19	Nov-19	Nov-20	Mar-21
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	Mar-19	-	Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	Mar-19	-	Nov-19	Nov-20	Mar-21
Predispatch P5	Nov-18	Oct-18	Nov-18	TBC	TBC	TBC	-	TBC	Nov-20	May-21
Trading Price / Price Revision	Aug-18	-	Feb-19	Nov-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Administered Pricing and CPT	Aug-18	-	Feb-19	Dec-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Suspension Pricing	Sep-18	-	Feb-19	Dec-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Negative Residue Management	Sep-18	-	Feb-19	Dec-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Full Data Model	Sep-18	Feb-19	Mar-19	Mar-19	Mar-19	Jul-19	Oct-20	-	Nov-20	May-21

5MS Participant Timeline - Dispatch



Level Two Milestones - Dispatch

Level	Workstream	Milestone	Description	Date	Status	Notes
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.	29-Mar-2019	Firm	Revised
2	Dispatch	Final Technical Specifications for Package 2 published by AEMO	Technical Specification for changes to the Bidding Web UI and APIs as a result of 5MS and GS available to participants.	31-Jul-2019	Provisional	On Track
2	Dispatch	Software Drop for Packages 1,2 & 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Dispatch, Pre-dispatch P30/7DAY, ST PASA, Bidding Data Model and Bidding Format, Bidding Web UI and APIs and Pre-dispatch P5.	29-Nov-2019	Provisional	On Track
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 and the Full Data Model (including Settlements)	15-May-2020	Tentative	Date to be approved by SWG
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	Tentative	Content and timing of Market Trials TBD
2	Dispatch	Market Trial preparation completed	AEMO has software deployed to the pre-production environment and is ready to deliver the agreed Market Trail scenarios	30-Nov-2020	Tentative	Content and timing of Market Trials TBD
2	Dispatch	5-min Bidding Phased Go Live Begins	Participants can begin submitting 5-min bids to the market	01-Apr-2021	Provisional	On track
2	Dispatch	Market Trial conclude	Market Trial scenarios related to dispatch have been completed	31-May-2021	Tentative	Content and timing of Market Trials TBD
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	

System Workstream – Settlements & Operations

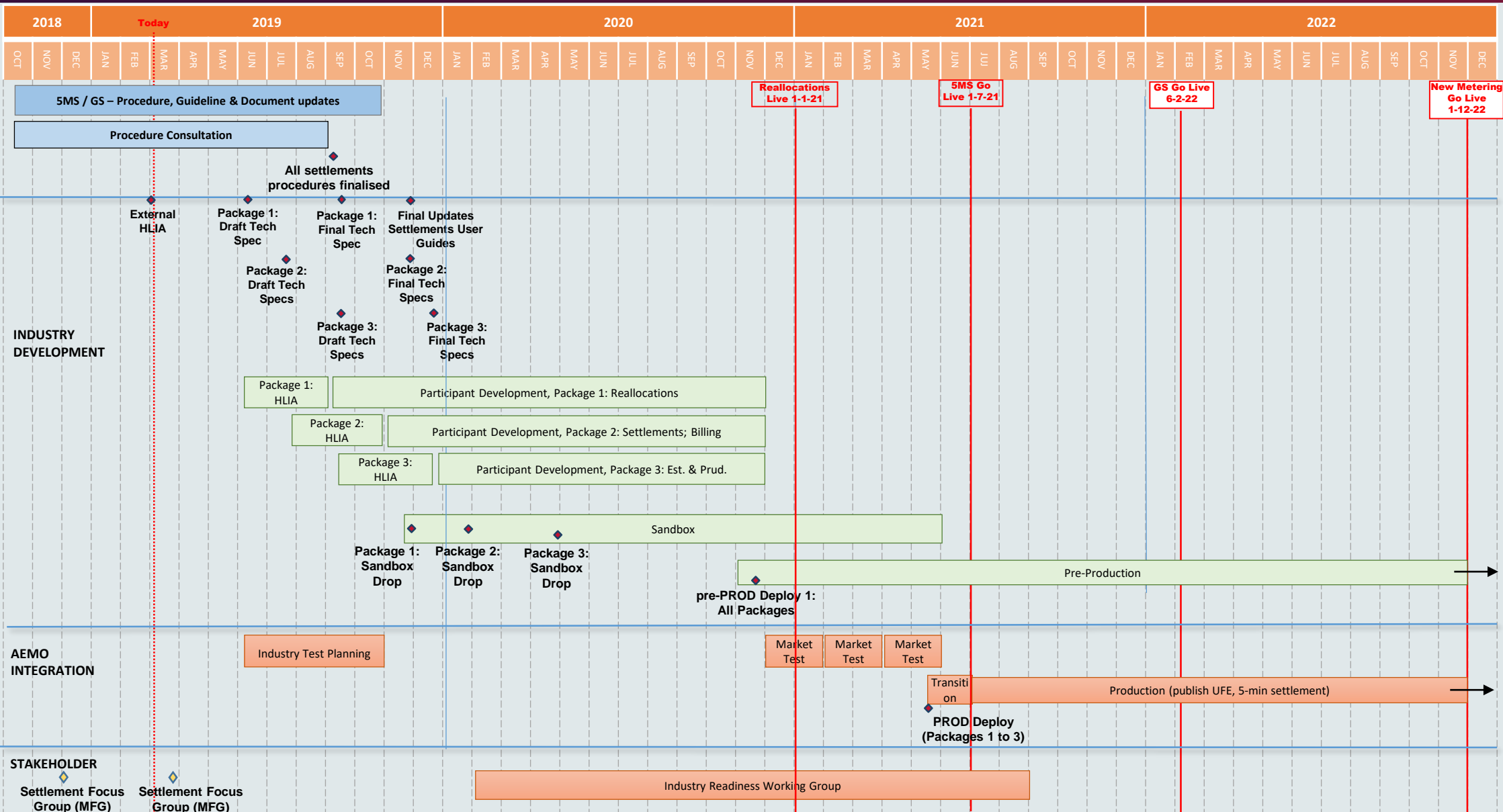
Bhanu Rajan

System Workstream – Settlement and Operations

- Current estimated timeline

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
SETTLEMENTS										
Estimation	Oct-18	Nov-18	Dec-18	Mar-19	Oct-19	Jan-20	-	May-20	Nov-20	May-21
Settlements	Oct-18	Nov-18	Dec-18	Mar-19	Aug-19	Dec-19	-	Mar-20	Nov-20	May-21
Reallocation	Dec-18	Nov-18	Dec-18	Mar-19	Jul-19	Oct-19	Nov-19	Feb-20	Aug-20	Nov-20
Billing	Oct-18	Nov-18	Dec-18	Mar-19	Aug-19	Dec-19	-	Mar-20	Nov-20	May-21
Prudentials	Sep-18	Nov-18	Dec-18	Mar-19	Oct-19	Jan-20	Nov-19	May-20	Nov-20	May-21
Full Data Model	Refer DISPATCH									
POWER SYSTEM OPS (TBC)										
PASA (ST/PD)	Aug-18	-	Oct-18		TBC	TBC	Oct-19	Nov-19	Nov-20	Mar-21
RERT	Oct-18	TBC	TBC		TBC	TBC	TBC	-	Nov-20	May-21
Negative Residue Management	Refer DISPATCH									

5MS Participant Timeline – Settlements



Level Two Milestones - Settlements

Level	Workstream	Milestone	Description	Date	Status	Notes
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-Sep-2019	Provisional	On Track
2	Settlements	Software Drop for Package 1	Software deployed into the 5MS Staging environment for Reallocations.	30-Nov-2019	Provisional	On Track
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.	30-Nov-2019	Provisional	On Track
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-Dec-2019	Provisional	On Track
2	Settlements	Software Drop for Package 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Settlements and Billing.	31-Jan-2020	Provisional	On Track
2	Settlements	Software Drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Estimations and Prudentials.	30-Apr-2020	Provisional	On Track
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	Tentative	Content and timing of Market Trials TBD
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 Trail scenarios.	30-Nov-2020	Tentative	Content and timing of Market Trials TBD
2	Settlements	Reallocations Go Live	AEMO has deployed all relevant software to the 5MS pre-Production environment and is ready to deliver the agreed Market Trail scenarios.	01-Jan-2021	Tentative	To be discussed @Settlements Focus Group, 20-Mar-2019
2	Settlements	Market Trials conclude	All relevant Market Participants have passed UAT to submit five-minute read data.	31-May-2021	Tentative	Content and timing of Market Trials TBD

Matters for Discussion

Hamish McNeish

Dispatch – Debrief from Focus Group

Pierre Fromager

Topics Discussed

- Previous Actions and discussion
 - Request to bring dispatch timing forward (publish by start of DI)
 - Request for more information on schedule timings (pre-dispatch, PASA etc...)
 - Update on Sandbox (now called 5MS Staging) timings
- AEMO proposed Rules change
- STPASA use of 5-minute bids
- Bid File Submission Document
- Spot Market Operations Timetable
- Dispatch and Bidding data model
- Web User Interface development
- 5-minute pre-dispatch

Dispatch Focus Group - Topics

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
AEMO Rule change	<ul style="list-style-type: none"> * MLF calculation remains at 30-min * FSIP to be included in 5-minute pre-dispatch * Relax consultancy requirements for Spot Market Timetable 	ERM Power requested for more visibility on the Timetable changes and ability to comment on them. AEMO will include this in the rule change	None	AEMO progressing with rule change	Approach agreed
STPASA use of bids	The bid with the lowest PASA availability in a 30-minute period will be used as the input to STPASA	No issues raised	None	AEMO progressing with design	Approach agreed
Bid Submission Document	Review of bidding changes. Interface document moved from procedures to systems stream	<p>The interface document detail is currently contained in the Technical Specification.</p> <p>Fixed load was confirmed as only having a valid value</p>	None	Publish draft Bidding interface document	Approach agreed

Dispatch Focus Group – Topics (2)

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Spot Market operations timetable	<p>With 5-minute pre-dispatch now mandated a Spot Market timetable change is required.</p> <p>An issues paper and draft timetable will be published in Q1 of 2019</p>	<p>Focus group members were invited to provide comments or feedback on the current timetable</p>	None	AEMO to publish issues paper and draft timetable	Pending
Dispatch and bidding data model	Presented proposed data model changes	<p>Field sizes have been reduced to reduce wasted space. Rebidding event time changed to only store time (not date).</p> <p>There is no planned field to indicate 5 vs 30-minute bid. This should be simple to determine based on other data model field changes.</p>	<p>The AER have requested an additional field “Time of Decision” this has been added to the Tech Spec.</p> <p>Due to inconsistencies between expected and actual use AEMO have proposed to drop Version. AEMO believes Reference Id and/or Comment can be used instead. This is in the DRAFT Tech Spec.</p>	Feedback on draft the Technical Specification is due 18 th Mar.	Pending

Dispatch Focus Group – Topics (3)

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Web User Interface development	<p>Remains under discussion.</p> <p>Planned support for:</p> <ul style="list-style-type: none"> * Creating/editing multi-bid submissions * Sparse view * Bulk update of a field, e.g. Max Avail * Support download and upload of CSV (in addition to JSON) 	<p>The current screens work well for their intended purpose</p> <p>Being able to quickly reflect a unit trip and subsequent recovery would be useful</p> <p>Advanced validation/calculation in the UI was discussed, AEMO proposed extracting CSV and using external software like Excel to support this.</p>	<p>Limits on size of JSON files</p> <p>Ensuring responsiveness of UI with increased data</p>	<p>AEMO will start work on UI design</p> <p>AEMO will continue to engage on UI development with further sessions expected</p>	Pending

Dispatch Focus Group – Topics (4)

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
5-minute pre-dispatch	<p>Proposed publication of 3 to 6 hour 5-minute pre-dispatch</p> <p>AEMO is investigating publishing results for each hour</p>	<p>AEMO needs to prototype a solution to determine what is possible, and intends to achieve a 3 – 6 hr 5-minute pre-dispatch.</p> <p>It was discussed that publishing up to 3 hours each 5-minutes then the remaining hours at a less frequent rate such as 30-minutes could be an acceptable approach.</p> <p>The amount of data will be significant, further work is required to determine what is</p>	<p>What is technically achievable in a 5-minute timeframe</p> <p>Volume of additional data to publish</p>	<p>AEMO raising internal change request</p> <p>AEMO to start prototyping work</p>	Pending

Metering – Debrief from Focus Group

Simon Tu

Net Read Construction

Material Issue	Description	AEMO Analysis	AEMO Conclusion
<p>Changes to the delivery of meter data to AEMO</p>	<p>AEMO proposed to more closely align the MDP's meter data delivery processes for AEMO and market participants.</p>	<p>Stakeholder feedback supported AEMO's objective to more closely align the MDP's meter data delivery processes.</p> <p>Lower level granularity of meter data, being provided to AEMO, is becoming more important in supporting its core functions, Global Settlements, as well as supporting emerging initiatives such as Distributed Energy Resources and Consumer Data Rights.</p> <p>AEMO recognises the potential challenges certain stakeholders may have in fully aligning meter data delivery processes for Basic meter data reads.</p> <p>AEMO believes that the transition to MDFF for Basic meter reads should be implemented progressively over an appropriate period of time.</p>	<p>AEMO supports the alignment and uniformity of meter data delivery by MDPs to AEMO and other market participants.</p> <p>Proposed changes:</p> <ul style="list-style-type: none"> - MDFF NEM12 files to be the required file format for all interval meter data being delivered to AEMO from 1 July 2021 - NEM12 meter data to be delivered to AEMO as per the meter's configuration i.e. 5, 15 or 30min from 1 July 2021 - NEM12 register level and reactive meter data to be delivered to AEMO from 1 July 2021, even where the CATS NMI Data Stream records are at the Net level - Net Datastream records to be progressively replaced by Register level data stream records in the CATS NMI Data Stream (CNDS) table - MDFF NEM13 files to be supported by AEMO from 1 July 2021 however AEMO will continue to support and accept MDMF files for Basic meter reads - Meter data to be delivered consistently by MDPs to both AEMO and market participants

B2M Communications - B2M via API

AEMO Proposal	Discussion
<p>Legacy B2M Web Services</p> <ul style="list-style-type: none">• shall remain via MarketNet https://msats.prod.nemnet.net.au/msats/ws/• shall be extended for access via the Internet (VPN) <p>B2M Message Submission</p> <ul style="list-style-type: none">• via FTP• via MSATS Browser• via Internet (VPN) facing Push API <p>B2M Message Response</p> <ul style="list-style-type: none">• Participants to elect FTP or API by Transaction Group• via Internet (VPN) facing Push API• via Internet (VPN) facing Pull API	<p>No further services outside of the legacy B2M Synchronous Web Services shall be developed</p> <p>Message Submission and Response protocols are independent</p> <p>API Message patterns (Internet)</p> <ul style="list-style-type: none">• API modelled on SMP Asynchronous Push-Push• API modelled on SMP Asynchronous Push-Pull <p>Some variation message payloads to reflect the differences between B2M and B2B</p>

B2M Communications - B2M via API

AEMO Proposal	Discussion
<p>Additional Hub Message Managing APIs</p> <ul style="list-style-type: none">• Flow Control Notification API• Flow Message Acknowledgement Validation Failure• Hub Flow Control Report	<ul style="list-style-type: none">• Extension of the SMP HMGT transaction group to B2M

Benefits	Next Steps
<ul style="list-style-type: none">• By providing a API Market communications platforms accessible through the Internet, Participants can move away from MarketNet for their B2M communications• Provide a uniform set of market facing interfaces for Retail B2B and B2M communications• Participants do not have to maintain a legacy protocol	<ul style="list-style-type: none">• AEMO publish Draft Technical Specifications• AEMO to publish Draft B2M to eHub Technical Guide (new)

B2M Communications - File Size

Discussion

AEMO Functional Testing is complete

- AEMO systems support messages with large (10MB) CSV payloads
- Messages with large volumes of transactions are problematic

AEMO Load and performance testing

- Scheduled for 1st and 2nd week of March

Results of Industry Functional Testing

- Participants to discuss progress on their testing

Next Steps

- AEMO to publish Draft Technical Specifications
- Output of the analysis to ultimately support B2BWG/IEC considerations

Bidding Technical Specification – Feedback Summary

Hamish McNeish

General Questions

Hamish McNeish

Forward Meeting Plan

Hamish McNeish

Upcoming Meetings

- Systems Working Group
 - SWG#9 - Mon, 18 April 2019
- Focus groups:
 - Settlements – Wed 20 March 2019
 - Special focus group on settlement reconciliation and profiling – *to be scheduled*
- Other AEMO IT Meetings
 - Next MSUG Thur 21st March
- 5MS Meetings and Forum Dates:
<http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>

APPENDIX

Metering- Interim Net Read Construction Use Cases

Interim Solution Use Cases

Case #1	Description
Scenario	Net CNDS Suffix with E1 and B1 meter reads
Use Case	<ul style="list-style-type: none"> - N1 is registered in the CNDS. - MDDFF file is sent to AEMO containing CSVIntervalData for IntervalValue1 with the following meter data: <ul style="list-style-type: none"> - A read with MDMDataStreamIdentifier = N1 and a NMISuffix = B1. - A second read with MDMDataStreamIdentifier = N1 and a NMISuffix = E1. - Two reactive load reads for K1 and Q1.
Meter Data Load	<ul style="list-style-type: none"> - The 4 reads in the CSVIntervalData will be loaded as B1, E1, K1, Q1. - A sign shall be applied to the loaded register level reads based on the first character of the NMISuffix. <ul style="list-style-type: none"> - 'E1' for IntervalValue1 = (+) 10.000 - 'B1' for IntervalValue1 = (-) 2.000 <ul style="list-style-type: none"> - Sign change applied due to the first character of the suffix 'B1' being an B. - A 5th N1 read shall be created. <ul style="list-style-type: none"> - N1 shall be constructed from E1 and B1 reads that share the same NMI, IntervalDate and MDMDataStreamIdentifier. <ul style="list-style-type: none"> - 'E1' - 'B1' = 'N1'. - (+) 10.000 - 2.000 = (+) 8.000
Exception Reporting	N/A
Settlements	<ul style="list-style-type: none"> - At settlements the CNDS registered data stream 'N1' shall be assessed - As 'N1' exists for IntervalValue1, 'N1' shall be read from the loaded meter data - (+) 8.000 shall be used as the settlement actual ((+) 10.000 - 2.000 = (+) 8.000)
CNDS Suffix	N1

Interim Solution Use Cases

Case #2	Description
Scenario	Net CNDS Suffix with no E1 or B1 meter reads
Use Case	<ul style="list-style-type: none">- N1 is registered in the CNDS.- MDFF file is sent to AEMO containing CSVIntervalData for IntervalValue1 with the following reads:<ul style="list-style-type: none">- Two reactive load reads for K1 and Q1.- No reads for the MDMDataStreamIdentifier that has been supplied.
Meter Data Load	<ul style="list-style-type: none">- The 2 reads in the CSVIntervalData will be loaded as K1, Q1.- No net read shall be constructed.
Exception Reporting	<ul style="list-style-type: none">- RM11 report generated to highlight missing N1
Settlements	<ul style="list-style-type: none">- At settlements the CNDS registered data stream 'N1' shall be assessed- As 'N1' does not exist for IntervalValue1, an estimate for the N1 data stream shall be used for settlements based on the NMI like-day read or ADL
CNDS Suffix	N1

Interim Solution Use Cases

Case #3	Description
Scenario	Net CNDS Suffix with missing B1 meter reads
Use Case	<ul style="list-style-type: none"> - N1 is registered in the CNDS - MDFF file is sent to AEMO containing CSVIntervalData for IntervalValue1 with the following reads: <ul style="list-style-type: none"> - A read with MDMDataStreamIdentifier = N1 and a NMISuffix = E1 - The NMISuffix B1 defined in NMISuffixConfiguration has not been supplied - Two reactive load reads for K1 and Q1
Meter Data Load	<ul style="list-style-type: none"> - The 3 reads in the CSVIntervalData will be loaded as E1, K1, Q1 - A sign shall be applied to the loaded register level reads based on the first character of the NMISuffix <ul style="list-style-type: none"> - 'E1' for IntervalValue1 = (+) 10.000 - A 4th N1 read shall be loaded <ul style="list-style-type: none"> - N1 shall be constructed from E1 <ul style="list-style-type: none"> - 'E1' = 'N1' - (+) 10.000 = (+) 10.000
Exception Reporting	<ul style="list-style-type: none"> - Meter Data Response will highlight missing 'B1' based on the NMISuffixConfiguration with reads delivered
Settlements	<ul style="list-style-type: none"> - At settlements the CNDS registered data stream N1 shall be assessed - As N1 exists for IntervalValue1, N1 shall be read from the loaded meter data - (+) 10.000 shall be used as the settlement value - In this use case the N1 may not truly representative of the energy allocations for the NMI
CNDS Suffix	N1

Interim Solution Use Cases

Case #4	Description
Scenario	Register level CNDS Suffix with E1 and B1 meter reads
Use Case	<ul style="list-style-type: none">- E1 and B1 is registered in the CNDS- MDFF file is sent to AEMO containing CSVIntervalData for IntervalValue1 with the following reads:<ul style="list-style-type: none">- A read with MDMDataStreamIdentifier = E1 and a NMISuffix = E1- A read with MDMDataStreamIdentifier = B1 and a NMISuffix = B1- Two reactive load reads for K1 and Q1
Meter Data Load	<ul style="list-style-type: none">- The 4 reads in the CSVIntervalData will be loaded as E1, B1, K1, Q1- A sign shall be applied to the loaded register level reads based on the first character of the NMISuffix<ul style="list-style-type: none">- 'E1' for IntervalValue1 = (+) 10.000- 'B1' for IntervalValue1 = (-) 2.000<ul style="list-style-type: none">- Sign change applied due to the first character of the suffix 'B1' being an B- As the CNDS Suffix is at the register level, no Net read needs to be constructed
Exception Reporting	N/A
Settlements	(+) 8.000 shall be used as the settlement value ((+) 10.000 + (-) 2.000 = (+) 8.000)
CNDS Suffix	E1 and B1

Interim Solution Use Cases

Case #5	Description
Scenario	Register level CNDS Suffix with missing B1 meter reads
Use Case	<ul style="list-style-type: none">- E1 and B1 is registered in the CNDS- MDFF file is sent to AEMO containing CSVIntervalData for IntervalValue1 with the following reads:<ul style="list-style-type: none">- A read with MDMDataStreamIdentifier = Null and a NMISuffix = E1- The NMISuffix 'B1' defined in the CNDS has not been supplied- Two reactive load reads for K1 and Q1
Meter Data Load	<ul style="list-style-type: none">- The 3 reads in the CSVIntervalData will be loaded as E1, K1, Q1- A sign shall be applied to the loaded register level reads based on the first character of the NMISuffix<ul style="list-style-type: none">- 'E1' for IntervalValue1 = (+) 10.000- As the CNDS Suffix is at the register level, no Net read needs to be constructed
Exception Reporting	<ul style="list-style-type: none">- RM11 report generated to highlight missing B1
Settlements	<ul style="list-style-type: none">- (+) 10.000 shall be used as the E1 settlement value- B1 will be estimated for settlements and stored against the NMI with a (-) sign
CNDS Suffix	E1 and B1