

## AGENDA

MEETING: 5MS PROGRAM – PROCEDURES WORKING GROUP #7

DATE: THURSDAY, 14 FEBRUARY 2019

TIME: 10:00AM – 1:00PM [MELBOURNE TIME]

LOCATION: MELBOURNE, LEVEL 22, 530 COLLINS STREET, VIC55286605  
SYDNEY, LEVEL 2, 20 BOND STREET, NSW  
BRISBANE, LEVEL 10, 10 EAGLE STREET, QLD  
ADELAIDE, LEVEL 9, 99 GAWLER PLACE, SA

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No.	Agenda Item	Paper	Responsible	Action
<b>Preliminary Matters</b>				
1	Welcome, introductions, apologies		Emily Brodie	Note
<b>Matter for Discussion</b>				
2	NEM TNSP Negative Settlements Residue Procedure	<i>Presentation</i>	Dimi Botha	Discuss
<b>Preliminary Matters continued</b>				
3	Minutes and actions from previous meeting	<i>Presentation</i>	Emily Brodie	Note
<b>Matters for Noting</b>				
4	5MS program update	<i>Presentation</i>	Graeme Windley	Note
5	Procedures workstream update	<i>Presentation</i>	Emily Brodie	Note
<b>Matters for Discussion</b>				
6	SRA Round 2	<i>Presentation</i>	Austin Tan	Discuss
7	Prudentials procedures	<i>Presentation</i>	Austin Tan, Rebecca Malmur	Discuss
8	Global Settlements procedure and guideline	<i>Presentation</i>	Austin Tan	Discuss
	BREAK			
9	Metering procedures update	<i>Presentation</i>	David Ripper	Discuss
10	Reconciliation support	<i>Presentation</i>	Blaine Miner	Discuss
11	Spot market operations timetable consultation	<i>Presentation</i>	Michael Sanders	Discuss
12	Dispatch Miscellaneous package	<i>Presentation</i>	Michael Sanders	Discuss
<b>Other Business</b>				
13	Forward meeting plan and general questions	<i>Presentation</i>	Emily Brodie	Discuss

# 5MS Procedures Working Group #7

Thursday, 14 February 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

# Agenda

NO	TIME	AGENDA ITEM	RESPONSIBLE
<b>Preliminary matters</b>			
1	10:00am – 10:10am	Welcome, introduction and apologies	Emily Brodie (AEMO)
<b>Matter for discussion</b>			
2	10:10am – 10:20am	NEM TNSP Negative Settlements Residue Procedure	Dimi Botha (AEMO)
<b>Preliminary matters continued</b>			
3	10:20am – 10:30am	Minutes and actions from previous meeting	Emily Brodie (AEMO)
<b>Matters for noting</b>			
4	10:30am – 10:45am	5MS program update	Graeme Windley (AEMO)
5	10:45am – 11:00am	Procedures workstream update	Emily Brodie (AEMO)
<b>Matters for discussion continued</b>			
6	11:00am – 11:10am	SRA Round 2	Austin Tan (AEMO)
7	11:10am – 11:20am	Prudentials Procedures	Austin Tan, Rebecca Malmur (AEMO)
8	11:20am – 11:35am	Global Settlements procedure and guideline	Austin Tan (AEMO)
	11:35am – 11:45am	BREAK	
9	11:45am – 12:15pm	Metering Procedures Update	David Ripper (AEMO)
10	12:15pm – 12:25pm	Reconciliation Support	Blaine Miner (AEMO)
11	12:25pm – 12:35pm	Spot market operations timetable consultation	Michael Sanders (AEMO)
12	12:35pm – 12:55pm	Dispatch Miscellaneous package	Michael Sanders (AEMO)
<b>Other business</b>			
13	12:55pm – 1:00pm	Forward meeting plan and general questions	Emily Brodie (AEMO)

# NEM TNSP Negative Settlements Residue Procedure

Dimi Botha

# NEM TNSP Negative Residue Procedure

- The procedure outlines the process to enable AEMO to recover amounts arising from negative inter-regional and intra-regional settlements residues in a timeframe that minimises the impact on the settlement of Market Participants.
- Published procedure link:  
[https://www.aemo.com.au/media/Files/Other/settlements/NEM\\_TNSP\\_Negative Settlements Residue Procedure.pdf](https://www.aemo.com.au/media/Files/Other/settlements/NEM_TNSP_Negative_Settlements_Residue_Procedure.pdf)

# Changes due to 5MS

Content changes to this procedure due to the 5MS are minimal and include:

- Update of worked example in section 6.1 to align quantities with 5 minute trading interval times.

## Current worked example

*An interconnector between 2 regions with a flow of 1000MW (i.e. 500MWh per trading interval)*

*Prices in the regions are \$10,000 and \$100 (flow from higher to lower priced region)*

*Negative Residue = 500MWh x (\$10,000 - \$100) = \$4.95 Million per trading interval*

*The residue would be limited by the cumulative price threshold being exceeded, however could reach \$4.95 Million x 15 = **\$74 Million***

## Updated worked example

*An interconnector between 2 regions with a flow of 1000MW (i.e. **83**MWh per trading interval)*

*Prices in the regions are \$10,000 and \$100 (flow from higher to lower priced region)*

*Negative Residue = **83**MWh x (\$10,000 - \$100) = **\$0.825** Million per trading interval*

*The residue would be limited by the cumulative price threshold being exceeded, however could reach **\$0.825** Million x **90** = **\$74 Million***

# 5ms Related Additional Comments

- AEMO has considered the impact of 5 minute intervals on the \$100,000 minimum pre-payment threshold for TNSPs. Further investigation showed that the threshold is sufficient and no update is required.
- Related procedures:
  - *Dispatch SO\_OP3705* - no change required as no change to threshold
  - *Methodology for the Allocation and Distribution of Settlements Residue* guide – no change required as no reference to 30-minute *trading interval* within the worked examples



# Proposed consultation approach

- Rules consultation not required
- Procedure only applicable to TNSPs therefore propose to directly email TNSPs for feedback on marked-up procedure
- Seeking PWG feedback on this consultation approach

NEM Settlements Revisions Policy	Indicative date
Publish first stage notice, draft policy and draft consultation paper	Friday, 1 April 2019
Closing date for submissions in response to this Notice	Friday, 3 June 2019
Publication of Final Report and Determination	Thursday, 14 June 2019

# Minutes and actions from previous meeting

Emily Brodie

# Responses to PWG actions (1)

	Topic	Action	Response
1.8.8	Metering procedures	<p>The metering focus group and the SWG are to investigate whether there are data volume delivery constraints because of 5MS or global settlements with the current delivery timeframes.</p> <p>PCF and PWG to be informed of progress.</p>	<p>Ongoing</p> <p>Initial analysis suggests that the current MDFF 1MB file size will become inappropriate, in the medium to long term following the start of 5MS on 1 July 2021, due to the increasing amount of interval meters deployed in the NEM. Analysis is continuing regarding what file size would be most appropriate.</p>
3.3.1	5MS Drafting Amendments	PWG to provide input on the potential 5MS drafting amendments around a bidding data soft cutover, and other areas of the 5MS rule.	Accepted input until the end of 2018. Expect to submit rule change request to the AEMC in February
5.6.1	DER Program	AEMO to update PWG on any possible impacts of the DER program to the 5MS program	Ongoing
6.5.1	Global Settlement procedures	AEMO to advise PWG on its approach to developing the UFE Adjustment Procedure and UFE Reporting Guideline.	<p>Ongoing</p> <p>High level presentation at PWG 7, details to follow at next Settlements Focus Group</p>

# Responses to PWG actions (1)

	Topic	Action	Response
6.6.1	Reallocation procedures	PWG to provide feedback on AEMO's approach to only support 5-minute reallocations after 1 July 2021	<p>Consultation on the Reallocation procedures commenced shortly after PWG 5 on 21 December 2018.</p> <p>3 submissions received in response to the reallocations consultation, all supportive of AEMO's proposal. One participant reiterated that the production interface must be made available at least 6 months prior to the 5MS start date.</p>
6.6.2	Non 5MS changes to reallocations	PWG to provide feedback on non-mandatory 5MS changes to reallocations	<p>Consultation on the Reallocation procedures commenced shortly after PWG 5 on 21 December 2018.</p> <p>3 submissions received in response to the reallocations consultation, all supportive of AEMO's proposal.</p>
6.6.3	Reallocation procedures	PWG to provide feedback on reallocations consultation approach, if a shortened consultation is preferred	3 responses received from PWG, all positive. AEMO proceeded with a one round consultation, with an extended submission timeframe.

# Responses to PWG actions (1)

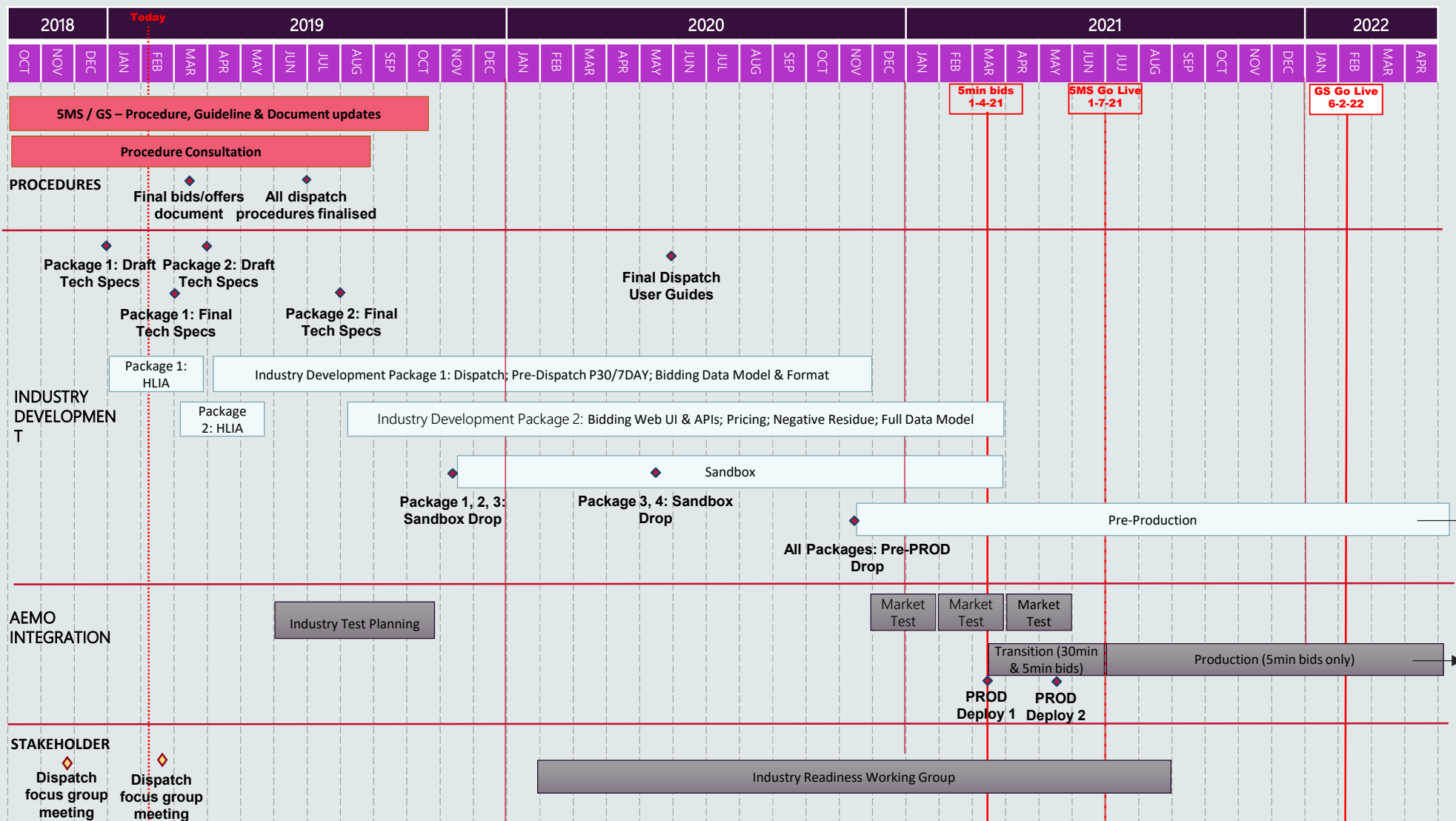
	Topic	Action	Response
6.8.1	PWG format	PWG to provide feedback on the new webinar format	<p>11 responses, all positive.</p> <p>One participant requested that we use webex for focus groups. AEMO reiterates that a learning from the <i>Power of Choice</i> program was that face-to-face focus groups are much more effective.</p>
6.8.2	PWG format	PWG to provide feedback on the preferred format of the PWG, and if participants value coming in to AEMO premises for the PWG	<p>10 responses. Of these, 9 wanted to maintain the option of meeting in person:</p> <ul style="list-style-type: none"> <li>• Better for group discussions and incidental conversations</li> <li>• Needed when people do not have access to quiet spaces for the webinar</li> </ul>
6.8.3	5MS timelines	AEMO to contact Stanwell and Energex in relation to their need for more detailed 5MS program timelines.	Complete. Timelines presented to PCF at 8 Feb meeting and in this meeting.
6.8.4	Procedure updates	PWG provide feedback on the approach to consult on metering procedures affected by other initiatives outside of 5MS such as the DER program	One response received noting that it is more cost effective to consult concurrently across initiatives where possible

# 5MS program update

Graeme Windley

# 5 Minute & Global Settlements Program – INDICATIVE TRANSITION OVERVIEW – DISPATCH AND BIDDING SYSTEMS

Indicative Industry Overview V0.1 – 29 January 2019



**Package 1:** Dispatch; Predispatch P30/7DAY; PASA; Bidding Data Model; Bidding Format.

**Package 2:** Bidding Web UI and APIs

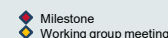
**Package 3\*:** Predispatch P5

**Package 4\*:** RERT, Trading Price / Price Revision; Administrated Pricing and CPT; Suspension Pricing; Negative Residue Management; Full Data Model<sup>^</sup>

\* Dates TBC for External HLIA, Tech Spec and Sandbox

<sup>^</sup> Includes Settlements Data Models

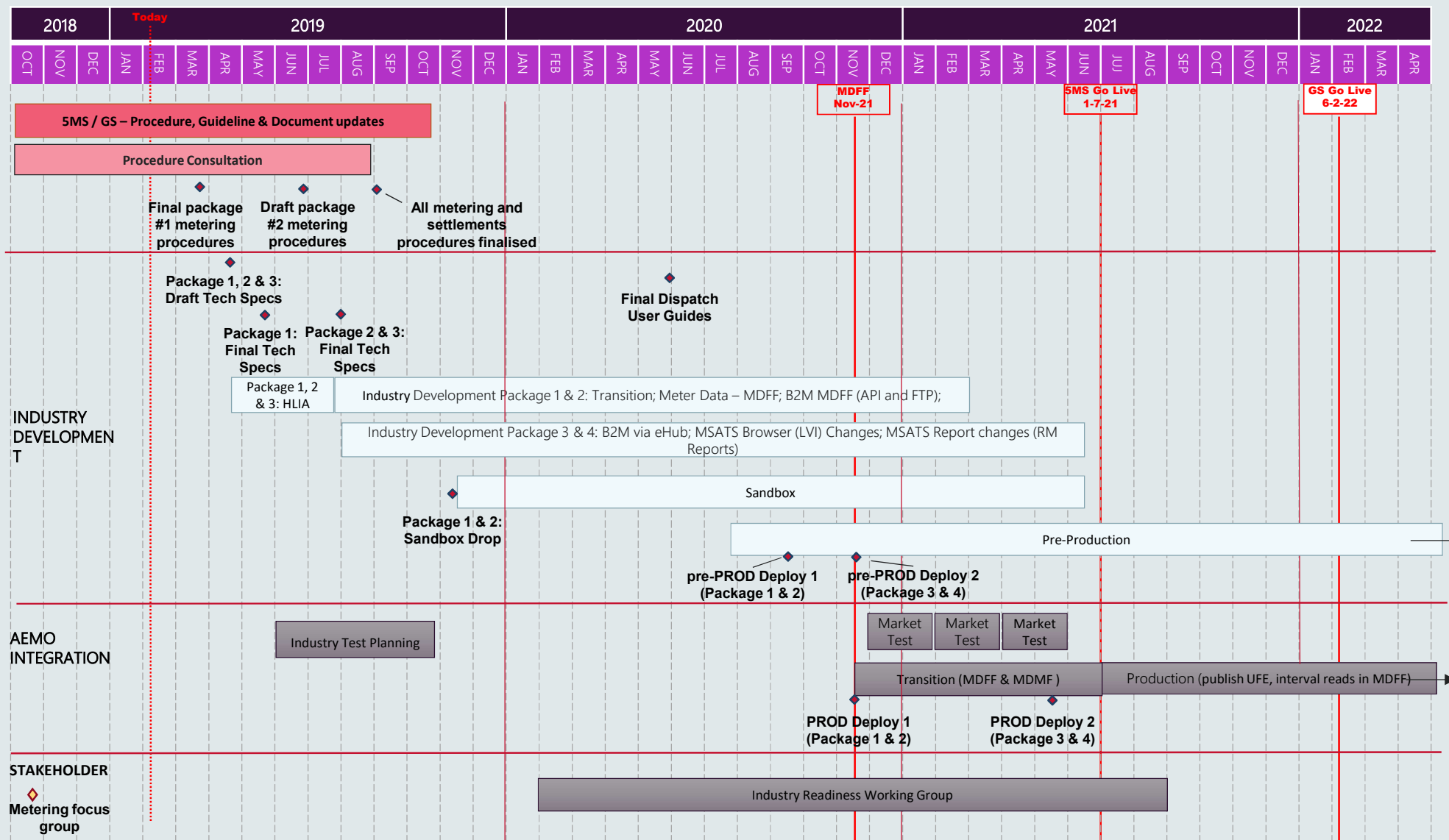
For Information: HLIA = High Level Impact Assessment



For detailed meeting schedule and agendas, see AEMO's Stakeholder Relations Website

# 5 Minute & Global Settlements Program – INDICATIVE TRANSITION OVERVIEW – METERING SYSTEMS

Indicative Industry Overview V0.1 – 29 January 2019



**Package 1:** Transition; Meter Data – MDFF; B2M MDFF (API and FTP);

**Package 2:** Standing Data and validations;

**Package 3:** B2M via eHub;

**Package 4\*:** MSATS Browser (LVI) Changes; MSATS Report changes (RM Reports);

\* Dates TBC for External HLIA, Tech Spec and User Guides

For Information: HLIA = High Level Impact Assessment

◆ Milestone  
◆ Working group meeting

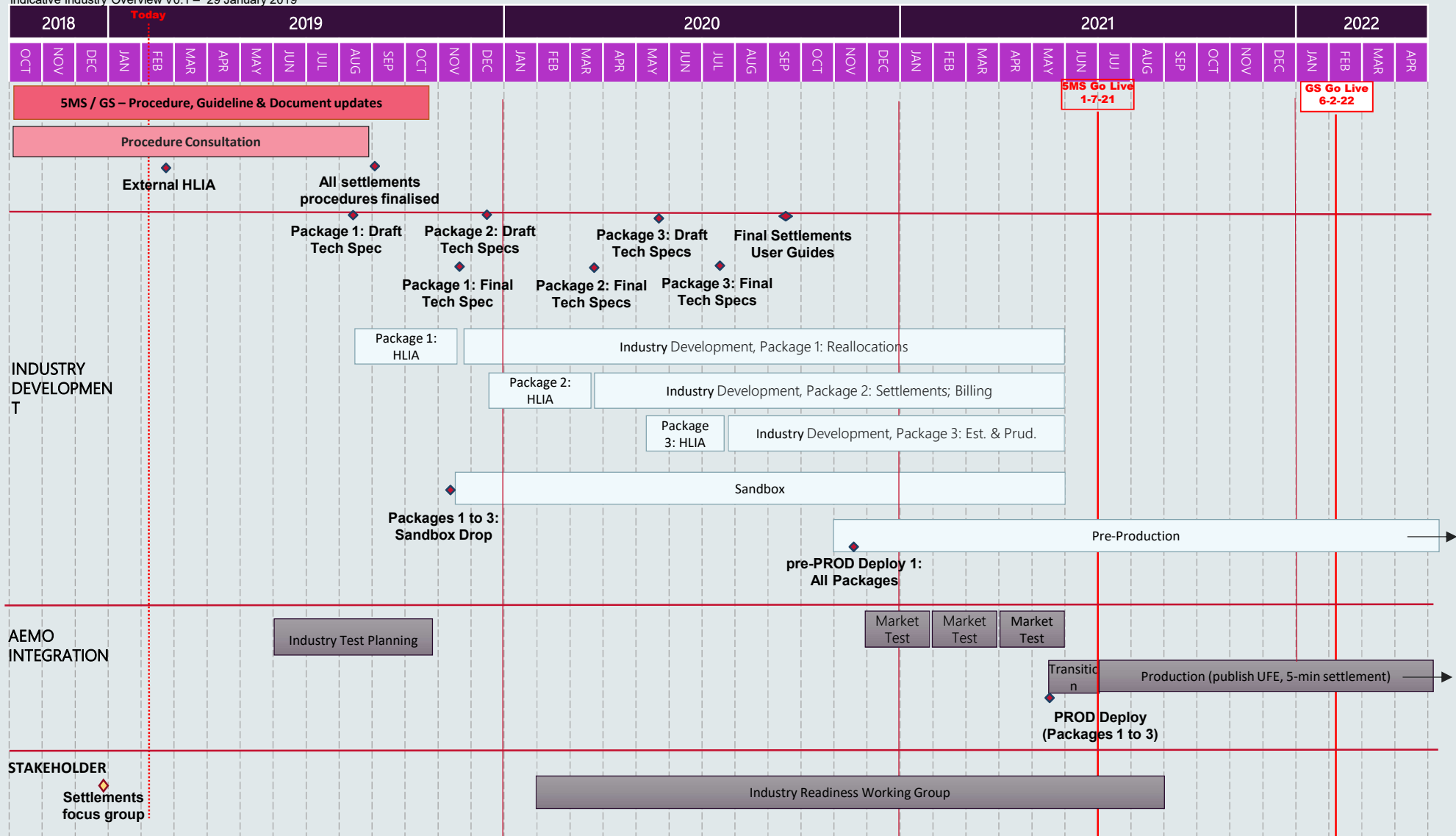
For detailed meeting schedule and agendas, see AEMOs Stakeholder Relations Website



# 5 Minute & Global Settlements Program – INDICATIVE TRANSITION OVERVIEW – **SETTLEMENT (and OPERATIONS) SYSTEMS**



Indicative Industry Overview V0.1 – 29 January 2019



**Package 1:** Reallocation  
**Package 2:** Settlements; Billing  
**Package 3:** Estimation; Prudentials

# 5MS Program Update

- Executive Forum
  - Wednesday 20 February
  - Peter Geers & Joe Locandro attending
  - Development of IT strategy
- Industry Timeline
  - Feedback from Participants

# Procedures workstream update

Emily Brodie

# Procedures workstream status

	Pre-consultation		Consultation			
5 MINUTE SETTLEMENT PROCEDURES TRACKING			TIMING			CONTENT
	HLIA	PWG Engagement	Consultation paper	Draft documents	Final documents	Package content
<b>METERING</b>						
1. Metering - Metering Data & Metrology	Jul-18	Jul-18	Sep-18	Jan-19	Mar-19	
2. Metering - MSATS and SLPs	Jul-18	Dec-18 & Mar-19	Apr-19	Jun-19	Aug-19	
3. Metering - Miscellaneous*	Jul-18	Mar-19	n/a	Mar-19*	Jul-19	
B2B Procedures - B2B file size	n/a	Feb-19	TBC	TBC	TBC	
<b>SETTLEMENTS</b>						
SRA	Jun-18	Jul-18	n/a	Jul-18	Aug-18	
SRA round #2	Jun-18	Feb-19	Mar-19	Jun-19	Aug-19	
TNSP	Feb-19	Feb-19	Apr-19	n/a	Jun-19	
Estimation	Aug-18	Aug-18	Nov-18	Feb-19	Apr-19	
Reallocations	Dec-18	Dec-18	n/a	Dec-18	Feb-19	
Miscellaneous	Oct-18	Oct-18	Dec-18	Mar-19	May-19	
Prudentials	Aug-18	Sep-18	n/a	Apr-19	May-19	
<b>DISPATCH</b>						
1. Dispatch - Bids/Offers*	Jul-18	Jul 18 ongoing	n/a	Feb-19	Mar-19	
2. Dispatch - Spot market	Sep-18	Oct 18 ongoing	Jan-19	Apr-19	Jul-19	
3. Dispatch - Pricing	Aug-18	Aug 18 ongoing	Aug-18	Dec-18	Jul-19	
4. Dispatch - Miscellaneous*	Jan-19	Feb-19	n/a	n/a	Jun-19	
<b>POWER SYSTEM OPS</b>						
1. Operations - Miscellaneous*	TBA	Apr 19 ongoing	n/a	n/a	Jul-19	

TIMING
Started and on track
Started late
Overdue

CONTENT
No issues
Issues
Severe issues

# Procedures workstream meetings


- Next PWG scheduled for Tuesday 12<sup>th</sup> March:
  - Metering – Package 2 (MSATS and SLPs) and Package 3 (Miscellaneous)
  - Dispatch – debrief on dispatch focus group
- Upcoming focus groups:
  - Dispatch focus group – Friday, 15<sup>th</sup> February, Sydney
  - Settlements focus group – Mid March, TBC
  - Metering focus group – Late February/Early March 2019, TBC


# AEMO consultation page


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LEGEND

☒ ACCEPTING SUBMISSIONS

✓	CONVENOR	CONSULTATION	MARKET	STAGE	INITIATED	SUBMISSIONS CLOSE
	AEMO Gas	DWGM Accreditation Procedures - changes from PCT	DWGM	Closed	08/02/2019	
✓	AEMO NEM	2019 Planning and Forecasting Consultation	National Electricity Market	First Stage	05/02/2019	20/03/2019
	AEMO NSP	SA Power Networks publishes Distribution Annual Planning Report	Network Service Provider		01/02/2019	
	AEMO NEM	SRA Secondary Trading Consultation	Settlements Residue Auction, National Electricity Market	Final Report	30/01/2019	
✓	AEMO NEM	Five Minute Settlement – Metering Procedure Changes Package 1	National Electricity Market	Second Stage	30/01/2019	15/02/2019
✓	AEMO NSP	Powerlink Summary Queensland PADR Maintaining reliability of supply to Rockhampton	National Electricity Market, Network Service Provider	Draft Report	29/01/2019	15/03/2019
✓	AEMO NEM	NEM Distributed Energy Resources (DER) Register Information Guidelines Consultation	National Electricity Market	First Stage	29/01/2019	07/03/2019
✓	AEMO Gas	Gas Day Harmonisation	GSH, STTM	Second Stage	25/01/2019	25/02/2019
	AEMO NEM	MSATS Procedure Changes – Minor Amendment Consultation	National Electricity Market	Final Report	25/01/2019	

1 2 3 4 5 6 7 8 9 10 Next Last



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# 5MS consultation landing page (1)

The screenshot shows a web browser window displaying the AEMO 5MS consultation landing page. The browser's address bar shows the URL: [aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures-Workstream](http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures-Workstream). The page has a sidebar on the left with a list of packages and a main content area on the right.

**Navigation Sidebar:**

- Metering package 5: Miscellaneous
- Settlements package 1: Settlement Residue Auctions
- Settlements package 2: Estimations
- Settlements package 3: Miscellaneous
- Settlements package 4: Transmission Network Service Provider Negative Settlements Residue
- Settlements package 5: Prudentials
- Settlements package 6: Reallocations
- Dispatch package 1: Bids/Offers
- Dispatch package 2: Pricing
- Dispatch package 3: Spot market
- Dispatch package 4: Miscellaneous

**Main Content Area:**

the industry early in the development process to identify any potential areas of concern or contention, as well as identify areas of opportunity to improve outcomes.

## Packages and Stakeholder Consultation

AEMO has identified approximately 70 procedures, policies and guides that are affected by the 5MS Rule across four functional areas. These procedures have been grouped into packages for consultation. The packages are outlined in the table below.

The procedures included in each package, their High-Level Impact Assessments and further details on consultations can be found through the links as they are progressively released throughout 2018 and 2019. Note that some documents are required to go through the formal two-stage 'rules consultation' process, the remainder will be released for comment by stakeholders.

Metering	Settlements	Dispatch	Operations
<ul style="list-style-type: none"><li>1. <a href="#">Metering data</a></li><li>2. <a href="#">MSATS and SLPs</a></li><li>3. <a href="#">Miscellaneous</a></li></ul>	<ul style="list-style-type: none"><li>1. <a href="#">SRA</a></li><li>2. <a href="#">Estimation</a></li><li>3. <a href="#">Miscellaneous</a></li><li>4. <a href="#">TNSP</a></li><li>5. <a href="#">Prudentials</a></li><li>6. <a href="#">Reallocations</a></li></ul>	<ul style="list-style-type: none"><li>1. <a href="#">Bids/offers</a></li><li>2. <a href="#">Pricing</a></li><li>3. <a href="#">Spot Market</a></li><li>4. <a href="#">Miscellaneous</a></li></ul>	No packages, no formal rules consultation required – release for comment in 2019


AEMO will consult with industry on the procedures that are impacted, and on the proposed approach to work packages.



# 5MS consultation landing page (2)

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## METERING PACKAGE 1: METERING DATA

**In this section**

**Procedures Workstream**

- Procedures Working Group (PWG)
- Metering package 1: Metering data**
- Metering package 2: MSATS and SLPs
- Metering package 3: Miscellaneous
- Settlements package 1: Settlement Residue Auctions
- Settlements package 2: Estimations
- Settlements package 3: Miscellaneous
- Settlements package 4: Transmission Network Service Provider Negative Settlements Residue
- Settlements package 5: Prudentials
- Settlements package 6: Reallocations
- Dispatch package 1: Bids/Others
- Dispatch package 2: Pricing
- Dispatch package 3: Spot market
- Dispatch package 4: Miscellaneous

**Overview:** The matter for consultation involves changes to various Metering procedures to implement the Five-Minute Settlement Rule. The consultation focuses on proposed changes to AEMO's profiling methodologies, including the profiling of 15 and 30-min interval meter reads, and proposed changes to the delivery of meter data to AEMO.

**Status:** [Receiving Submissions on Second Stage Consultation.](#)

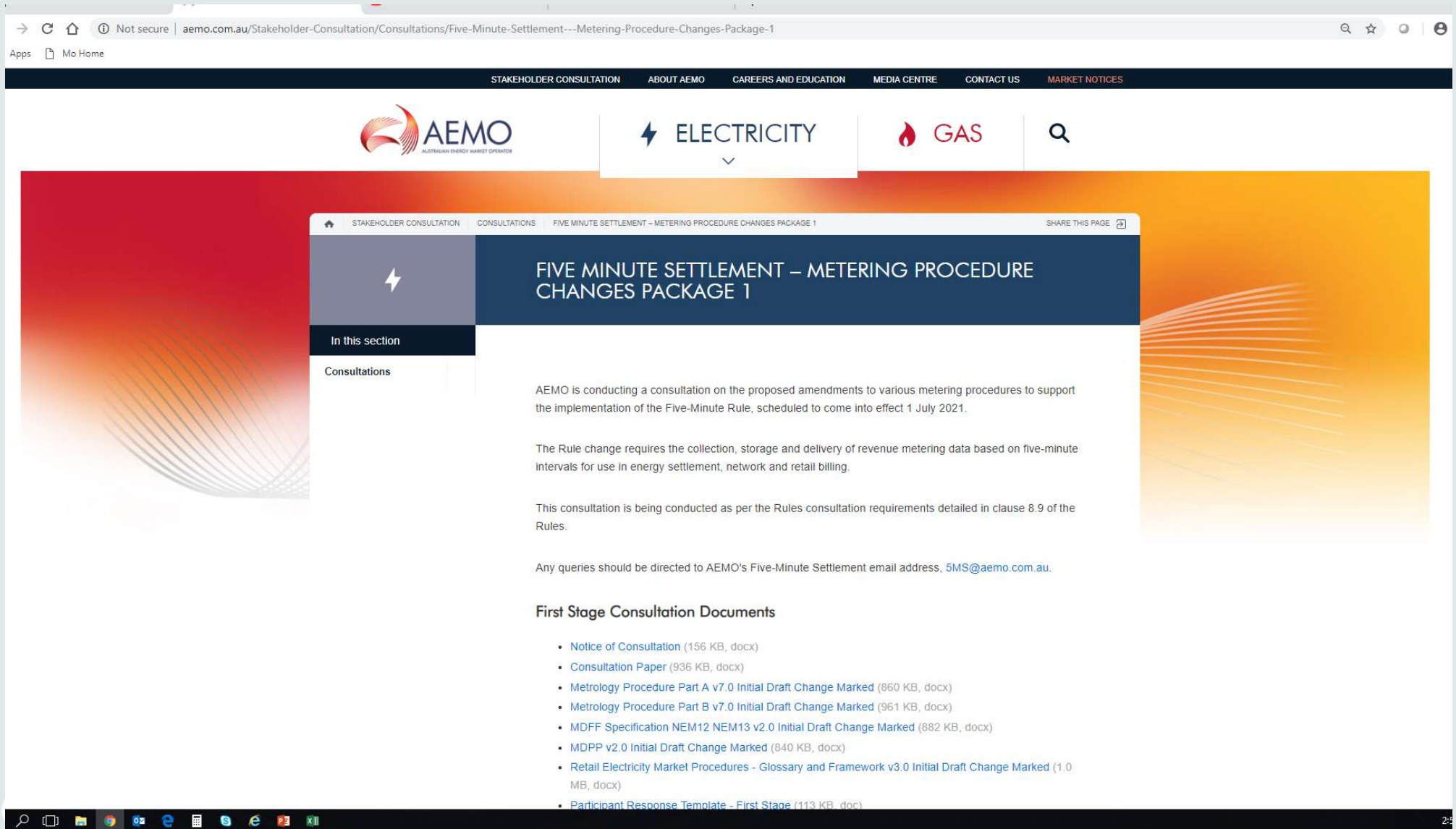
Key dates	
Publish consultation paper	31 October 2018
Submissions due	28 December 2018
Publish draft procedure and draft determination	30 January 2019
Submissions due	15 February 2019
Publish final procedure and final determination	22 March 2019

Documents in package – link to current version	High Level Impact Assessment
<a href="#">Metrology Procedure Part A **</a>	<a href="#">HLIA - Metrology Procedure Part A (82 KB, docx)</a>
<a href="#">Metrology Procedure Part B **</a>	<a href="#">HLIA - Metrology Procedure Part B (82 KB, docx)</a>
<a href="#">MDFF Specification - NEM 12 and NEM 13</a>	<a href="#">HLIA - MDFF Specification - NEM 12 and NEM 13 (82 KB, docx)</a>
<a href="#">Retail Electricity Market Glossary and Framework **</a>	<a href="#">HLIA - Retail Electricity Market Glossary and Framework (82 KB, docx)</a>
<a href="#">Meter Data Provision Procedure</a>	<a href="#">HLIA - Meter Data Provision Procedure (82 KB, pdf)</a>





# 5MS consultation landing page (3)



The screenshot displays the AEMO (Australian Energy Market Operator) website. The main navigation bar includes links for STAKEHOLDER CONSULTATION, ABOUT AEMO, CAREERS AND EDUCATION, MEDIA CENTRE, CONTACT US, and MARKET NOTICES. The AEMO logo is prominently displayed, along with icons for ELECTRICITY and GAS. The page is titled "FIVE MINUTE SETTLEMENT – METERING PROCEDURE CHANGES PACKAGE 1".

**Five Minute Settlement – Metering Procedure Changes Package 1**

**In this section**

**Consultations**

AEMO is conducting a consultation on the proposed amendments to various metering procedures to support the implementation of the Five-Minute Rule, scheduled to come into effect 1 July 2021.

The Rule change requires the collection, storage and delivery of revenue metering data based on five-minute intervals for use in energy settlement, network and retail billing.

This consultation is being conducted as per the Rules consultation requirements detailed in clause 8.9 of the Rules.

Any queries should be directed to AEMO's Five-Minute Settlement email address, [5MS@aemo.com.au](mailto:5MS@aemo.com.au).

**First Stage Consultation Documents**

- [Notice of Consultation](#) (156 KB, docx)
- [Consultation Paper](#) (936 KB, docx)
- [Metrology Procedure Part A v7.0 Initial Draft Change Marked](#) (860 KB, docx)
- [Metrology Procedure Part B v7.0 Initial Draft Change Marked](#) (961 KB, docx)
- [MDFF Specification NEM12 NEM13 v2.0 Initial Draft Change Marked](#) (882 KB, docx)
- [MDPP v2.0 Initial Draft Change Marked](#) (840 KB, docx)
- [Retail Electricity Market Procedures - Glossary and Framework v3.0 Initial Draft Change Marked](#) (1.0 MB, docx)
- [Participant Response Template - First Stage](#) (113 KB, doc)

# Consultations

## 5MS Metering package 1

- Draft Report & Notice of second stage consultation published on the 30 January 2019
  - On the proposed amendments to various metering procedures to support the implementation of 5MS
- Submissions on Draft Report due 15 February 2019
- Final report to be published 22 March 2019

## 5MS Settlements package – Estimates

- Draft Report & Notice of second stage consultation will be published on 19 February 2019
- Final report will be published 4 April 2019

## 5MS Settlements package – Revisions

- Consultation commenced on 14 December 2018
- Submissions due next week on 22 February 2019

## 5MS Settlements package – Reallocations

- One round of consultation, commenced 21 December 2019 and concluded 1 February 2019
- 3 submissions received, all supportive of AEMO's recommendations
- Final notice and procedures will be published late February

# SRA Auction Participation Agreement

Austin Tan

# Settlement Residue Auction Rules

- The Settlement Residue Auction Rules (Auction Rules) sets out the procedures and mechanisms for operating the Settlements Residue Auction (SRA), as required by clause 3.18.3 of the NER
- The Auction Participation Agreement (APA) is Schedule 1 of the Auction Rules and documents the agreement between AEMO and eligible market participants concerning the conditions for participating the SRA.
- Published Rules link: [http://www.aemo.com.au/-/media/Files/PDF/SRA Settlements Residue Auction Rules 07 11 14.pdf](http://www.aemo.com.au/-/media/Files/PDF/SRA%20Settlements%20Residue%20Auction%20Rules%2007%2011%2014.pdf)

# Changes due to 5MS

- Proposed change to the APA will provide clarification to *Clause 16.5\** to prevent new auction participants from using this clause as an exit strategy.
- The change will clarify that this new clause will not apply to:
  - Changes that commence operation before the start of the term of the SRDA.
  - Changes that are made before or published publicly before the start of the term of the SRDA but only commence operation during the term of the SRDA.
- The effective date of the amended APA will commence after the SRA secondary auction project is live. This is to allow time for auction participants to transition to the new APA amended for SRA secondary auctions.

\*Clause 16.5 - of the APA allows auction participants to terminate a Settlements Residue Distribution Agreement (SRDA) if there is a change in the way in which the settlement residue is calculated during the term of the SDRA. As Five-Minute Settlement and Global Settlement will change how settlement residues are calculated, this will give participants the ability to terminate the relevant SDRA under the existing arrangements.

# Proposed consultation approach

Deliverables	Indicative date
Issues paper published	22 March 2019
Submissions due on Issues paper	27 May 2019
Draft Report published	25 June 2019
Submissions due on Draft Report	16 July 2019
Final Report published	5 August 2019

# Prudentials Procedures Update

Austin Tan

# Prudentials procedures

## 1. Settlement Estimation Procedures

- First round of consultation complete (responses were due back 21 January 2019).
- Do not anticipate any changes to the procedures from what was consulted on.
- Aim to publish next round of consultation (draft report and procedures) 19 February 2019

## 2. Reallocations Procedures (EDOR and SOOR)

- First round of consultation complete (response were due back 1 February).
- No major changes to the procedures anticipated based on received submissions
- Key changes:
  - Change all 30 minute references to TI and 48 period IDs to 288 period IDs.
  - Addition of transitional arrangements for moving to 5MS e.g. how 30min contracts could be represented in 5 minute reallocations
  - New definition of Calendars to allow for regional calendars.
- Aim to publish final procedures in late February 2019.
- Ongoing conversation with participants regarding the system design aspects of reallocations.

## 3. Credit Limit Procedures (CLP)

- Aim to publish first round consultation documents 3 April 2019 (only 1 round of consultation anticipated).
- Straightforward change over of all 30 minute references to TI.
- No other substantive changes anticipated.



# Global Settlements Procedure and Guideline

Austin Tan

# New UFE procedures/guides overview

	<i>UFE Reconciliation Guide</i>	<i>UFE Reporting Guide</i>
<b>Description</b>	<ul style="list-style-type: none"> <li>A new procedure to be developed by AEMO outlining the approach to publishing information that allows market customers to verify allocated UFE volumes.</li> </ul>	<ul style="list-style-type: none"> <li>A new guideline to be developed by AEMO on the approach to preparing the UFE trends report.</li> </ul>
<b>Rules requirement</b>	<ul style="list-style-type: none"> <li><b>NER 3.15.5 (d)</b> - AEMO must publish information to enable each <i>Market Customer</i> in a <i>local area</i> to verify the unaccounted for energy amounts allocated to that <i>Market Customer's</i> market connection points in that <i>local area</i> under paragraph (b) for each <i>trading interval</i> in accordance with a procedure developed and published by AEMO.</li> </ul>	<ul style="list-style-type: none"> <li><b>NER 3.15.5B (d)</b> - AEMO must determine, maintain and publish UFE reporting guidelines that set out AEMO's approach to preparing and publishing the report required under paragraph (a), including how the purpose of the report will be achieved.</li> <li>AEMO is not required to comply with the UFE reporting guidelines for the first report</li> </ul>
<b>Rules Consultation?</b>	<ul style="list-style-type: none"> <li>No</li> </ul>	<ul style="list-style-type: none"> <li>Yes – NER 3.15.5B (e)</li> </ul>
<b>Key dates</b>	<ul style="list-style-type: none"> <li>1 July 2021 - UFE data must be published, UFE adjustment procedure due</li> </ul>	<ul style="list-style-type: none"> <li>1 March 2022 - First annual UFE trends report due (NER 11.112.3)</li> <li>1 December 2022 - UFE reporting guidelines due (NER 11.112.6)</li> </ul>
<b>Stakeholder consultation</b>	<ul style="list-style-type: none"> <li>Initial engagement with industry through the Settlements Focus Group</li> </ul>	<ul style="list-style-type: none"> <li>Initial engagement with industry through the Settlements Focus Group</li> </ul>

# Metering Procedures Update

David Ripper

# Metering Procedures Update – Package 1 Consultation

- AEMO received 15 submissions (including two late submissions) from Retailers, LNSPs, Meter Providers, Meter Data Providers and intending participants.
- AEMO identified three material issues
  - The proposed profiling approach for 15 and 30-minute interval meters
  - Changes to the delivery of meter data to AEMO
  - Industry standard optical port performance and the volume of metering data stored in a metering installation.
- Jurisdictional amendments to the Metrology Procedures, submitted to AEMO by the COAG Energy Council, were also included in the Draft Procedure changes
- MDFF file size update:
  - MDFF 1MB file size will become inappropriate in the medium to long term following the start of 5MS on 1 July 2021 due to the increasing amount of interval meters deployed in the NEM
    - B2BWG recommends that the IEC make a formal B2B Recommendation of no change at this stage to the B2B Procedures from 5MS
    - AEMO & Industry analysis ongoing regarding the preferred file size in a 'mature' 5MS/GS environment

# Package 1 - Material Issues

Material Issue	Description	AEMO Analysis	AEMO Conclusion
The proposed profiling approach for 15 and 30-minute interval meters	<p>AGL questioned how 30-minute small customer generation (e.g. solar) should be profiled to five-minute levels and how this profiling would ultimately impact the net system load profile (NSLP).</p> <p>AGL had undertaken some initial analysis of five-minute and 30-minute solar data and determined that there could be at least a 10% error rate. Its analysis also suggested that the error rate would be greater during the dusk and dawn periods, coinciding with increased consumer usage.</p>	<p>Broad support was received for AEMO's proposed profiling approach for 15 and 30-minute meter reads.</p> <p>The magnitude of any imbalance that occurs within a 15 or 30-minute period is likely to be small in comparison to the imbalances that occur across a 3-month accumulation read.</p> <p>Additional discussions with AGL are planned to occur once AGL has completed its 'second round' of analysis.</p> <p>No alternative profiling approach was proposed by AGL or other stakeholders.</p>	As no preferred alternative has been identified, AEMO will maintain its proposed profiling approach.

# Package 1 - Material Issues

Material Issue	Description	AEMO Analysis	AEMO Conclusion
Changes to the delivery of meter data to AEMO	AEMO proposed to more closely align the MDP's meter data delivery processes for AEMO and market participants.	<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 in the Draft Determination:</p> <ul style="list-style-type: none"> <li>- MDFF NEM12 files to be the required file format for all interval meter data being delivered to AEMO from 1 July 2021</li> <li>- NEM12 Meter data to be delivered as per the meter's configuration i.e. 5, 15 or 30-minute meter data intervals from 1 July 2021</li> <li>- MDFF NEM13 files to be supported by AEMO from 1 July 2021 however AEMO to continue to support and accept MDMF files for Basic meter reads</li> </ul>

# Package 1 - Material Issues

Material Issue	Description	AEMO Analysis	AEMO Conclusion
Changes to the delivery of meter data to AEMO	AEMO proposed an arrangement that seeks to align the delivery of meter data for market settlement with existing formats used for B2B	<p>Stakeholder feedback has been very strong in supporting AEMO's objective to more closely align the MDP's meter data delivery processes to AEMO and market participants.</p> <p>Granularity of meter data, being provided to AEMO, is becoming more important in supporting its core functions, 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 certain alignments may be best implemented progressively over an appropriate period of time.</p>	<p>Proposed changes for the Draft Determination:</p> <ul style="list-style-type: none"> <li>- Meter data to be delivered consistently by MDPs to both AEMO and market participants i.e. MDPs must put in place processes to ensure meter data version alignment between AEMO and other market participants</li> <li>- AEMO to support receiving energy and non-energy register level meter data from 1 July 2021, even where the CATS NMI Data Stream records are at the Net level</li> <li>- Net data stream records to be progressively replaced by Register level data stream records in the CATS NMI Data Stream (CNDS) table, with the aim of having a sunset period for this transition to occur.</li> </ul>

# Package 1 - Material Issues

Material Issue	Description	AEMO Analysis	AEMO Conclusion
Optical port and the volume of meter data storage	Landis+Gyr noted that the requirements outlined in Metrology Procedure Part A clause 3.2, section C, were incompatible with the industry standard optical port and the volume of metering data stored in a metering installation.	AEMO agrees that the timeframe to download 90 days of interval metering data, currently stated in Metrology Procedure: Part A clause 3.2(c), may not be achievable for 5-minute metering data.	AEMO proposes to change the download to 90 seconds or less per Datastream.



# Consultation Timings and upcoming meetings

- Package 1 – Submissions due on the Draft 15 February 2019 (Final Report published 22 March 2019)
- Package 2 – Considers impacts from 5MS & GS Rules – April 2019 (Consultation as per NER 8.9)
  - **Note**
    - Some Procedures will require amendments with different effective dates. In these instances we plan on providing 2 versions of the Initial Draft Procedures with the Issues Paper e.g. version 1.0 of a specific procedure may be change marked to include any 5MS related changes (with an effective date of 1 July 2021) whereas version 2.0 of the procedure may use the 'clean' version of version 1.0 to then communicate the GS changes (with an effective date of 6 Feb 2022).
    - Metering Installation Data Storage Exemption Procedure will now be a separate procedure - We originally advised Participants that it would be included in Metrology Procedure: Part A but the Exemption procedure actually has a finite life and ends by 1 July 2021. Exemptions can only be granted for Types 1, 2, and 3 and the sub-set of type 4. As these are all to be producing 5-minute metering data by 1 July 2021, no further exemptions will be granted after that date. We therefore can't include this Exemption Procedure in the Metrology Procedure that becomes effective from 1 July 2021.
- Package 3 – Considers impacts from 5MS & GS Rules – April 2019 (**Publish Only**)
- Only two responses received to date, from LR and DNSPs (Endeavour and EA), relating to the off-market unmetered load information provision requested back in November last year.
- Next Metering Focus Group workshop – Late February/Early March

# Reconciliation and profiling

Blaine Miner

# Reconciliation and profiling

## Background

- Energy Queensland (Retail) approached AEMO late last regarding a potential 'Profiled Meter Data Delivery' proposal
- Momentum Energy also mentioned in their Metering P1 consultation response that their preference was for AEMO to provide two sets of meter data feeds, from 1 July 2021, one which had been profiled and the other data set as provided by the MDP
- With this in mind, AEMO has been considering:
  - The current level of reconciliation support it provides to the market today
  - What opportunities may exist to enhance this level of support in a 5MS/GS environment
  - How proposals, such as the ones raised by Ergon and Momentum, should be captured and assessed going forward, including:
    - Value proposition
    - Delivery channel
    - Industry and Program implications

## Next Steps

- AEMO is seeking the PWG's support in AEMO running a workshop which focuses specifically on reconciliation related activities, including:
  - The reconciliation challenges Retailers may encounter in a 5MS/GS environment
  - Opportunities in addressing these potential issues
  - What support Retailers may require from AEMO and other market participants in a 5MS/GS world
  - The new GS UFE publishing and trend analysis requirements
- For this workshop to be successful, representatives will need to have an in-depth understanding of settlements and billing reconciliation activities

# Spot Market Operations Timetable Consultation

Michael Sanders

# Spot Market Operations Timetable Consultation

- The Spot Market Operations Timetable specifies the schedule for:
  - Operating the spot market
  - Publishing market information
- National Electricity Amendment (Five-Minute Settlement) Rule 2017 No.15 mandates five-minute pre-dispatch
- AEMO believes this requires a change to the timetable
- NER 3.4.3 requires a Rules consultation before the timetable can be changed
- AEMO does not expect the consultation to be complicated because the contents of the timetable are based on the contents of the Rules
- An issues paper and draft timetable will be published in Q1 2019

# Dispatch – Miscellaneous Package

Michael Sanders

# Dispatch – Miscellaneous Package

Procedure	Description	HLIA
1. NEMDE Non-Physical Loss Model Solver Changes	Treatment of non-physical losses on regulated interconnectors	No longer relevant – non-physical losses eliminated by new solution technique
2. MNSP NPL Model Business Specification	Treatment of non-physical losses on MNSPs	No longer relevant – non-physical losses eliminated by new solution technique
3. Efficient Dispatch and Localised Recovery of Regulation FCAS	Cost sharing between regulation and delayed FCAS, and between local and global regulation FCAS requirements	Terminology changes
4. Demand Terms in EMMS Data Model	Definitions of different NEM demands and how they are calculated	Terminology changes
5. Guide to Mis-pricing Information Resource	Definition of mis-pricing, how it is calculated and where data is published	Terminology changes
6. Treatment of Dispatchable Loads in the NEM	Bidding and dispatch for scheduled loads	Terminology changes
7. Automation of Negative Residue Management	Use of automated constraints to reduce the accumulation of negative residues	Terminology and system changes

# General questions

Emily Brodie



# Forward meeting plan

Emily Brodie

# Upcoming meetings

- Procedures working group meetings:
  - Tuesday, 12 March 2019
  - Friday, 12 April 2019
- Procedures focus groups:
  - Dispatch focus group – 15 February 2019, Sydney
  - Metering focus group – Q1 2019, TBC
  - Settlements focus group – Q1 2019, TBC
- Next Program Consultative Forum
  - Friday 8<sup>th</sup> March 2019
- Next Executive Forum
  - Wednesday 20<sup>th</sup> February 2019
- 5MS Meetings and Forum Dates:  
<http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>

## Five Minute Settlements Project: High-Level Impact Assessment

Document Title		TNSP Negative Settlement Residue Procedure	
Rule Consultation Req.	No	Priority	Low
Prepared by	Dimi Botha	Business Owner	Settlements
Consultation Group	<ul style="list-style-type: none"> <li>PWG</li> <li>TNSPs</li> </ul>	Consultation Package	Settlements - TNSP
Link	<a href="https://www.aemo.com.au/media/Files/Other/settlements/NEM_TNSP_Negative_Settlements_Residue_Procedure.pdf">https://www.aemo.com.au/media/Files/Other/settlements/NEM_TNSP_Negative_Settlements_Residue_Procedure.pdf</a>		

Description of Document	The procedure outlines the process to enable AEMO to recover amounts arising from negative inter-regional and intra-regional settlements residues in a timeframe that minimises the impact on the settlement of Market Participants.		
Precedent Procedures / External Document	N/A	Dependent Procedures / External Document	<ul style="list-style-type: none"> <li>Dispatch SO_OP3705,</li> <li>Allocation and Distribution of Settlements Residue Guide</li> </ul>
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Update of worked example in section 6.1 to align quantities with 5-minute trading interval times. Changes are underlined below:  <i>'An interconnector between 2 regions with a flow of 1000MW (i.e. <u>83MWh</u> per trading interval)</i>  <i>Prices in the regions are \$10,000 and \$100 (flow from higher to lower priced region)</i>  <i>Negative Residue = <u>83MWh</u> x (\$10,000 - \$100) = <u>\$0.825 Million</u> per trading interval</i>  <i>The residue would be limited by the cumulative price threshold being exceeded, however could reach <u>\$0.825 Million</u> x <u>90</u> = <u>\$74 Million</u>'</i> </li> </ul>		
Five Minute settlements additional comments	<ul style="list-style-type: none"> <li>AEMO has considered the impact of 5-minute intervals on the \$100,000 prepayment threshold in regard to shortfall risk. Upon further investigation it was found that the current risk matrix is sufficient and no update is required for threshold value. <ul style="list-style-type: none"> <li>As a result no amendment to related procedure Dispatch SO_OP3705 in regard to the \$100,000 threshold.</li> </ul> </li> <li>Methodology for the Allocation and Distribution of Settlements Residue Guide is also referenced in this procedure. It is noted that the worked example in this process will need to be updated to align with 5-minute intervals.</li> </ul>		

Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	• TNSP	AEMO Business Units Impacted	Settlements
Issues for Stakeholder Consultation	N/A		
System Impact	N/A		

## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Settlement Residue Auction Rules: Auction Participant Agreement		
Rule Consultation Req.	Yes	Priority	High
Prepared by	Andrea Jenz	Business Owner	Settlements
Consultation Group	SRC, PWG	Consultation Package	Settlements - SRA
Link	Published Settlement Residue Auction Rules: <a href="http://www.aemo.com.au/-/media/Files/PDF/SRA_Settlements_Residue_Auction_Rules_07_11_14.pdf">http://www.aemo.com.au/-/media/Files/PDF/SRA_Settlements_Residue_Auction_Rules_07_11_14.pdf</a>		

Description of Document	<ul style="list-style-type: none"> <li>The Settlement Residue Auction Rules (Auction Rules) sets out the procedures and mechanisms for operating the Settlements Residue Auction (SRA). The Auction Rules have been developed by AEMO in accordance with the National Electricity Rules (NER) 3.18.3. The Auction Participation Agreement (APA) is Schedule 1 of the Auction Rules and documents the agreement between AEMO and eligible market participants concerning the conditions for participating the SRA.</li> </ul>		
Precedent Procedures / External Document	N/A	Dependent Procedures / External Document	N/A
Summary of Potential Change Five-Minute Settlement and Global Settlement	<p>The proposed change to the APA will provide clarification to <i>clause 16.5*</i> to prevent new auction participants from using this clause as an exit strategy. The change will clarify that this new clause will not apply to:</p> <ul style="list-style-type: none"> <li>Changes that commence operation before the start of the term of the SRDA.</li> <li>Changes that are made before or published publicly before the start of the term of the SRDA but only commence operation during the term of the SRDA.</li> </ul> <p>* <i>Clause 16.5</i> of the APA allows auction participants to terminate a Settlements Residue Distribution Agreement (SRDA) if there is a change in the way in which the settlement residue is calculated during the term of the SDRA. As Five-Minute Settlement and Global Settlement will change how settlement residues are calculated, this will give participants the ability to terminate the relevant SDRA under the existing arrangements.</p>		
External Stakeholder Impacted	<ul style="list-style-type: none"> <li>SRC</li> <li>TNSP</li> <li>Auction participants</li> </ul>	AEMO Business Units Impacted	Settlements
Issues for Stakeholder Consultation	N/A		

System Impact	Changing the Rules has no direct impact to the system, however, the calculation of the residues will change to 5 minutes from 30 minutes as part of the 5MS rule change.
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## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Spot Market Operations Timetable		
Rule Consultation Req.	Yes	Priority	Medium
Prepared by	Michael Sanders	Business Owner	EMM
Consultation Group	Dispatch	Consultation Package	Spot market
Link	<a href="http://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Spot-Market-Operations-Timetable.pdf">http://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Spot-Market-Operations-Timetable.pdf</a>		

Description of Document	The purpose of the document is to specify the timetable for operating the spot market and publishing market information. The document is made in accordance with NER 3.4.3. It also incorporates NER 3.8.9(d) – use of a prior dispatch offer as a substitute for a default dispatch offer.		
Precedent Procedures / External Document	NER	Dependent Procedures / External Document	
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Terminology changes to comply with change to 5-minute settlement</li> <li>Addition of 5-minute pre-dispatch</li> <li>Transitional bidding arrangements</li> </ul>		
Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	All NEM participants	AEMO Business Units Impacted	Markets, IT Development

Issues for Stakeholder Consultation	Implementation of transitional arrangements.
System Impact	Yes



## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Efficient Dispatch and Localised Recovery of Regulation Services Business Specification		
Rule Consultation Req.	No	Priority	Low
Prepared by	Michael Sanders	Business Owner	EMM
Consultation Group	Dispatch	Consultation Package	Dispatch – Miscellaneous
Link	<a href="http://www.aemo.com.au/-/media/Files/PDF/0160-0049-pdf.pdf">http://www.aemo.com.au/-/media/Files/PDF/0160-0049-pdf.pdf</a>		

Description of Document	Describes in detail the processes by which: <ul style="list-style-type: none"> <li>Regulation and delayed FCAS costs are recovered when regulation FCAS is enabled to provide delayed FCAS</li> <li>Regulation FCAS costs are recovered when there are local regulation FCAS requirements</li> </ul>		
Precedent Procedures / External Document	NER	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Terminology changes to reflect the shift from dispatch prices → spot prices, dispatch interval → trading interval, trading interval → 30-minute period, spot price → 30-minute price</li> </ul>		
Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	No	AEMO Business Units Impacted	EMM, EMMS, P&GR
Issues for Stakeholder Consultation	None		
System Impact	No		

## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Demand Terms in EMMS Data Model		
Rule Consultation Req.	No	Priority	Medium
Prepared by	Michael Sanders	Business Owner	EMM
Consultation Group	Dispatch	Consultation Package	Dispatch – Miscellaneous
Link	<a href="http://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Policy_and_Process/Demand-terms-in-EMMS-Data-Model.pdf">http://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Policy_and_Process/Demand-terms-in-EMMS-Data-Model.pdf</a>		

Description of Document	Describes the different types of demand used in the NEM and the terms in the EMMS Data Model which are used to construct each type of demand.		
Precedent Procedures / External Document	N/A	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Terminology changes to reflect the shift from dispatch prices → spot prices, dispatch interval → trading interval, trading interval → 30-minute period, spot price → 30-minute price</li> </ul>		
Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	No	AEMO Business Units Impacted	EMM, EMMS
Issues for Stakeholder Consultation	None		
System Impact	No		

## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Guide to Mis-Pricing Information Resource		
Rule Consultation Req.	No	Priority	Medium
Prepared by	Michael Sanders	Business Owner	EMM
Consultation Group	Dispatch	Consultation Package	Dispatch – Miscellaneous
Link	<a href="http://www.aemo.com.au/-/media/Files/PDF/0150-0148-pdf.pdf">http://www.aemo.com.au/-/media/Files/PDF/0150-0148-pdf.pdf</a>		

Description of Document	Defines mis-pricing and describes how it is calculated.		
Precedent Procedures / External Document	NER	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Terminology changes to reflect the shift from dispatch prices → spot prices, dispatch interval → trading interval, trading interval → 30-minute period, spot price → 30-minute price</li> </ul>		
Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	No	AEMO Business Units Impacted	EMM, EMMS, C&GM
Issues for Stakeholder Consultation	None		
System Impact	No		

## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Treatment of Dispatchable Loads in the NEM		
Rule Consultation Req.	No	Priority	Low
Prepared by	Michael Sanders	Business Owner	EMM
Consultation Group	Dispatch	Consultation Package	Dispatch – Miscellaneous
Link	<a href="http://www.aemo.com.au/-/media/Files/PDF/0140-0047-pdf.pdf">http://www.aemo.com.au/-/media/Files/PDF/0140-0047-pdf.pdf</a>		

Description of Document	Describes the treatment of scheduled loads in the NEM. (Publication of this document was a pre-condition for market start. There is no analogous document for scheduled generators in the NEM.)		
Precedent Procedures / External Document	NER	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Terminology changes to reflect the shift from dispatch prices → spot prices, dispatch interval → trading interval, trading interval → 30-minute period, spot price → 30-minute price</li> </ul>		
Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	No	AEMO Business Units Impacted	EMM, EMMS
Issues for Stakeholder Consultation	None		
System Impact	No		

## Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Brief on Automation of Negative Residue Management		
Rule Consultation Req.	No	Priority	Low
Prepared by	Michael Sanders	Business Owner	EMM
Consultation Group	Dispatch	Consultation Package	Dispatch – Miscellaneous
Link	<a href="https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Policy_and_Process/2018/Brief-on-Automation-of-Negative-Residue-Management.pdf">https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Policy_and_Process/2018/Brief-on-Automation-of-Negative-Residue-Management.pdf</a>		

Description of Document	Describes the use of automated constraints to mitigate the accumulation of negative residues, including the conditions for the constraints to be invoked, and the associated data that is published.		
Precedent Procedures / External Document	N/A	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> <li>Changes to calculation of the accumulation trigger to reflect the five-minute settlement rule changes.</li> <li>Terminology changes to reflect the shift from dispatch prices → spot prices, dispatch interval → trading interval, trading interval → 30-minute period, spot price → 30-minute price</li> </ul>		
Summary of Potential Changes – Global Settlements	N/A		
External Stakeholder Impacted	No	AEMO Business Units Impacted	EMM, EMMS
Issues for Stakeholder Consultation	None		
System Impact	No		