

AGENDA

MEETING: 5MS PROGRAM – PROCEDURES WORKING GROUP #2

DATE: THURSDAY, 13 SEPTEMBER 2018

TIME: 12:15PM – 2:15PM AEST

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

TELECONFERENCE: DIAL: **02 6194 9930** ACCESS CODE: **670629**

MEMBERS: NOMINATIONS AS LISTED

No.	Agenda Item	Paper	Responsible	Action
Preliminary Matters				
1	Welcome, introductions and apologies		Emily Brodie	Note
2	Minutes and actions from previous meeting	<i>Presentation Minutes from 27 August PWG</i>	Emily Brodie	Note
Matters for Noting				
3	Procedures workstream update	<i>Presentation</i>	Emily Brodie	Note
Matters for Discussion				
4	PCF delegated item – 5MS drafting amendments	<i>Presentation</i>	Emily Brodie	Discuss
5	Settlements procedures - Prudentials	<i>Presentation High level impact assessments</i>	Katalin Foran	Discuss
Other Business				
6	General questions		Emily Brodie	Discuss
7	Forward meeting plan	<i>Presentation</i>	Emily Brodie	Note

Next meeting: **11 October 2018**

5MS Program – Procedures Working Group Membership List - 6 Sep 18

Full Name	Company
Balwant Singh	Active Stream Pty Limited
Dan Mascarenhas	AGL Energy Limited
Chris Streets	AGL Energy Services
Anders Sangkuhl	Alinta Energy Retail Sales Pty Ltd
Scott Sheehan	Arrow Energy Trading Pty Ltd
Kevin Boutchard	Aurora Energy Pty Ltd
Paul Willacy	Aurora Energy Pty Ltd
Wayne Turner	Ausgrid
Justin Betlehem	AusNet Services
Rhianna Findlay	AusNet Services
Dino Ou	Endeavour Energy
Matthew Parker	Endeavour Energy
Andrew Godfrey	Energy Australia Pty Ltd
Georgina Snelling	Energy Australia Pty Ltd
Ingrid Farah	Ergon Energy Corporation Limited
Damien Lynch	Ergon Energy Queensland Pty Ltd
Dannii Upham	Ergon Energy Queensland Pty Ltd
Jane Hutson	Ergon Energy Queensland Pty Ltd
Sharleen Flanagan	ERM Power Limited
Tim Lloyd	Essential Energy
Tony Woolfe	Essential Energy
Andrew Jumeau	Evoenergy
Jeff Roberts	Evoenergy
Divya Kapoor	Flow Power
Martin Ralph	Hydro Tasmania (Hydro-Electric Corporation)
Prateek Beri	Hydro Tasmania (Hydro-Electric Corporation)
Ty Crowhurst	intelliHUB Pty Ltd
Robert Pane	InterGen Pty Ltd
Mohanraj Kuppusamy	Jemena Electricity Networks (Vic) Limited
Mohan Kuppusamy	Jemena Limited
Rajiv Balasubramanian	Jemena Limited
Jason Pereira	Landis & Gyr Pty Ltd
Stephanie Lommi	Lumo Energy Australia Pty Ltd
Jonathan Briggs	Metering Dynamics
Chantal Wright	Momentum Energy Pty Limited
Dean Lane	Origin Energy Limited
Shaun Cole	Origin Energy Limited
Linda Brackenbury	Plus ES
Greg Szot	Powercor Australia Ltd
Haiden Jones	Powershop Australia Pty Ltd
David Woods	SA Power Networks
Richard Metherell	Secure Meters (Australia) Pty Ltd
Justin Stute	Select Data and Measurement Solutions
Neville Lewis	Select Data and Measurement Solutions
Aakash Sembey	Simply Energy
Panos Priftakis	Snowy Hydro Limited

Adam Gritton	Stanwell Corporation Limited
Adam Neilson	Stanwell Corporation Limited
Oliver Jessup	Stanwell Corporation Limited
Ricky Brooks	Stanwell Corporation Limited
Adrian Honey	TasNetworks
Piera Lorenz	Telstra
Marcelle Gannon	Tilt Renewables
Paul Greenwood	Vector Advanced Metering Services (Australia) Pty Ltd
John Chiodo	ZEN Energy



5MS Procedures Working Group #2

Thursday, 13 September 2018

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

DIAL IN: 02 6194 9930 ACCESS CODE: 670629

Agenda

NO	TIME	AGENDA ITEM	RESPONSIBLE
Preliminary Matters			
1	12:15pm – 12:25pm	Welcome, introduction and apologies	Emily Brodie (AEMO)
2	12:25pm – 12:35pm	Minutes and actions from previous meeting	Emily Brodie (AEMO)
Matters for Noting			
3	12:35pm – 12:45pm	Procedures workstream update	Emily Brodie (AEMO)
Matters for Discussion			
4	12:45pm – 1:15pm	PCF delegated item – 5MS drafting amendments	Emily Brodie (AEMO)
5	1:15pm – 1:45pm	Settlements procedures - Prudentials	Katalin Foran (AEMO)
Other business			
6	1:45am – 2:10pm	General questions	Emily Brodie (AEMO)
7	2:10pm – 2:15pm	Forward meeting plan	Emily Brodie (AEMO)

Minutes and actions from previous meeting

Emily Brodie

Procedures workstream update

Emily Brodie

Procedures Workstream

5 MINUTE SETTLEMENT PROCEDURES TRACKING	TIMING					CONTENT
	HLIA	PWG Engagement	Consultation paper	Draft documents	Final documents	Package content
METERING						
1. Metering - Metering Data & Metrology	Jul-18	Jul-18	Sep-18	Nov-18	Jan-19	
2. Metering - MSATS and SLPs	Jul-18	Nov-18	Feb-19	May-19	Jul-19	
3. Metering - Miscellaneous*	Jul-18	Feb-19	Mar 19*	n/a	Jul-19	
SETTLEMENTS						
SRA	Jun-18	Jul-18	n/a	Jul-18	Aug-18	
TNSP	Mar-19	Apr-19	Jun-19	Aug-19	Oct-19	
Estimation	Aug-18	Aug-18	Nov-18	Jan-19	Mar-19	
Reallocations	Dec-18	Mar-19	Apr-19	Jun-19	Aug-19	
Miscellaneous	Oct-18	Oct-18	Dec-18	Mar-19	Jun-19	
Prudentials	Aug-18	Sep-18	Nov-18	Jan-19	Mar-19	
DISPATCH						
1. Dispatch - Bids/Offers*	Jul-18	Jul 18 ongoing	n/a	n/a	Jan-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 - Specifications*	Jan-19	Feb-19	n/a	n/a	Jun-19	
5. Dispatch - Miscellaneous*	Jan-19	Feb-19	n/a	n/a	Jun-19	
POWER SYSTEM OPS						
1. Operations - Miscellaneous*	TBA	Apr 19 ongoing	n/a	n/a	Jul-19	
	TIMING			CONTENT		
*no rules consultation required	Started and on track			No issues		
	Started late			Issues		
	Overdue			Severe issues		

Consultations

Dispatch - Intervention pricing methodology

- The proposed Intervention Pricing Methodology includes edits to accommodate the change to 5MS and remove any need for further consultation because of that change.
- Two submissions received on Issues Paper, both supportive
- Final stage of consultation underway:
<http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Intervention-Pricing-Methodology-Consultation?Convenor=AEMO%20NEM>
- Submissions due Tuesday 18 September 2018
- Final report will be published 1 October 2018

Potential drafting amendments

Emily Brodie

Actions arising from PCF meeting: 5MS potential drafting amendments

- Actions from PCF meeting on 8 August:
 - **Industry** to consider all potential drafting amendments and provide details to assist AEMO to make representation to the AEMC.
 - **AEMO** to accommodate plan to include drafting amendments into procedures.
- PCF is seeking input from the PWG on the potential 5MS drafting amendments, particularly around a bidding data soft cutover.

Potential drafting amendments to the 5MS rule

	Initiating Party	Issue	NER Chapter	NER Clause	Status
1	AEMO	5MS rule is inconsistent with the meter storage exemption policy set out in final determination	7	New clause 7.8.2(a1)	Closed. AEMC has re-published amending rule to reflect policy, see opening note on 5MS final rule.
2	AEMO	AEMO using 5 minute data to calculate MLFs would add a lot of cost and not much value	3	3.6.2(e)(4)	Open. 5MS rule will likely need amending.
3	AEMO	Allowing participants to submit 5 minute granularity bids/offers prior to 1 July 2021 to avoid 'big bang' cutover i.e. facilitate a soft cutover	3	3.8.1(b)(1) 3.8.6 3.8.6A 3.8.7 3.8.7A	Open. Approach will be informed by AEMO/industry consultation. See following slide for more detail. AEMC's view is that a soft cutover for bidding data is desirable to reduce the risk of market disruption at 'go-live'. However it will be important to understand whether there: <ul style="list-style-type: none"> would be any advantage or disadvantage to those participants submitting five minute bids/offers in relation to those who continued to provide 30 minute bids/offers is the potential for market outcomes to be affected.
4	Stakeholder	<p>Clause 3.8.20(g) requires that scheduled generators, scheduled NSPs and market customers 'must ensure' that they are able to dispatch their relevant plant under the pre-dispatch schedule.</p> <p>AEMO understands that there may be an issue to consider where the 5 minute and 30 minute pre-dispatch resolutions are divergent.</p>	3	3.8.20(g)	Open. Approach will be informed by AEMO/industry consultation. Propose that the PCF provide feedback to AEMO on the potential impact of this issue. AEMC's view is that no change is required and participants will still be required to ensure that they are able to dispatch the relevant plant as indicated in the pre dispatch schedule i.e. under both 5-minute and 30-minute resolutions.

Potential 5MS drafting amendments: Proposed consultation approach to bidding data soft cutover

Dispatch Focus Group (14th August) considered there should be a transitional period between 30-minute & five-minute bidding but the details need further work.

- Propose that Dispatch Focus Group reconvene to discuss in detail how a soft cutover would operate and what would be required for a clarifying amendment to the 5MS rule.
- AEMO's initial view is that the current rules do not preclude a soft cutover, however a clarifying amendment would be desirable.
- PWG/AEMO to have a more detailed conversation around the potential to submit a rule change request to the AEMC, informed by discussions at the Dispatch Focus Group.

Approach to updating prudential procedures

Katalin Foran

Prudentials packages

1. Credit Limit Procedures (CLP)
2. MCL calculator
3. Regional model data and CLP training materials

1. Credit Limit Procedures (CLP)

- CLP outlined in clause 3.3.8 of the National Electricity Rules (NER).
- CLP – the methodology by which AEMO determines the prudential settings for each Market Participant - i.e. the Maximum Credit Limit (MCL).
- The update of the CLP for 5MS is the key deliverable for prudentials.

Approach – CLP and 5MS

	Options considered	Benefits	Drawbacks	Comments
1	Update all references in the CLP referring to half hourly load, price and reallocations to reference five minute load, price and reallocations.	<ul style="list-style-type: none"> Methodology (and formulas) for calculations of market participant prudential settings remain unchanged. Aligns prudentials data architecture with 5MS data architecture – simple, clear and future ready. Market participant prudential requirements reflect actual market conditions/volatility. 	<ul style="list-style-type: none"> Costs associated with systems changes and updates of AEMOs internal prudential model. 	<ul style="list-style-type: none"> Over the long term the most robust option, reflective of 5MS. <u>Recommended</u>
2	Leave methodology unchanged and continue to perform calculation at 30 minute level.	<ul style="list-style-type: none"> Methodology (and formulas) for calculations of market participant prudential settings remain unchanged. Conceptually simpler. Less data to deal with within AEMO's prudentials model. 	<ul style="list-style-type: none"> Prudential requirements will not reflect actual market conditions/volatility. Requires system updates to create aggregated data, with associated costs. Aggregated 30 minute data would need to be retained/maintained separately. More complex, creates potential issues in the future. 	<ul style="list-style-type: none"> Would not reflect the transition to 5MS and likely to have undesirable consequences. <u>Not recommended</u>
3	Fundamental change to CLP	<ul style="list-style-type: none"> Potential to fix any current issues with the CLP. 	<ul style="list-style-type: none"> Significant time and costs associated with the development and implementation of any new prudentials methodology. 	<ul style="list-style-type: none"> AEMO has not identified sufficient merit in this option but would appreciate any feedback. <u>Not recommended</u>

CLP - Systems Impact (preferred approach)

- Data tables currently used for the MCL calculation will remain the same.
- Change will be the inclusion of more periodIDs (i.e. expanding from 48 to 288).
- The formulas for the MCL calculation will remain the same.
- Key task for AEMO once 5MS data is included is to ensure and test that MCLs are calculated properly using the expanded data set.
- AEMO will also have to update its internal LifeofNEM model, currently used to calculate the volatility factor percentiles, for which the methodology is described in the CLP.

2. MCL Calculator

- MCL calculator – Excel tool provided to market participants to estimate MCL ahead of time, using their own data.
- It is not used by AEMO to calculate market participant MCL (the calculation undertaken within AEMO systems).
- The change – increase data granularity from 30 minute to 5 minute intervals:
 - The RegionalData sheet updated regional level data is displayed at 5 minute intervals.
 - The ParticipantData sheet updated to allow market participants to populate their own data at 5 minute intervals.
- Impact - participants will still be able to use average daily data in the MCL calculator (like current) or enter their data at 5 minute increments to get an MCL estimate.
- As it is a standalone spreadsheet tool there are no system impacts.

3. Other prudentials updates

- Regional model data – average daily values (i.e. price, load, volatility etc) publish post each season – will remain unchanged.
- CLP training materials – will be updated to reflect 5MS data being used in MCL calculations.
- Reallocation procedures
 - Will be discussed at the Settlement Mangers Working Group (Melbourne, 19 September 2018).
 - Current plan – to be updated and consulted on in early 2019.
- Other documentation be updated once systems solution finalised:
 - EMMS Prudential Forecast User Interface Guide
 - NEM Prudential Dashboard Support Information

Summary - what changes will market participants see in prudentials after 5MS?

1. In terms of their prudential requirements (i.e. MCL) market participants will not see any difference after 5MS changes are implemented.
2. The MCL calculator will be updated so they can enter data at 5 minute intervals (if they wish) or can continue to use aggregated daily data.
3. Regional model data - file unchanged.
4. Any associated training materials or examples will be updated to reflect 5MS.

Timing for CLP consultation

- AEMO may make minor or administrative amendments to the CLP without having to go through the full Rules consultation process (NER clause 3.3.8 (h)).
- Legal advice - 5MS changes can be made to the CLP without the full Rules consultation process - as the changes are consequential to the 5MS rule change and do not involve a change in methodology.
- We still want to consult on the changes with market participant – would MPs prefer to undergo the two stage full process or be satisfied with a single round?
- Example of shortened consultation outline
 - Publish an issue paper with marked up version of the CLP.
 - Give MPs adequate time (i.e. 20 business days) to provide comment.
 - Publish final report with final CLP version.

PWG feedback - Prudentials

- AEMO's preferred approach to updating the CLP
- High level impact assessments
- Consultation approach - i.e. shortened or full
- Other comments

General questions

Emily Brodie

Forward meeting plan

Emily Brodie

Upcoming meetings

- Procedures working group meetings for 2018:
 - Thursday 11 October
 - Friday 16 November
 - Thursday 13 December
- Procedures focus groups:
 - Joint Metering/Systems – Friday 14th September, Melbourne
- Next Program Consultative Forum
 - Thursday 4 October
- Next Executive Forum
 - Tuesday 13 November
- 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	Credit Limit Procedures		
Rule Consultation Req.	Optional	Priority	High
Prepared by	Katalin Foran	Business Owner	Prudentials
Consultation Group	PWG	Consultation Package	Prudentials
Link	https://aemo.com.au/-/media/Files/Stakeholder_Consultation/Consultations/Electricity_Consultations/2018/CLP2/Credit-Limit-Procedures-v4-FINAL.pdf		

Description of Document	The credit limit procedures (CLP) are made in accordance with clause 3.3.8 of the National Electricity Rules (NER) to establish the methodology by which the AEMO will determine the prudential settings for each Market Participant so that the prudential standard is met for the National Electricity Market (NEM).		
Precedent Procedures / External Document	N/A	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<ul style="list-style-type: none"> J Update of all references in the CLP that refer to half hourly load, price and reallocations to reference five minute load, price and reallocations. J Formulas for calculations of market participant prudential settings to remain as current, with only the level of data granularity changing. J Terms within the CLP that will use five minute data: <ul style="list-style-type: none"> o Participant Risk Adjustment Factor ($PRAF_{L,R}$, $PRAF_{G,R}$, $PRAF_{R,R}$, $PRAF_{R,R,C}$) o Average Price for the Region (P_R) o Half-hourly Regional Load ($ERL_{HH,R}$) Profile o Half-hourly Regional Price ($ERL_{HH,R}$) Profile o Half-hourly Regional Price ($ERL_{HH,R}$) Profile for cap value C o Outstandings Limit Volatility Factor ($VFOSL_R$) o Prudential Margin Volatility Factor ($VFOSL_R$) 		

	<ul style="list-style-type: none"> ○ Estimated Half-hourly Load ($EL_{HH,R}$), ($EL_{HH,M,R}$) ○ Estimated Half-hourly Generation ($EG_{HH,R}$), ($EG_{HH,M,R}$) ○ Half-hourly Reallocation Amounts ($RC_{HH,R}$)/($RD_{HH,R}$), ($RCS_{HH,R}$)/ ($RDS_{HH,R}$) 		
Summary of Potential Changes – Global Settlements	No impact.		
External Stakeholder Impacted	Market participants	AEMO Business Units Impacted	Prudentials
Issues for Stakeholder Consultation	<ul style="list-style-type: none">) It is expected that the use of data at five minute granularity will improve the accuracy of market participant prudential requirements. 		
System Impact	<p>Current assumptions around the scope of system changes:</p> <ul style="list-style-type: none">) Data tables currently used for the maximum credit limit (MCL) calculation will remain the same.) The only change will be the inclusion of more periodIDs (i.e. expanding from 48 to 288)) The formulas for the MCL calculation will remain the same.) Key task once five minute data is included will be to ensure and test that the MCLs are calculated properly using the expanded data set. 		

Five Minute Settlements Project: High-Level Impact Assessment

Document Title	MCL Calculator - Summer, Winter and Shoulder & MCL Calculator examples		
Rule Consultation Req.	No	Priority	Medium
Prepared by	Katalin Foran	Business Owner	Prudentials
Consultation Group	PWG	Consultation Package	Prudentials
Link	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Settlements-and-payments/Prudentials-and-payments/Maximum-Credit-Limit/Maximum_credit_limit_calculator https://www.aemo.com.au/media/Files/Other/settlements/MCL_Calculator_2013WIN_Example_1.xlsx		

Description of Document	<p>The MCL calculator (updated for each prudentials season) is an Excel spreadsheet based tool supplied by AEMO to market participants prior to each MCL season. It allows market participants to estimate their prudential requirements ahead of time using their own data. It is not used by AEMO to calculate market participant prudential requirements, with the official calculation undertaken within AEMO systems.</p> <p>Additionally, there are examples of the MCL calculator populated by sample data that demonstrate to market participant how the calculator tool works.</p>		
Precedent Procedures / External Document	Credit Limit Procedures (CLP)	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements	<p>Increase data granularity from 30 minute to 5 minute intervals:</p> <ul style="list-style-type: none">) The RegionalData sheet to be updated to allow AEMO to populate regional level data in the sheet at 5 minute intervals.) The ParticipantData sheet to be updated to allow market participants to populate their own data in the sheet at 5 minute intervals. 		
Summary of Potential Changes – Global Settlements	No impact.		
External Stakeholder Impacted	Market participants	AEMO Business Units Impacted	Prudentials

<p>Issues for Stakeholder Consultation</p>	<ul style="list-style-type: none"> <p>) Participants can get a more accurate estimate of their likely prudential requirements using data at 5 minute granularity.</p> <p>) Participants will retain the ability use average daily value data in the MCL calculator if they do not wish to or do not have their data broken down to 5 minute increments.</p>
<p>System Impact</p>	<p>This is a standalone spreadsheet tool with no system impacts.</p>

Five Minute Settlements Project: High-Level Impact Assessment

Document Title	NEM Credit Limit Procedure Training		
Rule Consultation Req.	No	Priority	Low
Prepared by	Katalin Foran	Business Owner	Prudentials
Consultation Group	PWG	Consultation Package	Prudentials
Link	https://www.aemo.com.au/-/media/Files/Electricity/NEM/Settlements_and_Payments/Prudentials/2017/CLPTraining.pdf		

Description of Document	This is a PowerPoint presentation that was developed for the introduction of the Credit Limit Procedure (CLP) in 2014. It is made available on AEMO's website for information purposes only.		
Precedent Procedures / External Document	Credit Limit Procedures (CLP)	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements) Any references in the presentation to half hourly data will be updated to reference 5 minute data.		
Summary of Potential Changes – Global Settlements	No impact.		
External Stakeholder Impacted	N/A	AEMO Business Units Impacted	N/A
Issues for Stakeholder Consultation) None		
System Impact	This is a standalone PowerPoint presentation provided for information purposes only and will have no system impact.		

Five Minute Settlements Project: High-Level Impact Assessment

Document Title	Regional Model Data		
Rule Consultation Req.	No	Priority	Low
Prepared by	Katalin Foran	Business Owner	Prudentials
Consultation Group	PWG	Consultation Package	Prudentials
Link	https://www.aemo.com.au/-/media/Files/Electricity/NEM/Settlements_and_Payments/Prudentials/Regional-Model-Data.xlsx		

Description of Document	The Regional Model Data.xls file is an Excel file containing seasonal data by year, used in maximum credit limit (MCL) calculations. It is extracted from AEMO systems on a seasonal basis. It is made available on AEMO's website for information purposes only.		
Precedent Procedures / External Document	Credit Limit Procedures (CLP)	Dependent Procedures / External Document	N/A
Summary of Changes – Five Minute Settlements) There will be no changes made to this data file as all data contained within it is aggregated on a seasonal level by year.		
Summary of Potential Changes – Global Settlements	No impact.		
External Stakeholder Impacted	N/A	AEMO Business Units Impacted	N/A
Issues for Stakeholder Consultation) None		
System Impact	This is a standalone spreadsheet data file extracted from AEMO systems and will have no system impact.		