

CREDIT LIMIT PROCEDURES - 5MS AND SEASONAL DEFINITION CHANGES

ISSUES PAPER

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EXECUTIVE SUMMARY

The publication of this Issues Paper commences the first stage of the Rules consultation process conducted by AEMO to consider proposed amendments to the Credit Limit Procedures (the Procedures) under clause 3.3.8 of the National Electricity Rules (NER).

AEMO has prepared this Issues Paper to facilitate informed debate and feedback by industry about two separate issues:

- Changes to the Procedures to reflect the Five Minute Settlement (5MS) rule.
- Changes to the season definitions in the Procedures.

Changes to reflect the 5MS Rule

In November 2017, the AEMC made a final rule that reduced the trading interval for financial settlement in the National Electricity Market (NEM) from 30 minutes to five minutes (5MS rule).¹ The AEMC's determination considered that five-minute settlement would improve price signals for more efficient generation and use of electricity, encourage efficient investment in capacity and demand response technologies, and improve bidding incentives.

AEMO is proposing amendments to the Procedures that are a consequence of the 5MS rule. The proposed amendments will replace all references to 30 minute or half hourly time intervals with "trading interval" (which remains defined in the NER as a 30 minute period until 1 July 2021 when it is redefined as 5 minutes under the 5MS rule).

Changes to the season definitions

The Procedures define three distinct seasons for market participant prudential requirements; summer (December to March), winter (May to August) and shoulder (April and October to November) seasons.

AEMO is proposing to amend the season definitions, moving the month of April under the winter season. This change reduces administrative complexity and risks for both market participants and AEMO.

Stakeholder consultation

AEMO has prepared this Issues Paper to facilitate informed debate and feedback by industry on the necessary updates to the Procedures in line with the 5MS rule and the proposed changes to season definitions.

AEMO invites stakeholders to suggest alternative options where they do not agree that AEMO's proposals would achieve the objectives of the amendments, including the national electricity objective. AEMO also asks stakeholders to identify any unintended adverse consequences of the proposed changes.

Stakeholders are invited to submit written responses on the issues and questions identified in this paper by 5.00 pm (AEST) on 23 May 2019, in accordance with the Notice of First Stage of Consultation published with this paper.

¹ Final rule available at: <https://www.aemc.gov.au/rule-changes/five-minute-settlement>



CONTENTS

EXECUTIVE SUMMARY	2
1. STAKEHOLDER CONSULTATION PROCESS	4
2. BACKGROUND	5
2.1. NER requirements	5
2.2. The Credit Limit Procedures	5
2.3. Context for this consultation	5
2.4. Industry engagement on the Procedures	6
3. DISCUSSION – CHANGES CONSEQUENT ON THE 5MS RULE	7
3.1. Proposed changes to the Procedures	7
3.2. Transitional arrangements	7
4. DISCUSSION – SEASON DEFINITIONS	8
4.1. Issues with current season definitions	8
4.2. Proposed changes	10
4.3. Costs and benefits of changing the season definition	11
4.4. Implementation	12
4.5. Other administrative changes	13
5. DRAFTING FOR PROPOSED CHANGES	14
6. SUMMARY OF MATTERS FOR CONSULTATION	15
APPENDIX A - GLOSSARY	16



1. STAKEHOLDER CONSULTATION PROCESS

As required by clause 3.3.8 (g) of the NER, AEMO is consulting on the Credit Limit Procedures (Procedures) in accordance with the Rules consultation process in rule 8.9.

Note that there is a glossary of terms used in this Issues Paper at Appendix A.

AEMO's indicative timeline for this consultation is outlined below. Future dates may be adjusted depending on the number and complexity of issues raised in submissions and any meetings with stakeholders.

Deliverable	Indicative date
Issues Paper published	12 April 2019
Submissions due on Issues Paper	23 May 2019
Draft Report published	20 June 2019
Submissions due on Draft Report	12 July 2019
Final Report published	16 August 2019

Prior to the submissions due date, stakeholders can request a meeting with AEMO to discuss the issues and proposed changes raised in this Issues Paper.

Additionally, AEMO has been and intends to continue consulting on the 5MS related changes to the Procedures through the Five-Minute Settlement (5MS) program engagement channels.² The relevant engagement channels include:

- Procedures Working Group (PWG)
- Systems Working Group (SWG)
- Settlements Focus Group (SFG)

² For details on forums and groups specific to the 5MS program see: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>



2. BACKGROUND

2.1. NER requirements

Under NER clause 3.3.8, AEMO is responsible for developing and publishing the Procedures. The Procedures may be amended in accordance with the 'rules consultation procedures' set out in NER rule 8.9.

2.2. The Credit Limit Procedures

The New Prudential Standard and Framework was implemented in 2012 and sits under clause 3.3 of the NER. Its key features are outlined in the Procedures³, which has two main functions:

- To define the market's prudential risk appetite through the prudential standard.
- To determine the prudential settings for market participants with reference to the prudential standard. The prudential settings for a market participant comprise its maximum credit limit (MCL), outstandings limit (OSL) and prudential margin (PM). The MCL is the sum of the OSL and the PM. Market participants must provide AEMO with credit support for an amount greater than or equal to their MCL.

2.3. Context for this consultation

2.3.1. Five-Minute Settlement

In November 2017, the AEMC made a final rule that reduced the trading interval for financial settlement in the National Electricity Market (NEM) from 30 minutes to five minutes (5MS rule).⁴ The AEMC's determination considered that five-minute settlement would improve price signals for more efficient generation and use of electricity, encourage efficient investment in capacity and demand response technologies, and improve bidding incentives.

Five-minute settlement will commence in the NEM on 1 July 2021. Settlement across the NEM will then be based on five-minute trading interval prices. 5MS will change many NEM processes, including energy and ancillary service bidding, online dispatch, intervention pricing, the calculation of trading amounts, the calculation of the cumulative price threshold, and periodic energy metering.

AEMO is required to update and publish a number of specified relevant procedures by 1 December 2019, to apply from the 5MS commencement date.⁵ The Procedures were identified as one of the publicly consulted documents that require amendment for 5MS implementation. They include references to half-hourly data as inputs to prudential calculations.

2.3.2. Seasons definitions

Clause 4.3.1 of the Procedures define three distinct seasons for market participant prudential requirements; summer (December to March), winter (May to August) and shoulder, split into two parts (shoulder 1 - April and shoulder 2 - October to November). This feature of the Procedures, with the shoulder 1 season covering a short time period (April only) creates administrative complexities and timing issues for market participants.

³ http://aemo.com.au/-/media/Files/PDF/Credit_Limit_Procedures_v2_Final_Determination_1_August.pdf

⁴ Final rule available at: <https://www.aemc.gov.au/rule-changes/five-minute-settlement>

⁵ NER clause 11.103.2



2.4. Industry engagement on the Procedures

2.4.1. Five-minute settlement

For matters related to the 5MS rule, AEMO established the Procedures Working Group (PWG) to seek industry feedback on the appropriate amendments to procedures and other AEMO documents affected by 5MS.⁶ The PWG is an open forum for industry stakeholders to contribute to the procedure development process.

In September 2018, AEMO engaged with the PWG and circulated High Level Impact Assessments (HLIA)⁷ on AEMO's approach to amending the Procedures.

2.4.2. Seasons definitions

AEMO discussed possible changes to season definitions, specifically related to the shoulder season, at the 2017⁸ and 2018⁹ Settlement Managers Working Groups (SMWG). The SMWG is an annual/bi-annual forum through which AEMO engages with stakeholders on settlement and prudentials related matters.

The issue around the administrative burden and risks posed by the timelines around shoulder 1 MCL requirements has also been raised by some market participants directly with AEMO's Prudentials team.

⁶ AEMO. 2018. Procedures Working Group. Available: <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures-Workstream/Procedures-Working-Group>

⁷ AEMO. 2018. PWG Meeting Pack 3. Available: <https://www.aemo.com.au/-/media/Files/Electricity/NEM/5MS/Procedures-Workstream/PWG/2018/PWG--Meeting-Pack--13-Sep-18-V20.pdf>

⁸ http://www.aemo.com.au/-/media/Files/Stakeholder_Consultation/Working_Groups/Wholesale/Settlement_Managers_Working_Group/SMWG-August-2017---Meeting-Presentation.pdf

⁹ http://www.aemo.com.au/-/media/Files/Stakeholder_Consultation/Working_Groups/Wholesale/Settlement_Managers_Working_Group/SMWG-September-2018---Meeting-Presentation.pdf



3. DISCUSSION – CHANGES CONSEQUENT ON THE 5MS RULE

This section discusses proposed changes to the Procedure resulting from the 5MS rule.

3.1. Proposed changes to the Procedures

The Procedures establish the methodology by which the AEMO determines the prudential settings for each market participant so that the prudential standard is met for the NEM.

At a high level, AEMO proposes that all calculations related to market participant prudential settings under the Procedures move from using 30-minute to 5-minute data as of 1 July 2021. In terms of changes to the Procedure, this entails:

- Updating all in text references in the Procedures to half hourly load, price and reallocations to reference load, generation, price and reallocations per trading interval (TI¹⁰).
- Updating all references in formulas to half hourly load, generation, price and reallocations, typically denoted by the subscript "H,H", to reference TI.
- Removing all references to 48 periods per day.

3.2. Transitional arrangements

Because the proposal is to replace the 30 minute references with references to trading intervals, the proposed changes can take effect immediately with no need for further adjustment on 1 July 2021 when 5MS takes effect.

AEMO has also considered transitional arrangements in relation to the time period when MCL calculations will involve both 5 minute and 30 minute data.

These arrangements will apply at a system level and will be managed internally by AEMO. As they are not expected to have an impact on market participants, AEMO does not consider any changes to the Procedure are necessary to deal with transitional arrangements.

Questions

1. Do participants agree with the proposed changes to the Procedures to reflect to 5MS Rule? If not, why?
2. Are there other relevant issues that have not been considered?
3. What is an alternative approach to implementing the 5MS Rule for the Procedures? How would it be implemented?

¹⁰ As of 1 July 2021, trading interval (TI) will be defined as 5 minutes, according to the NER.



4. DISCUSSION – SEASON DEFINITIONS

This section discusses proposed changes to the Procedure in relation to season definitions. Consideration has also been given to implementation.

4.1. Issues with current season definitions

The MCL is the amount of credit support market participants must provide to AEMO at all times. Clause 4.3.1 of the Procedures defines three MCL seasons; summer (December to March), winter (May to August) and shoulder (shoulder 1 - April and shoulder 2 - October to November). In practice, as the shoulder season is split into two, this means that AEMO conducts a routine review of all market participants prudential settings (seasonal MCL reviews) four times a year, as shown in Table 1.

Table 1 – MCL season definitions

Season	Months encompassed	Approximate effective date
Summer	December, January, February and March	1 December
Shoulder 1	April	1 April
Winter	May, June, July, and August	1 May
Shoulder 2	September, October and November	1 September

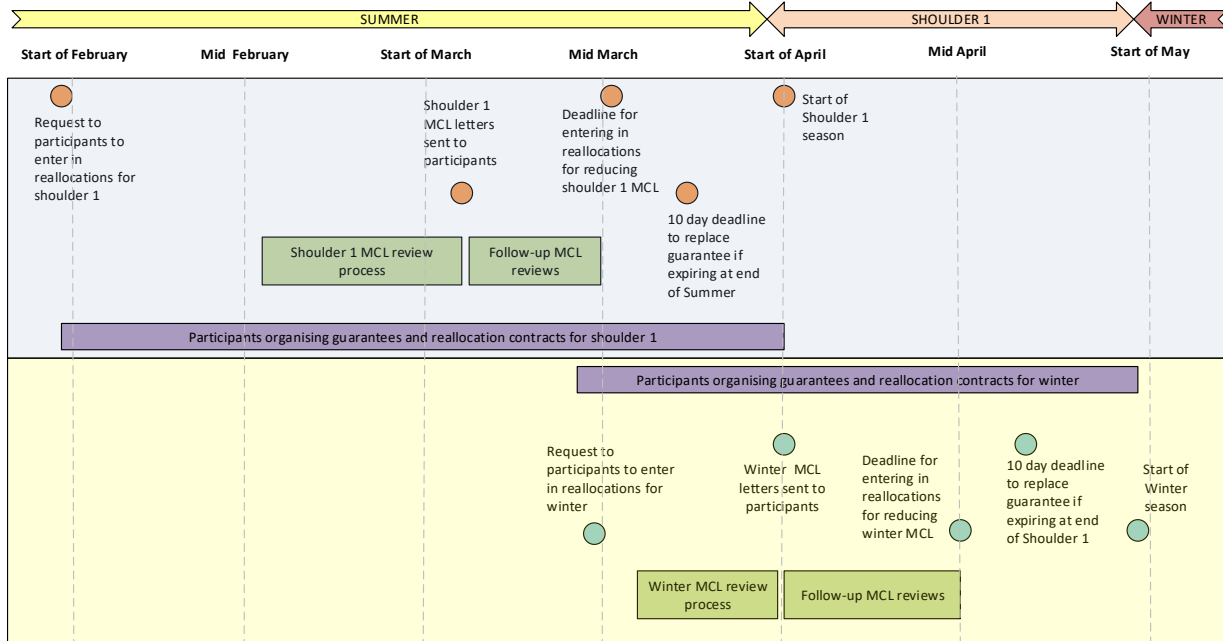
Each seasonal MCL review follows a similar process:

- 1) AEMO requests participants to enter their reallocations for the upcoming season, up to two months ahead of the season effective date.
- 2) AEMO completes seasonal MCL reviews for all participants taking into account expected load, generation and submitted reallocations. The process starts approximately 6 weeks prior to season effective date.
- 3) AEMO sends participants MCL letters confirming their MCL amounts for the upcoming season, approximately 4 weeks prior to season effective date.
- 4) Based on MCL letter amounts, participants organise credit support and/or additional reallocations.
- 5) To be included in their MCL calculations, reallocations have to be submitted 1 to 2 weeks in advance of the season effective date at the latest (according to the reallocations timetable¹¹), and to apply for at least 1-2 weeks into the season.
- 6) AEMO conducts follow-up MCL reviews for any participants with a change in their circumstances, such as those who enter in new reallocations. This ad-hoc review will then supersede the previously published MCL letter for the seasonal review.
- 7) If market participant credit support is expiring at the end of the previous season, participants need to replace their credit support at least 10 business days before the new season effective date.
- 8) If market participant credit support is not expiring at the end of the previous season, participants have until the season effective date to ensure their credit support matches their MCL requirements.

As shown in Figure 1 below, the seasonal MCL review process for the shoulder 1 and winter seasons overlaps. Through particularly the mid-March to mid-April time periods, both AEMO and market participants need to complete a large number of tasks to ensure that the MCL requirements for both shoulder 1 and winter seasons are appropriately administrated and both AEMO and market participants fulfil their obligations under the rules.

¹¹ Available at: https://www.aemo.com.au/-/media/Files/Stakeholder_Consultation/Consultations/Electricity_Consultations/2017/CLP/Final/Reallocation-Timetable-v2-FINAL.pdf

Figure 1 – MCL review process – shoulder 1 and winter seasons



The tight time frames resulting from the proximity of the two MCL seasons, lead to a number of problems for market participants, as outlined in Table 2.

Table 2 – Key problems created by the proximity of shoulder 1 to winter season

Key Issue	Description	Consequences
Credit support changeover in short time period	Short time frames for market participants to change over credit support successively for shoulder 1 and winter reviews, due to the 10-day expiry period.	<ul style="list-style-type: none"> Heightened risk of human error leading to market participant non-compliance. If the market participant fails to provide credit support required to meet their MCL by the appointed time/date, it's a default event.
Reallocation changes over a short time period	Submitting reallocations for all seasonal MCL reviews carries risks, with participants arranging reallocations outside of their usual reallocation schedule. This issue is exacerbated by the short/overlapping timeframes of shoulder 1 and winter MCL seasons.	<ul style="list-style-type: none"> Heightened risk of human error (participants, reallocation counterparties) leading to market participant not having enough reallocations to cover MCL requirements, potentially necessitating the sourcing of credit support over very short time frames. If the market participant fails to provide credit support required to meet their MCL by the appointed time/date, a default event occurs.
Reallocations contracts available to smaller market participants	Small retailers can often only enter in reallocations 2 weeks ahead, due to the counterparty contracts they have access to. However, due to the overlapping timeframes between shoulder 1 and winter seasons, participants may have to enter reallocations up to 7 weeks ahead for them be counted for winter MCL purposes.	<ul style="list-style-type: none"> If participants cannot arrange adequate reallocations in time, they may need to provide credit support in a very short time frame. If the market participant fails to provide credit support required to meet their MCL by the appointed time/date, a default event occurs.



Key Issue	Description	Consequences
Market participant resource utilisations	Having 2 seasonal MCL reviews so close together significantly increases the administrative burden (organising 2 different sets of credit support and/or reallocation contracts) on market participants, particularly those that are small or new to the market.	<ul style="list-style-type: none"> Inefficient use of resources with Shoulder 1 MCL review taking up 25% of administrative time to cover 8% of the year, while providing minimal benefit to participants.
Financial institution process	Some financial institutions use the MCL letter as their basis for providing credit support, with no flexibility on expiry dates or amounts, particularly for smaller market participants.	<ul style="list-style-type: none"> Participants may not have the option of reducing the risks posed by the shoulder 1/winter MCL changeover through non-expiring guarantees or being able to increase guarantee amounts.
AEMO resource utilisations	Seasonal MCL reviews are a very time intensive task for AEMO. Follow-up MCL reviews (for new reallocations entered) require further rework/duplication in each season review. As the number of participants in the NEM continues to increase the time required for the reviews will continue to grow.	<ul style="list-style-type: none"> Inefficient use of resources with Shoulder 1 MCL review taking up 25% of administrative time to cover 8% of the year, while providing minimal (if any) monetary benefits to participants.
Increased overall risks	Increasing number of market participants in the NEM means all actors in the prudentials space (AEMO, market participants, reallocation counterparties and financial institutions) have larger administrative burden placed upon them, especially in the shoulder 1/winter season changeover.	<ul style="list-style-type: none"> Overall increase in the risk of human error leading to undesirable consequences such as participant default and potentially financial loss in the market.

4.2. Proposed changes

When the Procedures were first made in 2014, the shoulder season was split into two periods, as this division seemed reasonable in terms of load profiles. That is, generally there is a slight dip in NEM overall load over April. At that time, it was also thought that there may be a slight decrease in prices and volatilities in April that could be incorporated into the MLC calculations, and benefit market participants. However, subsequently AEMO has seen that:

- Overall MCL levels are higher in summer and lower in all other seasons. However, there is little difference between shoulder 1 and winter MCL levels. AEMO estimates that on average total winter MCLs have been 3% higher than total shoulder 1 MCLs.¹²
- The administrative burden, risks and difficulties around credit support provision and reallocations are present for all MCL seasonal reviews, but are considerably exacerbated by the overlapping timelines for of the shoulder 1 and winter seasons.
- In terms of efficiency, each MCL seasonal review takes up the same amount of time both for AEMO to complete and for market participants to respond to. Thus, one quarter of the total annual work/administrative tasks are undertaken for a one-month time period.
- AEMO conducts a significant number of ad-hoc MCL reviews between seasonal reviews. This is due to the increased use of reallocations and other changing circumstances for market participants (i.e. change in generation/load). Thus, having seasonal MCL reviews at shorter intervals has become less important than at the start of the Procedures.

¹² Using 2015–2017 data for MCL comparison. In 2018 changes were made to the CLP from the winter season onwards (weighting and capping) meaning the shoulder 1 and winter MCL values cannot be directly compared. Total 2019 winter MCL values are not available at the time of writing.



- A significant number of market participants have asked AEMO to remove shoulder 1 as they see it as providing little value.

For the above reasons AEMO proposes that the shoulder 1 season be removed. In terms of the Procedures, this means altering clause 4.3.1, to remove the month of April from the shoulder season and add it in to the Winter season.

4.3. Costs and benefits of changing the season definition

4.3.1. Costs

There are five key components when calculating a market participant’s MCL. Table 3 shows how they are calculated, and the effect of the shoulder 1 removal on each component.

Table 3 – MCL calculation components and the effects of proposed changes

MCL Component	Basis of calculation	Effect of proposed changes
Load/Generation	<ul style="list-style-type: none"> • Assessed for each participant based on load pattern over past 12 months (or a reduced period if there is a change in the energy pattern behaviour). 	<ul style="list-style-type: none"> • No change as load/generation is based on actual load/generation for participant, irrespective of MCL season being assessed.
Price (RRP)	<ul style="list-style-type: none"> • Based on previous like seasons over the life of NEM. • On average price are slightly higher (4% in 2019) in winter than in shoulder 1. 	<ul style="list-style-type: none"> • Overall prices will likely be slightly lower for the new longer winter season, as now they incorporate April which in general has lower prices.
Outstandings Limit Volatility Factor (VF _{OSL})	<ul style="list-style-type: none"> • Based on previous like seasons over the life of NEM. • On average there is slightly more volatility in the shoulder 1 season than winter (VF_{OSL} 4% higher in 2019) 	<ul style="list-style-type: none"> • Overall volatility may be slightly higher for the new longer winter season, as now it incorporates April which in general has higher volatility.
Prudential Margin Volatility Factor (VF _{PM})	<ul style="list-style-type: none"> • Based on previous like seasons over the life of NEM. • On average there is slightly more volatility in the shoulder 1 season than winter (VF_{PM} 3% higher in 2019). 	<ul style="list-style-type: none"> • Overall volatility may be slightly higher for the new longer winter season, as now it incorporates April which in general has higher volatility.
Participant Risk Adjustment Factor (PRAF)	<ul style="list-style-type: none"> • Based on previous like season. • On average PRAF vary minimally between the two seasons. 	<ul style="list-style-type: none"> • Minimal change overall as PRAF calculated on previous like season (now including April for winter).

AEMO estimates that under the current season definitions, on average, total winter MCLs are 3% higher than shoulder 1 MCLs. Under the proposed season definitions, it is likely that MCL levels for the winter season will be broadly similar, or slightly lower, than under the previous definition, meaning that:

- The month of April (previous shoulder 1 season) may have a slightly higher MCL than previously.
- The months of May, June, July and August (previous winter season) may have a slightly lower MCL than previously.

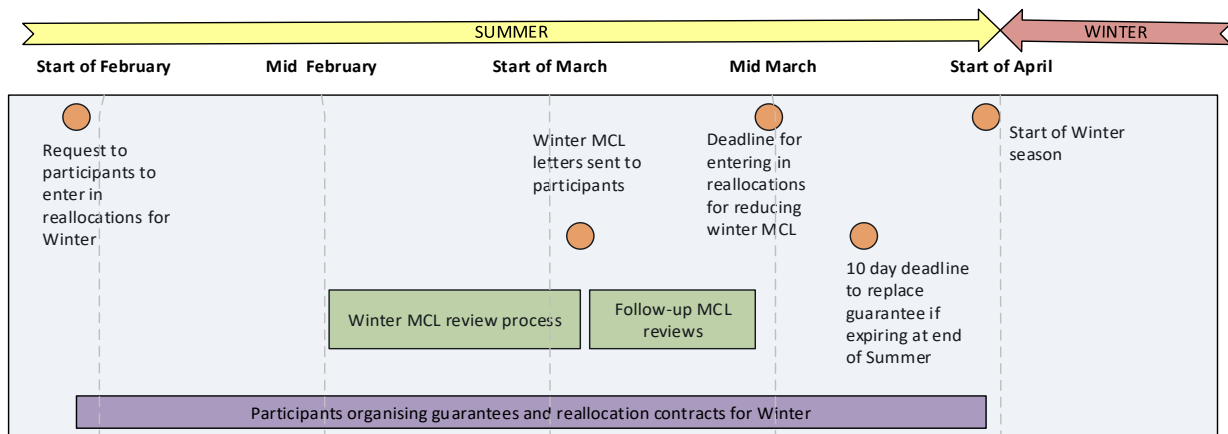
Thus, overall, AEMO believes that the proposed changes will result in minimal (if any) additional costs to market participants in the form of increased MCL levels due to the way average prices and volatilities are calculated for each season.

4.3.2. Benefits

The proposed change will simplify the seasonal MCL review process for both market participants and AEMO, with the MCL reviews proceeding straight from the summer season into the winter season as shown in Figure 2 below. The benefits of this include:

- Reduces the risk of errors and non-compliance around providing credit support and/or subsisting reallocations for market participants. This ultimately reduces the risk of a default event occurring due to the market participant failing to provide credit support required to meet their MCL by the appointed time/date.
- Significantly reduces the administrative burden of seasonal MCL reviews, both on market participants and AEMO by approximately 25%.
- Allows market participants to arrange a single guarantee from the April to August time period.
- Allows market participants to enter into reallocation agreements from April to August time period.

Figure 2 – MCL review process – shoulder 1 removed



While the monetary benefits of reduced risks and administrative burden are difficult to quantify, AEMO believes they will more than outweigh costs (if any) associated with the potential slight reduction of credit support requirements during April under the current season definitions.

4.4. Implementation

AEMO intends for the revised season definitions to be effective from the start of 2020. Thus, from 1 January 2020 the seasons would be defined as:

- Summer – December to March
- Winter – April to August
- Shoulder – September to November

This means that the first winter season encompassing the month of April will be the winter of 2020, starting approximately 1 April 2020. To implement the proposed changes internally, AEMO will be making minor systems changes related to season start and end dates, and changes to its Life of NEM model. This will allow all the MCL parameters, such as forecast load, price and volatility factors, to be calculated using data according to the new season definitions. AEMO does not anticipate a delay in implementing this change as the system changes are minor with minimal/no dependencies.



4.4.1. Additional monitoring of market participant load

With the proposed moving of April into the winter season, the winter MCL review will be an assessment of market participant prudential requirements over a longer, five-month period. This longer time frame will increase the likelihood of changes to market participant circumstances, compared to what is assessed during the seasonal MCL review.

Market participants can request an ad-hoc MCL review to update their prudential requirements, at any time if their load/generation or reallocations change. Additionally, AEMO uses a process of internal alerts to respond to changes to market participant reallocations and generation, which can trigger an ad-hoc MCL review. Considering the proposed change to season definitions, AEMO will also put in place a permanent process to monitor market participant load more closely through the use of internal alerts. Thus, if market participant load changes from what is assessed under the seasonal MCL process, an ad-hoc MCL review can be triggered to update participant prudential requirements.

4.5. Other administrative changes

In addition to the proposed changes for 5MS and to amend the season definitions, AEMO has made minor updates to the Procedures, including:

- Reformatting to be in line with the current external procedures template.
- Updating of minor errors.

These changes are marked up in the draft version of the Procedures published with this Issues Paper.

Questions

1. Do participants agree with the proposed changes to season definitions? If not, why?
2. Are there other relevant issues that have not been considered?
3. What is an alternative approach to season definitions? How would it be implemented?



5. DRAFTING FOR PROPOSED CHANGES

To help stakeholders and other interested parties respond to this Issues Paper, AEMO has published a draft of the Procedures incorporating the changes AEMO proposes for consultation.

Note that AEMO has adopted a new document format for procedures. A clean version of the draft Credit Limit Procedures, and a change-marked version are available at: <http://aemo.com.au/Stakeholder-Consultation>.



6. SUMMARY OF MATTERS FOR CONSULTATION

In summary, AEMO seeks comment and feedback on the following amendments to the Procedures:

1. Proposed amendments to the Procedures with respect to the 5MS rule.
2. Proposed amendments to season definitions, specially moving the month of April from the shoulder season to the winter season.

Submissions on these and any other matter relating to the proposal discussed in this Issues Paper must be made in accordance with the Notice of First Stage of Consultation published with this paper by 5.00 pm (AEST) on 23 May 2019.

**APPENDIX A - GLOSSARY**

Term or acronym	Meaning
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
MCL	Maximum Credit Limit
NEM	National Electricity Market
NER	National Electricity Rules
OSL	Outstandings Limit
PM	Prudential Margin
PRAF	Participant Risk Adjustment Factor
Procedures	Credit Limit Procedures
RRP	Regional Reference Price
VF_{OSL}	Outstandings Limit Volatility Factor
VF_{PM}	Prudential Margin Volatility Factor