CREDIT LIMIT PROCEDURES DRAFT DETERMINATION AND REPORT

PREPARED BY: Settlements and Prudentials

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Final

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1. INTRODUCTION

This draft report and determination on AEMO's Credit Limit Procedures (**Procedures**) was issued on 21 November 2012, in accordance with the Rules consultation procedures under rule 8.9 of the National Electricity Rules (**Rules**). Terms defined in the Rules have the same meanings when used in this document unless otherwise stated.

1.1 Objectives of the consultation

The objectives of the consultation are:

- To provide Consulted Persons with the opportunity to be involved in the development of the Procedures.
- To ensure that Consulted Persons are properly informed about the proposed and the final outcome.

1.2 Background

AEMO is responsible for the development through consultation of the Procedures, which are required under clause 3.3.8 of the Rules.

On 12 April 2012 the AEMC issued its Draft National Electricity Amendment (New Prudential Standard and Framework in the NEM) Rule 2012 (**Draft Rule**). On 18 June 2012 AEMO commenced its consultation on the proposed Procedures in response to Market Participant requests to review a draft of these procedures in making submissions to the AEMC on the Draft Rule.

On 18 October 2012, following an extension of time for making the Rule, the AEMC made the National Electricity Amendment (New Prudential Standard and Framework in the NEM) Rule 2012 (**Final Rule**). This Rule sets the framework for development of the Procedures, which will be used to determine each Market Participant's credit support requirements in the NEM.

1.3 Matter under consultation

The matter under consultation is identified in clause 3.3.8(c) of the Rules. This clause provides:

> *AEMO* must develop, and, at all times, *publish* and maintain the credit limit procedures that details the methodology to be used by it to determine the prudential settings to apply to *Market Participants*.

2. Consultation Process

AEMO gave notice of the first stage of consultation on 18 June 2012, together with a draft of the Procedures, supporting information document, credit limits procedure data and three seasonal MCL calculators: http://www.aemo.com.au/Consultations/National-Electricity-Market/Open/Credit-Limit-Procedures-Consultation.

AEMO has held industry workshops in Sydney and Melbourne in July 2012 with Market Participants to present the draft Procedures. AEMO also held a series of teleconferences and meetings with Market Participants impacted by the matter under the AEMC's specific round of consultation on the Draft Rule during September and October 2012.

Consulted Persons should note that, under clause 11.51.4(a) of the Rules, the first stage of consultation undertaken by AEMO in anticipation of the Final Rule is taken to meet the requirements in the Rules consultation procedures for that stage of consultation. However, in view of the extended consultation by the AEMC on the Final Rule, AEMO considered it was not appropriate to finalise its draft report and determination until after the publication of the Final Rule. This will allow the second stage of consultation to be undertaken with the benefit of certainty as to the relevant Rules.

The following table contains an outline of the consultation process, including key dates. Please note that proposed dates are subject to change by AEMO.

PROCESS	DATE
Notice of first stage consultation	18 June 2012
Closing date for submissions received in response to the notice of consultation	23 July 2012
Publication of the draft report and determination	21 November 2012
Closing date for submissions received in response to the draft report and determination	12 December 2012
Publication of the final report and determination and Report	Currently, proposed date is 21 December 2012

3. Consideration of Submissions

Four submissions were received in the first stage of consultation:

RESPONDENT	PARTICIPANT TYPE OR OTHER ROLE
Origin	Market Customer, Market Generator
Ergon Energy	Market Customer, Market Generator
National Generators Forum (NGF)	Industry representative body.
Progressive Green	Market Customer, Market Generator

All submissions will be published on AEMO's website on the date of publication of this draft report and determination.

4. Material issues

AEMO has made the following material changes for consideration in the draft Procedure:

- An adjustment for the introduction of a carbon price on 1 July 2012. The Procedures need to take into account the step change in price caused by introduction of the carbon price in calculations that use historical (pre 1 July) prices. The adjustment in the draft Procedure is $20 per MWh which aligns with the adjustment in the Credit Limits Methodology and also observations in market pricing since July 2012.
- An inter regional adjustment in the prudential margin which values net credit that is set against a net debit in another region at a volatility factor of 1. This aligns the

treatment of inter regional offsets in the prudential margin with the treatment of inter regional offsets in the outstandings limit.

- Discretion for AEMO to ignore reallocations for the purposes of setting prudential requirements where the value of the reallocations is inconsistent with the methodology in this Procedure. For example, all reallocations submitted are for non business days.

Consulted Persons raised 11 other issues or comments that AEMO considers material:

ISSUE NUMBER	ISSUE	RAISED BY
1	Credit limit procedures meets intended outcomes of the Draft Rule in its calculation of the credit support requirements	Origin
2	Notification process of credit support levels based on new prudential settings	Ergon Energy
3	Frequency of reviews as a result of split shoulder season	Ergon Energy
4	Impact of backward looking process in determining future load data	Ergon Energy
5	Explanation of the participant risk adjustment factor (PRAF) formulation requested.	Ergon Energy
6	Credit limit procedures considered to be an accurate implementation of the New Prudential Standard Rule change proposal	NGF
7	The draft credit limit procedures completely oppose a true and accurate risk assessment of Market Participants in the NEM and adds barriers to entry.	Progressive Green
8	PRAF calculation is flawed because it uses an average load and pricing profile and does not compare a like season when determining the PRAF for a given seasonal review.	Progressive Green
9	Removal of the ability to elect a reduced credit time period of 28 days in determination of the maximum credit limit.	Progressive Green
10	Include a statement that for highly variable energy patterns AEMO will take into account discussions Market Participant’s regarding their forecast load and generation.	Progressive Green
11	The credit limit procedures has little impact on a vertically integrated Market Participant but presents barriers to entry for Market Participants that have a more customer oriented philosophy, such as demand side management, with respects to risk management	Progressive Green

4.1 Material Issue 1: Credit limit procedures meets intended outcomes

4.1.1 Issue/Comment

The CLP outlines the new methodology to calculate a market participant's required level of credit support in line with the proposed new prudential standard of two per cent probability of exceedence. It is intended to:

- *avoid dramatic changes in credit support lagging a high outstandings event;*
- *better reflect seasonal variability; and*
- *differentiate more risky load profiles from less risky ones.*

We have reviewed the CLP and have found that the methodology is sound and calculates *credit support requirements that reflect these intended outcomes.*

4.1.2 AEMO response

AEMO concurs with Origin's summary of the intended outcomes of the Procedures and that the methodology works towards meeting these outcomes.

4.1.3 Outcome

No changes to the draft Procedures.

4.2 Material Issue 2: Notification process

4.2.1 Issue/Comment

As highlighted in our submission on the New Prudential Standard and Framework in the NEM Rule change request. Ergon Energy considers that Market Participants should be notified in a timely manner of any changes to the prudential settings, and that sufficient time should be provided for new guarantees to be executed and lodged with AEMO….

4.2.2 AEMO response

The process for assessment of prudential settings involves a balance between using the most up to date load, generation and reallocation information available prior to the effective date of a review and providing information to the Market Participant's in a timely fashion. AEMO intends to continue the existing process of around 3 weeks notice of new credit support requirements under the Procedures. However, volatility factor and price information will be available on the web well in advance of the review effective date, allowing Market Participants to estimate their likely prudential settings.

4.2.3 Outcome

No changes to the draft Procedures. AEMO will continue to provide Market Participant's approximately 3 weeks notice of the next season's MCL.

4.3 Material Issue 3: Frequency of Reviews

4.3.1 Issue/Comment

It is our understanding that Market Participants may be required to prepare guarantees for lodgement with AEMO up to four times a year. That is, a review may be undertaken for each of the following periods:

- *Summer season;*
- *Month of April;*
- *Winter season; and*
- *Remaining shoulder season.*

This is because the three seasons proposed by AEMO are not clearly segregated (i.e. the shoulder period for the month of April occurs between the summer and winter seasons).

4.3.2 AEMO response

Under the Procedures and the Final Rule AEMO must review each Market Participant's prudential settings at least once a year. AEMO will publish the schedule of reviews on the AEMO website in accordance with current practice. At this time AEMO have considered three options as outlined below:

Option 1: Three reviews a year. The shoulder month of April is covered under the Summer credit support requirements.

Season	MCL effective Date(s)	MCL Letter	Months Covered by Letter
Summer 13/14	1 December 2013	10 November 2013	December 2013 January 2014 February 2014 March 2014 April 2014
Shoulder 14	1 September 2014	10 August 2014	September 2014 October 2014 November 2014
Winter 14	1 May 2014	10 April 2014	May 2014 June 2014 July 2014 August 2014

Option 2: Three reviews a year. A single review of shoulder credit support requirements to cover the month of April and September to November.

Season	MCL effective Date(s)	MCL Letter	Months Covered by Letter
Summer 13/14	1 December 2013	10 November 2013	December 2013 January 2014 February 2014 March 2014
Shoulder 14	1 April 2014 1 September 2014	10 March 2014	April 2014 September 2014 October 2014 November 2014
Winter 14	1 May 2014	10 April 2014	May 2014 June 2014 July 2014 August 2014

Option 3: Four reviews a year. Two reviews for shoulder credit support requirements to cover the month of April and separately the months of September to November.

Season	MCL effective Date(s)	MCL Letter	Months Covered by Letter
Summer 13/14	1 December 2013	10 November 2013	December 2013 January 2014 February 2014 March 2014
Shoulder 14	1 April 2014	10 March 2014	April 2014
Winter 14	1 May 2014	10 April 2014	May 2014 June 2014 July 2014 August 2014
Shoulder 14	1 September 2014	10 August 2014	September 2014 October 2014 November 2014

At this time AEMO's preferred option, based on operational efficiency and credit support risk management, is Option 1 (the shoulder month of April is covered under the summer credit support requirements). Calculation of the shoulder parameters including volatility factors and average price will include the month of April. The assessment of Market Participant energy values will be undertaken in early August for an effective date in early September. AEMO is interested to understand Market Participant's views on this proposed approach.

AEMO will continue to assess any changes in load, generation and reallocation and review a Market Participant's MCL at any time if these parameters change significantly to that used in the assessment of prudential settings.

4.3.3 Outcome

No changes to the draft Procedures.

4.4 Material Issue 4: Load determination based on backward looking load

4.4.1 Issue/Comment

…the estimation process and the information used in calculating the Procedures are both backwards looking. Ergon Energy is concerned that using historical load data will impact our prudential requirements going forward.

4.4.2 AEMO response

The estimation process for load, generation and reallocations will not change from the current process. Load and generation will be determined by review of the recent behaviour of the Market Participant and an assessment of any evident trends identified by AEMO. Reallocations will be based on the authorised reallocations in the system from the review effective date.

4.4.3 Outcome

No changes to the draft Procedures.

4.5 Material Issue 5: Explanation of the PRAF formulation

4.5.1 Issue/Comment

For the load PRAF, the calculation is: $PRAF_{L,R} = MAX\ [LWPR_{L,R}, (LWPR_{L,R})^2]$.
Ergon Energy seeks an explanation from AEMO on the application of the square to the Load Weighted Price Ratio (LWPR) in the PRAF formulas.

4.5.2 AEMO response

The Final Rule requires that AEMO take into consideration 'the relationship between average *load* and *peak load* for each *Market Participant*' and 'the correlation between *energy*, *reallocations* and the *regional reference price*' when developing the Procedure. The Market Participant specific PRAFs have been designed to meet these requirements.

The PRAF is based on the ratio of the Market Participant's load weighted price to that of the region in which the load is being assessed. This ratio is the load weighted price ratio LWPR. Analysis conducted by SEED and Taylor Fry has concluded that where the ratio is greater than 1 it is a measure of both the relative price of the Market Participant's load on any day compared to the regional load ('the correlation between *energy*, *reallocations* and the *regional reference price*') and also the relatively greater increase in load that the Market Participant exhibits compared to the region on a high demand day ('the relationship between average *load* and *peak load* for each *Market Participant*'). As such, the appropriate measure is to apply the LWPR twice. For ratios less than 1 this relationship does not apply and the LWPR should be applied only once in reducing the prudential settings.

AEMO will review the performance of the PRAFs annually to ensure that they are operating as intended.

4.5.3 Outcome

The Procedures will include provision for an annual review of the PRAFs. The calculation of PRAFs is unchanged in the draft Procedure.

4.6 Material Issue 6: Credit limit procedures an accurate implementation of the New Prudential Standard Rule change proposal

4.6.1 Issue/Comment

AEMO's Credit Limits Procure appears to fulfil the terms of the Rule change proposal which the AEMC has determined should be made….

The NGF considers AEMO's Credit Limits Procedures to be an accurate implementation of the New Prudential Standard Rule change proposal.

4.6.2 AEMO response

AEMO concurs with these observations and notes that it will be performing an annual review of the performance of the Credit Limit Procedures.

4.6.3 Outcome

No changes to the draft Procedures.

4.7 Material Issue 7: Credit limit procedures not an accurate assessment of Market Participants risk and a barrier to entry.

4.7.1 Issue/Comment

Progressive Green strongly opposes the new draft credit limit procedures. We believe that, rather than more accurately reflecting the credit risk associated with trading in the NEM for particular participants, the draft credit limit procedures completely opposes a true and accurate assessment of risk of participants trading in the market...

adds more barriers to entry to those participants who are of the lowest trading risk to AEMO!

4.7.2 AEMO response

AEMO does not agree with the assessment of Progressive Green. The draft Procedures have been designed to meet the requirements under the Rules for the prudential settings. The introduction of PRAFs have been designed specifically to determine appropriate prudential settings for the relative risks associated with a Market Participant's energy pattern. This will generally result in lower prudential settings for relatively flat loads and higher prudential settings for relatively peaky loads. On this basis AEMO does not agree that the Procedures will increase barriers to entry for the least risk Market Participants.

4.7.3 Outcome

No changes to the draft Procedures.

4.8 Material Issue 8: PRAF calculation is flawed.

4.8.1 Issue/Comment

It is understood that the Participant Risk Adjustment Factor (PRAF) introduced in the new draft credit limits procedures is designed to consider a participant's correlation between energy use and market price (RRP) by comparing a participants load weighted price against the regional load weighted price to assess the risk of the participant having higher outstandings when higher price events occur. However, the way in which the PRAF is calculated is of critical importance in assessing the true risk of a participant to the market. There are two major issues with the draft PRAF calculation methodology:

1. Half-Hour Averaging of Load and Price Profiles for PRAF ….
2. Usage of Different Season to Estimate Half-Hourly Participant Load

4.8.2 AEMO response

To determine a PRAF an estimated half hourly load profile for the Market Participant and the region are created. These are then applied to the estimated price profile for the region to determine the load weighted price ratio (LWPR) and hence the PRAF. AEMO agrees that the Market Participant's load profile for assessing the PRAF should be derived from the previous like season where AEMO considers this to be representative of the Market Participant's future load. Where there is insufficient data available or AEMO is aware that the Market Participant's load or generation behaviour has changed significantly since the previous like season a more representative data range for analysis may be chosen.

AEMO has considered Progressive Green's alternative PRAF calculation and discussed this proposal with them. AEMO acknowledges that the current averaging approach does have a smoothing effect however the approach proposed by Progressive Green results in very significant changes in credit support from one year to the next that are not reflective of the changes in risk of each Market Participant to the NEM.

AEMO is proposing to review the PRAFs as part of the annual review of these procedures and where inadequacies become apparent will work with the market to improve these areas so that each Market Participant's risk to the NEM is appropriately reflected.

4.8.3 Outcome

The draft Procedures will clarify that the half hourly profiles utilised in PRAFs are to be based on the previous like season where practical.

4.9 Material Issue 9: Removal of 28 day credit period

4.9.1 Issue/Comment

Through the rule change, the new standard will remove the ability for a participant as part of the rule to reduce their MCL Credit Period to 28 days, calculating all MCL's off a 42 day credit period. This change, alone adds an extra 50% capital required to fund a participant's MCL.

4.9.2 AEMO response

The Final Rule removed the ability to reduce the credit period to 28 days and this is not a matter for the Procedures calculation. AEMO does not agree that this change has caused a 50% increase in capital required to fund credit support in the NEM. The analysis performed by SEED and Taylor Fry has shown that over time the credit support requirements under the 2% prudential standard are equivalent to those requirements under the previous methodology with a reduced credit period. If the current low volatility and prices in the NEM are sustained until summer 2013 then a step increase in the credit support requirements will occur. This is due to the fact that the current methodology only takes into account the previous 12 months whereas the Procedures will trend over a decade of behaviour in the NEM. This anticipated outcome has been clearly articulated in the NGF submission to this consultation.

4.9.3 Outcome

No change in the draft Procedures.

4.10 Material Issue 10: AEMO should discuss forecast load and generation with Market Participants

4.10.1 Issue/Comment

Currently the Estimated Load has some level of subjectivity involved in the process due to the fact that participants are at different stages of growth and may have increasing or *reducing load. There is no mention of any change to this level of subjectivity and discussion with Market Participants in the new credit limit methodology ….. explicitly stated as a valid part of the methodology*

4.10.2 AEMO response

AEMO is intending to continue the current process for estimating the load, generation and reallocations used in the calculation of the MCL. This includes discussion with Market Participants where an identifiable change in the energy patterns has occurred or where Market Participants have information they wish to be taken into account in AEMO's assessment of their energy. AEMO agrees to include a statement to this effect in the draft Procedures.

4.10.3 Outcome

A statement to the effect that information from Market Participant's regarding their future load and generation may be taken into consideration has been included in the draft Procedures.

4.11 Material Issue 11: Procedures reflect a barrier to entry for Market Participants with customer oriented philosophies.

4.11.1 Issue/Comment

For a vertically integrated player, this change in the MCL will have negligible impact due to their ownership of opposing generation and retail assets in regards to settlement with AEMO.
A newer player (generator or retailer) who may have fresh ideas and may have much more customer-oriented philosophies is left via this new credit limit procedures with larger barriers to entry.

4.11.2 AEMO response

AEMO agrees that vertically integrated Market Participants have a natural hedge in the market which leads to lower credit support requirements than a Market Participant that is a retailer only. AEMO believes that the introduction of PRAFs into the determination of credit support requirements will benefit those Market Participants whose load profile over the credit period is less risky than that of the region. Market Participants who, for example, have demand side participation acting to reduce their load during the peak hours of the day will have relatively lower credit support requirements than those Market Participants whose load mirrors that of the region.

AEMO is supportive of demand side management and believes that credit support requirements should be lower for Market Participants that manage their risk to the NEM in this way. AEMO is proposing to review the PRAFs as part of the annual review of these procedures and where inadequacies become apparent will work with the market to improve these areas so that each Market Participant's risk to the NEM is appropriately reflected.

4.11.3 Outcome

No change in the Procedure

5. Draft Determination

AEMO's draft determination is to amend the Procedures to reflect:

- the AEMC's Rule as made;
- adjustments for the introduction of carbon price from 1 July 2012;
- inter regional adjustments in the prudential margin;
- discretion to not take into account reallocations which are not consistent with the valuation attributed to them under the Procedures; and
- responses to matters raised in submissions in the first round of consultation, in accordance with the outcomes set out in section 4 and Appendix 1.

The draft procedures (change marked) have been published with this draft report and determination at: http://www.aemo.com.au/Consultations/National-Electricity-Market/Open/Credit-Limit-Procedures-Consultation.

APPENDIX 1 Submissions Received

ISSUE	TOPIC	ISSUE	AEMO RESPONSE	OUTCOME
1	Credit limit procedures meets intended outcomes.	See section 4.1.1	See section 4.1.2	See section 4.1.3
2	Notification process	See section 4.2.1	See section 4.2.2	See section 4.2.3
3	Frequency of review	See section 4.3.1	See section 4.3.2	See section 4.3.3
4	Determining future load data	See section 4.4.1	See section 4.4.2	See section 4.4.3
5	Participant risk adjustment factor (PRAF) formulation.	See section 4.5.1	See section 4.5.2	See section 4.5.3
6	Credit limit procedures an accurate implementation of the Rule change proposal	See section 4.6.1	See section 4.6.2	See section 4.6.3
7	Opposes a true and accurate risk assessment of Market Participants in the NEM and adds barriers to entry.	See section 4.7.1	See section 4.7.2	See section 4.7.3
8	PRAF calculation is	See section 4.8.1	See section 4.8.2	See section 4.8.3

	flawed.			
9	Removal of a reduced credit time period	See section 4.9.1	See section 4.9.2	See section 4.9.3
10	Forecast load and generation.	See section 4.10.1	See section 4.10.2	See section 4.10.3
11	Procedures reflect a barrier to entry	See section 4.11.1	See section 4.11.2	See section 4.11.3
12	Prudential Standard drafting – Section 2	Ergon: *The current drafting of this paragraph is lengthy and does not reflect the definitions contained under clause 3.1.1A of the draft Rule. For example, the prudential standard is the "value of the prudential probability of exceedance", whereas the prudential probability of exceedance "means the probability of a Market Participant's maximum credit limit…". To improve clarity, Ergon Energy suggests that the Procedures should distinctly identify the prudential standard and the prudential probability of exceedance.*	AEMO agrees drafting is inconsistent with Rule	Drafting modified to make section 2 consistent with the definitions in the Rules.
13	Repetition of MCL being equal to sum of OSL and PM	Ergon: *Section 5.1 In line with the requirements of the NER, the Procedures determines the MCL for a Market Participant as the sum of the OSL and the PM.* *Ergon Energy questions the placement of this sentence under its current heading, "Components AEMO must consider in calculating the OSL and the PM", as it relates to the calculation of the MCL not the OSL and the PM. As the MCL calculation is repeated under sections 12 and 12.1, we suggest deleting this sentence.*	AEMO agrees that this sentence is unnecessary in this section.	Drafting modified to remove superfluous reference to MCL being sum of PM and OSL.

14	Incorrect reference to Schedule 3.3	Ergon: *Section 6.3.1.2. The OSL time period (TOSL) is the typical number of trading days used to calculate a* Market Participant's *OSL. It is based on factors as defined in Schedule 3.3 of the NER.* *Ergon Energy understands that Schedule 3.3 of the Rules will be deleted under the draft Rule. Ergon Energy considers this reference should be removed from the Procedures.*	AEMO agrees that reference to Schedule 3.3 should be removed.	Drafting modified to remove reference to Schedule 3.3
15	Rounding of outstandings limit	Ergon: *Section 7* Outstandings Limit *Calculation* *The calculated value is rounded in accordance with Section 12.1.* *Ergon Energy notes that Section 12.1 of the Procedures refers to rounding principles for the MCL and PM values only.*	AEMO agrees that detail on the outstandings limit rounding should be included in Section 12.1	Drafting modified to include rounding information for the outstandings limit
16	Rounding of Participant Risk Adjustment Factor	Ergon: *Section 10 Calculation of Participant Risk Adjustment Factor* *The calculated value is rounded in accordance with Section 12.1. Ergon Energy notes that Section 12.1 of the Procedures refers to rounding principles for the MCL and PM values only.*	AEMO believes the rounding of the PRAF, in line with that of the volatility and prices, need not be detailed in the Procedures	Drafting modified to remove reference to rounding of the PRAFs
17	Publication of annual review.	Ergon: *Section 13 Clause 3.3.8(f) of the NER requires that AEMO must review, prepare and publish a report on the effectiveness of the methodology in achieving the objective of these Procedures to ensure the prudential standard is met for the NEM, with any recommendations for the enhancement of the methodology.* *Clause 3.3.8(f) of the draft Rule requires AEMO to undertake these activities "at least once a year". Ergon Energy believes*	AEMO agrees that reference to an annual review should be made in Section 13.	Drafting modified to include the requirement for AEMO to publish an annual review on the performance of the Procedures.

		the Procedures should be amended to reflect this requirement.		
18	Typographical errors section 5, 5.1, 13.1	Minor Typographical errors – see Ergon Energy Submission.	AEMO agrees that these typographical errors should be corrected	Errors corrected
19	Right to review credit support requirements	NGF: *The NGF does not have concerns that these calculations are not intended to be recalibrated every year. In any case AEMO has the right to request greater credit support should conditions change and the Credit Limits Procedure be found to be holding too little credit support.*	AEMO clarifies that the volatility factors and prices used in any season are not subject to review and change under the Procedures. A Market Participant's load, generation and reallocations are subject to review for the purposes of determining revised prudential settings at any time	No change to drafting.