AEMC

REVIEW

Australian Energy Market Commission

FRAMEWORK AND ISSUES PAPER

Review into the role of hedging contracts in the existing NEM prudential framework

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About the AEMC

The Council of Australian Governments, through its Ministerial Council on Energy, established the Australian Energy Market Commission (AEMC) in July 2005 to be the Rule maker for national energy markets. The AEMC is currently responsible for Rules and policy advice covering the National Electricity Market. It is a statutory authority. Our key responsibilities are to consider Rule change proposals, conduct energy market reviews and provide policy advice to the Ministerial Council as requested, or on AEMC initiative.

Foreword

The Australian Energy Market Commission is pleased to publish this consultation document seeking views from stakeholders on a range of issues associated with its Review into the potential use of futures and other types of contracts in the National Electricity Market (NEM) prudential framework.

NEM participants enter into over-the-counter (OTC) and futures contracts (hedge contracts) to manage the risk from operating in the NEM. In addition, the NEM participants are required to provide credit support (in the absence of an acceptable credit rating) to NEMMCO that is at least equal to their Maximum Credit Limit.

The gross pool nature of the NEM in conjunction with the hedging contracts gives rise to circular cash flows or contracts for difference payments. Eliminating or reducing these circular cash flows would minimise settlement risks relating to the pool and contract settlements in the NEM, and mitigate prudential burden on NEM participants.

The NEM settlement arrangements have been modified to incorporate reallocations to take hedging contracts into account. A reallocation is a Rules-supported arrangement between two Market Participants and NEMMCO, that normally allows an off-market financial commitment, such as a hedge contract between participants to be netted off against pool settlements.

Stakeholders have expressed concern that the take up of reallocation arrangements has been low. Whilst the percentage of energy reallocated in the NEM has increased, it is less than 9% of total customer energy. Stakeholders have also noted a number of issues in relation to reallocation arrangements and have expressed concern on the lack of an effective mechanism to integrate futures contracts into the existing NEM prudential framework.

The Commission has initiated this Review to advise the Ministerial Council on Energy on ways in which the NEM participants' futures and other types of contracts can be integrated into the NEM prudential framework with the objective of enhancing the operation and efficiency of that regime and contribute to the achievement of the national electricity objective. The scope of the review includes an assessment of alternative approaches for the determination of the Maximum Credit Limit.

The Commission invites submissions from stakeholders to be lodged by 24 April 2009.

John Tamblyn

Chairman

Contents

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APC	Administered Price Cap
ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
CFD	Contract for Difference
Commission	see AEMC
CPRS	Carbon Pollution Reduction Scheme
CPT	Cumulative Price Threshold
Credit Amounts	Generation Sales and reallocation credit
Debit Amounts	Energy Purchases and reallocation debit
Ex Ante Reallocation	A reallocation transaction that occurs in a trading interval that takes place at a time after the reallocation request is made
Ex Post Reallocation	A reallocation transaction that occurs in a trading interval that takes place at a time before the reallocation request is made
FOA	Futures Offset Arrangements
GST	Goods and Services Tax
Market Participant	A person who is registered by *NEMMCO* as a *Market Generator*, *Market Customer* or *Market Network Service Provider* under Chapter 2 of the Rules
MCE	Ministerial Council on Energy
MCL	Maximum Credit Limit
MNSP	Market Network Service Provider
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
NEO	National Electricity Objective
NEL	National Electricity Law
NER	National Electricity Rules
OTC	Over the Counter
Paper	Framework and Issues Paper
Participant	See Market Participants

PM	Prudential Margin
Procedure	NEMMCO's prudential procedures, reallocation procedures, or any procedures given effect by the Rules
Proponents	Australian Power & Gas, Infratil Energy Australia and Momentum Energy
Prospective Reallocation	see Ex Ante Reallocation
Reaction Period	The period of time it takes to remove a Market Participant from the NEM; defined as 7 days
Reallocation Timetable	Timetable for reallocation requests as published by NEMMCO
Reasonable Worst Case	A position that, whilst not being impossible, is to a probability level that the estimate would not be exceeded more than once in 48 months.
RET	Renewable Energy Target
Review	Review into the Role of Hedging Contracts in the Existing NEM Prudential Framework
RMCL	Reduced MCL provided under clause S3.3.1(b)(iii) of the Rules
RRP	Regional Reference Price
Rules	National Electricity Rules
SDA	Security Deposit Amount
SFE	Sydney Futures Exchange
SFECC	SFE Clearing Corporation
Spot Price	See RRP
Trading Limit	The difference between the MCL and the PM
VFR	Volatility Factor
VoLL	Value of Lost Load

1 Introduction to the Review

The Australian Energy Market Commission (Commission) has initiated a review (Review) into the role of hedging contracts in the existing National Electricity Market (NEM) prudential framework.

This Framework and Issues Paper (the Paper) sets out the Commission's proposed approach, assessment framework and outlines issues on which the Commission is seeking stakeholders' views.

Terms of Reference for the Review were published on 22 January 2009 and are contained in Appendix A to this paper.

1.1 Rationale behind the Review

The existing NEM prudential regime aims to maintain a level of prudential quality in the NEM that ensures that generators do not factor credit risk into their bids to the National Electricity Market Management Company (NEMMCO).

Under this prudential regime, NEM participants are required to lodge credit support (often in the form of a bank guarantee) with NEMMCO of not less than their Maximum Credit Limits (MCLs).

In recognition of the hedging contracts entered into by market participants, the National Electricity Rules (Rules) and Procedures provide for reallocation arrangements whereby two NEM participants (typically, but not necessarily, a generator and a retailer) can "lodge" a quantity of energy or cash with NEMMCO. These reallocation arrangements were introduced to minimise the settlement risk of circular cash flows, and to minimise the prudential support requirements from NEM participants.

NEMMCO has also developed Procedures for the reallocation of swaps and options but it is not yet in operation.

The reallocation arrangements were amended in 2007 to make a provision for the registration of a reallocating agent. It was envisaged that this would allow non-market participants to register as reallocating agents and utilise futures contracts under reallocation arrangements.

NEMMCO and the Australian Securities Exchange (ASX) were jointly working on a framework to accommodate futures contracts in the NEM prudential framework under existing Rules, however, work on this was discontinued in January 2008.

Following the discontinuation of the NEMMCO/ASX work, Australian Power & Gas, Infratil Energy Australia and Momentum Energy (Proponents) jointly proposed a Futures Offset Arrangements (FOA) Rule change. This Rule change proposed a mechanism to offset the prudential requirement of a NEM participant using its futures contract margin payments.

In addition, the FOA Rule change proposed to revise the MCL methodology. Rather than the MCL methodology using a backward looking price observation as a basis for estimating future pool prices, the Proponents proposed that the MCL methodology would utilise Sydney Futures Exchange (SFE) electricity futures prices as the key inputs of the model. This would represent a risk adjusted forward looking market consensus view of future pool price outcomes.

On 22 January 2009, the Commission made a draft determination in relation to the FOA Rule change proposal in which it decided not to make a Rule or a preferred Rule.

The Commission however noted that elements of the Rule change proposal have merit which warrant further review. The Commission therefore initiated this Review under section 45 of the National Electricity Law (NEL). Under section 45 of the NEL, the Commission may conduct a review into:

- the operation and effectiveness of the Rules; or

- any matter relating to the Rules.

There are two key elements to the Review, which include:

- investigating ways in which NEM participants' futures and other types of contracts can be integrated into the NEM prudential framework with the objective of enhancing the operation and efficiency of that regime (see chapters 3 and 4); and

- investigating the feasibility of incorporating futures prices in the MCL methodology (see chapter 5).

The operation and effectiveness of the NEM prudential framework requires that the role of hedging contracts and "reallocation/offset" arrangements and the MCL be considered in conjunction. For example, a regime with a higher MCL but which results in an improved reallocation/offset mechanism may deliver a better NEM prudential framework compared to the current framework. Similarly, a lower MCL with an effective management of participant's liabilities to the NEM may also provide an enhanced prudential framework.

This Review will form the basis of the Commission's recommendations, where appropriate, to the Ministerial Council on Energy (MCE).

1.2 Scope of the Review

The scope for this review includes:

- investigating the feasibility of developing a mechanism to offset the prudential requirement of a NEM market participant using its contract position;

- investigating the feasibility of incorporating futures prices in the MCL methodology;

- investigating and developing any other appropriate proposals that may enable NEM participants' contract positions to be taken into account so as to enhance the NEM prudential framework;

- as appropriate, analysis of the potential design, and statistical or other suitable analysis to confirm the costs and benefits, of any such proposals;

- as appropriate, determining the final design of any such proposals (this includes, but is not limited to, appropriate information, reporting and data requirements); and

- as appropriate, development of proposed Rules to implement these arrangements.

The scope of the review will seek to identify solutions within the context of the Rules framework.

The Commission notes that on 6 February 2009, the MCE released its forward work plan[1] as part of the communiqué following its 18th meeting. Under the work plan, the MCE recognised the need for a "closer examination of the capacity of market participants to meet prudential arrangements" with the introduction of the Carbon Pollution Reduction Scheme (CPRS) and expanded Renewable Energy Target (RET).

The Commission understands that the MCE would approach the Australian Energy Market Operator (AEMO) to develop a draft terms of reference on this matter.

1.3 Approach to the Review

In approaching this Review, the Commission will have regard to the:

- National Electricity Objective (NEO);

- relevant MCE statements of policy principles;

- assessment criteria that are consistent with the NEO;

- previous reviews or Rule changes;

- outcome of consultation processes in relation to this Review;

- advice from the Working Group established for the Review; and

- advice from consultants (where applicable).

In addition, any recommendations by the Commission on this Review would take into account the subject matters for which the Commission may make Rules, as set out in section 34 of the NEL.

[1] MCE, 2009, *18th Meeting Communique*, http://www.ret.gov.au/Documents/mce/about/meetingcomms.html

The Commission will adopt a staged approach in carrying out the Review:

- In stage 1, the Commission will consult and provide a report to the MCE setting out the Commission's final recommendations.

- In stage 2, where appropriate, the Commission will draft recommended Rules to support its recommendations in stage 1.

1.3.1 National electricity objective

The NEO is set out in section 7 of the NEL. This section of the law states that:

> "The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system."

In addition, the Commission will have regard to any relevant MCE statements of policy principles in this Review.

1.3.2 Assessment criteria

Consistent with the NEO, the following specific assessment criteria have been selected to undertake detailed assessment of options:

- prudential quality of the NEM;

- cost of capital to trade in the NEM wholesale market; and

- operational effectiveness.

The criteria are discussed in more detail in section 2.3 of this Framework and Issues Paper.

In summary, with respect to:

- investigations into the role of the hedging contracts in the existing NEM prudential framework, the objectives are to improve (or at least maintain) the prudential quality of the NEM; reduce (or at least maintain) cost of capital to trade in the NEM wholesale market; and ensure that any arrangements recommended are operationally effective; and

- review of the MCL methodology, the objective is to ensure that the prudential quality is effective; costs are efficient; and that any recommendations achieve operationally effective arrangements.

When applying the above criteria, the alternatives are to be tested against arrangements that are currently in place.

1.3.3 Previous reviews or Rule changes

The Commission will have regard to previous reviews and Rule changes. In particular, the Commission would have regard to:

- the FOA Rule change proposal and Rule determination;[2] and
- the reallocation Rule change proposal and determination.[3]

1.3.4 Outcome of consultation

The Commission will consult on a formal and informal basis with interested parties. This will take the form of written submissions, meetings and public forums.

The Commission will have regard to the outcome of the consultation processes. In particular, the Commission will have regard to the submissions received from interested parties.

1.3.5 Advice from the Working Group

In addition, the Commission has established a Working Group to provide the Commission with relevant expert advice and information. Workshops have been held with the Working Group. The Commission will have regard to the advice from this Working Group.

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[2] AEMC, 2009, *Futures Offset Arrangements*, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 18 March 2009

[3] AEMC, 2007, *Reallocations*, http://www.aemc.gov.au/electricity.php?r=20060425.162734, viewed 18 March 2009

1.4 Review Timetable

The table below outlines the timelines for the Review.

Milestone	Timing
Framework and Issues Paper	26 March 2009
Submissions on Framework and Issues Paper close	24 April 2009
Framework and Issues Public Forum	April 2009
Stage 1 Draft Report	June 2009
Public Forum	July 2009
Stage 1 Final Report to MCE	September 2009

1.5 Lodging submissions

The Commission invites written submissions from interested parties in response to this Framework and Issues Paper by **5 pm** on **Friday 24 April 2009**. Submissions may be sent electronically or by mail in accordance with the following requirements.

The Commission publishes all submissions in its website subject to a claim of confidentiality.

1.5.1 Lodging a submission electronically

The submission must be sent by email to submissions@aemc.gov.au. The email must contain the phrase "Review into the role of hedging contracts in the existing NEM prudential framework – Framework and Issues Paper, EMO0008" in the subject line or heading. The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The submission must be in PDF format, and must also be forwarded to the Commission via ordinary mail.

Upon receipt of the electronic version of the submission, the Commission will issue a confirmation email. If this confirmation email is not received within 3 business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

1.5.2 Lodging a submission by mail

The submission must be on letterhead (if from an organisation), signed and dated by the respondent. The submission should be sent by mail to:

Australian Energy Market Commission

PO Box A2449
Sydney South NSW 1235

The envelope must be clearly marked "Review into the role of hedging contracts in the existing NEM prudential framework – Framework and Issues Paper, EMO0008".

Except in circumstances where the submission has been submitted electronically, upon receipt of the hardcopy submission the Commission will issue a confirmation letter. If this confirmation letter is not received within 3 business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

1.6 Structure of the Issues Paper

The remainder of this Framework and Issues Paper is structured as follows:

- Chapter 2 provides that background to the existing NEM prudential framework and the assessment framework for any enhancements;
- Chapter 3 discusses the existing reallocation arrangements, and canvasses issues and options for improvements;
- Chapter 4 canvasses views on ways in which NEM participants' futures contracts may be integrated into the existing NEM prudential framework;
- Chapter 5 examines options for the MCL methodology; and
- Chapter 6 provides a list of matters on which the Commission is seeking comments.

In addition, there are a number of appendices to the Paper which provide background and contextual information to assist parties in their consideration of the issues in relation to this Review.

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2 The existing NEM prudential framework

2.1 Objective of this Review

The objective of this Review is to investigate the opportunities to enhance the operation and efficiency of the NEM prudential framework by integrating NEM participants' futures and other types of contracts into that regime.

There are two key elements to the Review, which include:

- Hedging contracts in the existing NEM prudential framework

This involves investigating ways in which NEM participants' futures and other types of contracts can be integrated into the NEM prudential framework with the objective of enhancing the operation and efficiency of that regime including:

  - Investigations into the opportunities to enhance the operation and efficiency of the existing reallocation arrangements. This is discussed further in Chapter 3; and

  - Investigations into the opportunities for integrating NEM participants' futures contracts into that regime. This is discussed further in Chapter 4.

- MCL methodology.

This involves investigating the feasibility of using futures prices in the MCL methodology. This is discussed further in Chapter 5.

This chapter provides the relevant background information and the assessment framework for the Review.

2.2 Existing NEM prudential framework

The NEM is a gross pool, meaning that all sales of electricity must occur through a central trading platform, the spot electricity market. NEMMCO acts as the principal in the settlement of transactions with Market Participants related to the spot electricity market. Settlement occurs up to 5 weeks after the liability accrues, which gives rise to the need for credit and credit limits.

NEMMCO's obligation to settle payments with Market Participants in relation to a billing period is limited to the extent of funds received from Market Participants in respect of that billing period or provided under credit support arrangements.

If a Market Participant cannot satisfy the acceptable credit criteria as provided under the Rules, then that Market Participant must provide NEMMCO with an unconditional guarantee in the form specified by NEMMCO from an acceptable credit support provider for an amount that is greater than or equal to the Market Participant's MCL. NEMMCO may draw on the guarantee if payment is not cleared in time to meet a settlement deadline.

NEMMCO typically holds around $1.5bn to $3.5bn in bank guarantees[4]. State Treasury Corporations also guarantee the operation of the government businesses in the NEM. According to NEMMCO, the guarantee provided by the NSW Treasury Corporation makes up about 30% of the credit support provided to NEMMCO.

Any shortfall in NEMMCO's recovery from any Market Participant in relation to a billing period is shared proportionally by Market Participants due payments in that billing cycle, in accordance with clauses 3.15.22 and 3.15.23 of the Rules.

Confidence of the Market Participants in the settlement of spot electricity transactions is critical to the operation of the NEM and setting the spot market price (referred to as the Regional Reference Price or RRP). Such confidence in the NEM would promote efficient investment in, and efficient operation and use of, electricity services for the long term interest of consumers of electricity, in accordance with the NEO.

The Rules contain various provisions governing the prudential supervision of Market Participants, which are designed to ensure credit risk is not factored into the determination of the RRP. An important provision of the Rules is the requirement for Market Participants to provide credit support in the form of an unconditional guarantee from an approved financial institution to pay NEMMCO an amount up to a pre-determined value. This value is the MCL, which is defined in the Rules as a "reasonable worst case" estimate of the NEM's potential exposure to the participant.

The Prudential Margin (PM) represents the buffer below the MCL which sets the limit under which a Market Participant is permitted to trade, the trading limit. Its purpose is to ensure that the NEM is not exposed to a "reasonable worst case" prudential risk during the period of removing a Market Participant from the NEM (the Reaction Period) in the case of default.

The prudential framework is outlined in detail in Appendix B.

2.2.1 Maximum Credit Limit (MCL) and Prudential Margin (PM)

NEMMCO is required to develop a methodology to determine the MCL and PM of each Market Participant, including those registered as Generators and Market Network Service Providers (MNSP's), in accordance with clause 3.3.8 of the Rules.

The Rules do not prescribe the formula to determine the MCL and PM, rather it specifies the principles of the calculation. Clause 3.3.8(b) of the Rules require that the MCL shall be determined "...on the basis of a reasonable worst case estimate of the aggregate payments for trading amounts (after reallocations) to be made by the Market Participant to NEMMCO over a period of up to the credit period applicable to that Market Participant." Clause 3.3.8(c) of the Rules require that the PM shall be determined "… on the basis of a reasonable worst case estimate of the aggregate of

[4] NEMMCO, *Integration of Physical and Financial risk in Australia's National Electricity Market*, presentation slide number 7, http://www.nemmco.com.au/about/057-0420.pdf, viewed 19 March 2009

the expected trading amount and the reallocation amount owing by the Market Participant to NEMMCO in respect of the reaction period."

"Reasonable worst case" is formally defined as "a position that, while not being impossible, is to a probability level that the estimate would not be exceeded more than once in 48 months."

NEMMCO's Procedure[5] describes the method that NEMMCO uses to calculate MCLs and PMs in an open and objective manner, in accordance with the principles set out in the Rules. If there is any demonstrable inconsistency between the Rules and the method, then the Rules prevail.

Clause 3.3.8(e) of the Rules requires that the MCL and PM for each Market Participant be reviewed annually. NEMMCO has adopted a policy whereby there will be a general review of the MCLs, including the values of the regional parameters used in the determinations, approximately every 3 months. NEMMCO also conducts interim reviews in response to major events.

2.2.1.1 Maximum Credit Limit

In summary, the key parameters of the MCL for each NEM Participant in a region are:

MCL = The average regional pool price for the previous 12 months × a volatility factor based on pool price volatility during the previous 12 months × the NEM participant's likely average daily demand consumption during the quarter × 42 days of potential energy consumption[6].

The methodology to determine a MCL for each Market Participant at present is based on a number of components, which have been developed to be consistent with clause 3.3.8 and Schedule 3.3 of the Rules. The key components are:

- The MCL considers a Market Participant's average daily trading behaviour in the NEM, including energy purchases, generation sales and reallocation. The average daily load is estimated by reference to historical loads for each Market Participant and evident trends in the Market Participant's usage patterns. For new Participants, the estimation will be agreed between NEMMCO and the Participant using any relevant information available.

- The MCL is assessed over a period which differs depending on whether the value is a credit or debit against NEMMCO. Specifically, for debit amounts (energy purchases and reallocation debit) the full credit period is used (ie. 42 days, or 28 days where Reduced MCL has been approved). For credit amounts (generation

[5] NEMMCO, 2008, *Method for Determining Maximum Credit Limit and Prudential Margin*, http://www.nemmco.com.au/met_sett_sra/prudentials.html#MethodofDeterminingMaximumCreditLimits, viewed 18 March 2009

[6] The 42 days consists of approximately 35 days of credit period and 7 days of Reaction Period (the period of removing a participant from the NEM when it does not meet the prudential requirements).

sales and reallocation credit) the period does not include the Reaction Period (i.e. 35 days, or 21 days where Reduced MCL has been approved). This approach is based on a reasonable worst case position of debits continuing to accrue during the Reaction Period, whilst credits cease at the start of the Reaction Period.

- An average price for each region is used to derive trading amounts from energy values. The methodology to estimate the expected electricity price for each region is determined as the average spot price over the previous 12 month period in that region.

- A volatility factor (VFR) is a number derived from the distribution of electricity price and acts as a scaling factor to derive the reasonable worst-case value from the historical average value of liability. The volatility factor is calculated on a regional basis.

- Additional scaling factors are used to derive a more accurate estimate of trading amounts, specifically to include Loss Factor and Goods and Services Tax (GST).

- The MCL is considered zero if the value calculated is negative, and rounding is applied to the MCL to eliminate insignificant changes and to simplify the management of credit support.

- A minimum MCL is usually applied to new retailers, as such retailers are expected to be increasing their energy purchases.

2.2.1.2 Prudential Margin (PM)

The methodology to determine a PM for each Market Participant is based on similar components to the MCL, with the following key differences:

- The PM considers only a Market Participant's net debit amounts against NEMMCO for energy and reallocations. Where a Market Participant has a net credit for either energy or reallocations, then the respective energy or reallocation amounts are not included in the PM calculation, as a reasonable worst case position is that they would cease at the start of the Reaction Period.

- The PM is always assessed over a period equal to the Reaction Period (defined as 7 days).

The principles for determining the PM is defined in clause S3.3.2 of the Rules.

2.2.2 Hedging contracts

In addition to NEM settlement, NEM participants enter into hedging contracts to manage the risk from operating in the NEM. These contracts include over-the-counter (OTC) comprising direct transactions between two counter parties who are known to each other. NEM participants also enter into exchange-traded futures contracts through a SFE Clearing Participant where counter parties are not known to each other.

Appendix D discusses futures contracts in further detail.

The traded volume of the NEM-related OTC, as a proportion of the total electricity traded in the NEM, has increased from 118% in 2003-2004 to 156% in 2007-2008.[7]

The traded volume of the NEM-related futures contracts, as a proportion of the total electricity traded in the NEM, has also increased over the same period. This proportion increased from 16% in 2003-2004 to 123% in 2007-2008.[8]

2.2.3 Reallocation

The gross pool nature of the NEM, in conjunction with the hedging contracts, gives rise to circular cash flows. Circular cash flow is the situation where, on the same day, the retailer will pay NEMMCO for energy consumed, NEMMCO will pay the generator for energy generated, and the generator and retailer will exchange cash representing the Contract for Difference (CFD) payments.

To eliminate or reduce circular cash flows, the NEM settlement arrangements have been modified to take into account the hedging arrangements in place. These are called reallocation arrangements.

The reallocation arrangement would minimise settlement risks relating to the pool and contract settlements in the NEM, and mitigate prudential burden on Market Participants in meeting their NEM prudential requirements.

A reallocation is a Rules-supported financial arrangement between two Market Participants and NEMMCO. The reallocation normally allows an off-market financial commitment, such as a hedge contract between participants, to be netted against pool settlement.

The Rules define a reallocation as:

> A process under which two Market Participants request NEMMCO to make matching debits and credits to the position of those Market Participants with NEMMCO.

A reallocation request is an instruction lodged with NEMMCO to initiate a reallocation transaction, and according to Rule 3.15.11(d) must:

(a) contain the information required by the reallocation Procedures; and

(b) be lodged with NEMMCO in accordance with the reallocation Procedures and the timetable for reallocation requests as published by NEMMCO from time to time (the reallocation timetable).

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[7] AER, 2008, *State of the energy market 2008*, Chapter 3, Table 3.3, http://www.aer.gov.au/content/index.phtml/itemId/723386, viewed 18 March 2009

[8] Ibid.

Reallocation requests may be submitted either before a specified trading interval has occurred (referred to as a "prospective reallocation" or "ex-ante reallocation") or after the specified trading interval has occurred (referred to as "ex-post reallocation").

Prospective reallocations that are submitted according to the ex-ante timetable are included in the determination of a Market Participant's MCL and PM. This enables reallocations to be used to reduce a Market Participant's credit support requirements under the Rules.

A reallocation transaction is defined in Rule 3.15.11(a) as:

> A reallocation transaction is a transaction undertaken with the consent of two Market Participants and NEMMCO under which NEMMCO credits one Market Participant with a positive trading amount in respect of a trading interval, in consideration of a matching negative trading amount debited to the other Market Participant in respect of the same trading interval.

Rule 3.15.11(c) permits NEMMCO to specify the permitted types of reallocation transactions. It states:

> "Reallocation transactions may be of any type permitted in the reallocation procedures."

Appendix C provides details on Energy and Dollar reallocations and Swap and Options reallocations.

As discussed in Appendix C, the Commission notes that NEMMCO has, as required under clause 3.15.11A(a) of the Rules, developed the following reallocation Procedures:

- Reallocation Procedure: Energy And Dollar Offset Reallocations[9]; and
- Reallocation Procedure: Swap & Option Offset Reallocations[10].

NEM participants enter into a reallocation arrangement by submitting a reallocation request to NEMMCO. A reallocation request is jointly requested by two parties, usually a retailer and a generator.

The Commission notes that the utilisation rate of the reallocation arrangement has been relatively low. At the end of 2008, the reallocated energy amount represented approximately 9% of the total NEM traded volume.[11]

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[9] NEMMCO, 2007, *Reallocation Procedure: Energy and Dollar Offset Reallocations*, http://www.nemmco.com.au/met_sett_sra/setprocedures.html#ReallocationProcs, viewed 18 March 2009

[10] NEMMCO, 2007, *Reallocation Procedure: Swap & Option Offset Reallocations*, http://www.nemmco.com.au/met_sett_sra/setprocedures.html#ReallocationProcs, viewed 18 March 2009

As part of consultations on the FOA Rule change, the Proponents also outlined a number of issues associated with the reallocation mechanism and existing NEM prudential framework. These issues have been documented in the draft Rule determination on the FOA Rule change proposal.[12]

2.3 Assessment Framework

In conducting this Review, the matters that the Commission will have regard to are discussed in section 1.3 of this Framework and Issues Paper. In addition, the Commission would also consider the specific criteria relevant for each of the two key elements of this Review.

2.3.1 Assessment framework for integrating hedging contracts into the existing NEM prudential framework

In this part of the Review, the Commission would consider options to enhance the operation and efficiency of the existing NEM prudential framework by integrating NEM participants' futures and other types of contracts into that regime. They may include improvements to current reallocation arrangements, futures offset arrangements and any other appropriate arrangements.

To assess these options, the Commission will take the following criteria, which are consistent with the NEO, into consideration:

- improve (or at least maintain) the prudential quality of the NEM;
- reduce (or at least maintain) costs of capital to trade in the NEM wholesale market; and
- operational effectiveness.

Further details on these criteria are provided below.

The assessment of the options against these criteria would be undertaken with reference to the current arrangements for prudential management in the NEM, with and without reallocation arrangements.

The Commission would also have regard to the impacts of the recent events in the world financial markets which may have impacted on the availability of capital for NEM Market Participants.

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11 NEMMCO, *Integration of Physical and Financial risk in Australia's National Electricity Market*, presentation slide number 11, http://www.nemmco.com.au/about/057-0420.pdf, viewed 19 March 2009

12 AEMC, 2009, *Draft Rule determination – National Electricity Amendment (Futures Offset Arrangements (FOAs)) Rule 2009*, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 12 March 2009

The Commission invites comments from interested parties on whether this approach is appropriate and if any other assessment should be undertaken.

2.3.1.1 Improve, or at least maintain, the prudential quality of the NEM

In order to assess whether an option would improve, or at least maintain, the prudential quality of the NEM, the Commission would have regard to:

- the increased likelihood of shortfall in payment to generators in the NEM for different options;
- the certainty, and risks of cash flows for different options;
- the increased likelihood and consequence of clawback risks (see 4.4.1.5 for further discussion on clawback risks); and
- whether the options incorporate measures to mitigate risks.

The Commission invites comments from interested parties on the appropriateness of the assessment criteria outlined above and whether any other criteria should also be taken into account.

2.3.1.2 Reduce (or at least maintain) the cost of capital to trade in the NEM wholesale market

In order to assess whether an option would reduce, or at least maintain, the cost of capital to trade in the NEM wholesale market, the Commission would assess:

- reduction in the prudential support costs;
- the change in cash management costs of participating in the NEM wholesale market, such as margin calls and counter-party guarantees;
- the change in operating costs;
- the fees imposed by relevant service providers;
- the opportunity costs for NEM Market Participants;
- the potential cost reduction due to increased diversity of prudential support instruments; and
- any other relevant costs.

The Commission invites comments from interested parties on the appropriateness of the assessment criteria outlined above and whether any other criteria should also be taken into account.

2.3.1.3 Operational effectiveness

In order the assess whether an option is operationally effective, the Commission would consider whether:

- the option fits well into the existing NEM prudential framework and the extent of any costs of implementing and administering the option;
- the option is transparent and enforceable;
- the option can be understood by stakeholders; and
- information is adequate to implement the option.

The Commission invites comments from interested parties on the appropriateness of the assessment criteria outlined above and whether any other criteria should also be taken into account.

2.3.2 Assessment framework for MCL methodology

In light of the submissions to the FOA Rule change, the Commission proposes to widen the scope of the review into the MCL methodology to include investigations into and clarification of the "reasonable worst case" used as basis for determining the MCL and to investigate the merits of an alternative approach for establishing MCL.

The Commission, under a wider interpretation of the terms of reference proposes to undertake the following investigations:

- assess and clarify the interpretation of the "reasonable worst case" performance target established by the Rules; and
- compare the current methodology with the use of futures prices, and the "stress test" approach to determine the method that best meets the performance target.

Consistent with the NEO, the Commission considers that the following criteria should be adopted for assessing options for the determination of the MCL:

- appropriate prudential quality for the NEM - set the MCL at an appropriate level;
- cost to NEM participants is efficient; and
- operational effectiveness - ensure a degree of predictability in calculation to allow Market Participants to make arrangements to meet their credit support requirements in advance.

Further information on the criteria is provided below.

2.3.2.1 MCL set at an appropriate level and cost efficiency

Consistent with the NEO, the purpose of the MCL (as adjusted for reallocations etc), is to ensure that NEMMCO holds adequate level of prudential supports that meet a Market Participant's accrued liabilities taking into account a Reaction Time in the event of a default.

A MCL that is higher than the optimal level would mean that the Market Participants' costs of meeting the prudential support requirements are higher than is necessary, and as such is inefficient. On the other hand, a MCL that is too low (or perceived to be too low) is inefficient because it increases the risk of accrued liabilities not being met (or the perception that they will not be met). This is likely to result in credit participants not being paid and/or higher pool prices which factor in credit risk. Further, MCL volatility may cause problems for participants in gaining bank guarantees.

The existing NEM framework for the determination of the MCL acknowledges that the predicting the future is going to be imprecise, therefore has adopted a "reasonable worst case" performance target, based on probability.

2.3.2.2 Operational effectiveness - MCL calculation is predictable

The MCL determines the level of credit support that Market Participants, who do not satisfy an acceptable credit criteria, would need to provide to NEMMCO when participating in the NEM. Arrangements for credit support would need to be arranged in advance, therefore it is important that a Market Participant is able to make a reasonable estimate of the requirements well in advance.

The Commission seeks the views of stakeholders as to whether the proposed assessment criteria is appropriate, and if not, are there any other factors that should be taken into account?

3 The reallocation arrangements

3.1 Objective

The objective of the Review is to investigate the opportunities to enhance the operation and efficiency of the NEM prudential framework by integrating NEM participants' futures and other types of contracts into that regime.

This chapter outlines the existing reallocation arrangements that have been designed to integrate hedging contracts into the NEM prudential regime, with a view to investigating opportunities to enhance its operation and efficiency.

3.2 Background

In recognition of the hedge contracts entered into by market participants, the Rules and Procedures provide for reallocation arrangements whereby NEM participants can "lodge" a quantity of energy or cash with NEMMCO. These reallocation arrangements were introduced to minimise the settlement risk of circular cash flows, and to minimise the prudential support requirements from NEM participants.

NEMMCO has also developed Procedures for the reallocation of swaps and options but it is not yet in operation.

The reallocation arrangements were amended in 2007 to make a provision for the registration of a reallocating agent. It was envisaged that this would allow non-market participants to register as reallocating agents and utilise futures contracts under reallocation arrangements.

The various reallocation arrangements are discussed in more detail below.

3.2.1 Energy reallocation

Under this arrangement, the NEM settlement required from the credit party (usually a retailer) is reduced by an amount based on the quantity of energy nominated in a reallocation request, at the prevailing electricity pool price. On the other hand, the NEM settlement amount to be paid to the debit party of a reallocation request (usually the generator) is reduced by the same amount.

The amount of energy nominated in a reallocation request may represent the energy amount in a hedging contract entered between the generator and retailer.

An energy reallocation is usually entered on an ex-ante basis. That is, it is entered before the specified trading interval nominated in the reallocation request.

The generators and retailers would then settle the payments for their hedging contracts outside the NEM.

Since the settlement amount required of the retailer is reduced after a reallocation request, the credit risk posed by the retailer would also be reduced proportionally. Therefore, under an energy reallocation, NEMMCO would reduce the amount of MCL required from the retailer. The amount of MCL reduction is proportional to the amount of energy reallocated at the expected price of the pool outcome for the relevant period (under the current MCL methodology, the expected price of the pool outcome is projected based on the historical price).

Once a reallocation arrangement is entered, the generator bears the risk of default by the retailer for payments (which are outside the NEM) relating to reallocated amounts. The reallocated amount would cease to pose a market risk unless the generator fails to generate sufficient amount of electricity to meet its reallocated amounts, in which case NEMMCO is likely to cancel the reallocation arrangement. The cancellation of a reallocation arrangement would require the retailer to provide a replacement security. The termination issues associated with a reallocation arrangement is discussed further in section 3.2.4 of this Framework and Issues Paper.

The Commission invites comments from interested parties as to how an energy reallocation would alter the credit risks in the NEM, compared to the scenario where there is no reallocation arrangement in the NEM.

Is there an increase in the risk to the NEM under reallocation? If so, is it material and what arrangements can be put in place to manage it?

The Commission seeks stakeholders views as to how widely this reallocation arrangement is used and on the improvements that can be made to the arrangements to increase the utilisation of energy reallocation.

3.2.2 Dollar reallocation

A dollar reallocation specifies a dollar amount (usually a single value) which is used directly to determine the reallocation amount. This is used primarily as an ex-post reallocation for the management of outstandings.

The Commission invites comments from interested parties as to how a dollar reallocation would alter the credit risks in the NEM, compared to the scenario where there is no reallocation arrangement in the NEM.

The Commission seeks stakeholders views as to how widely this reallocation arrangement is used and on the improvements that can be made to the arrangements to increase the utilisation of dollar reallocation.

3.2.3 Swap & Option Offset Reallocations

NEMMCO published this reallocation Procedure to allow reallocation of NEM participants' contract positions in swaps, caps and floors.

Under this arrangement, NEMMCO would credit the reallocation party whose swaps, caps or floors are in-the-money with the difference payment[13]. On the other hand, where required, NEMMCO would debit the counter party of the swaps, caps or floors by an equal amount.

This is discussed further in Appendix C of this Framework and Issues Paper.

Under this reallocation arrangement, the extent of the credit support to the NEM would be based on the strike price of the reallocated contracts.

The Commission requests comments from interested parties as to how a Swaps & Options Offset Reallocation would alter the credit risks in the NEM, compared to the scenario where there is no reallocation arrangement in the NEM.

The Commission seeks stakeholders views, noting that this arrangement is currently not operational, on any potential improvements that can be made to the arrangements to improve the utilisation of Swap & Option Offset Reallocation.

The swap and option reallocation Procedure is not being used at present. The Commission understands that NEMMCO is awaiting a license exemption from ASIC to give effect to the Swap & Option Offset Reallocation Procedure.

The Commission invites comments from NEM participants as to the impact a requirement to hold an ASIC licence (if this were to be the case) will have on their businesses.

3.2.4 Risk of deregistration of a reallocation arrangement

Reallocation arrangements once registered with NEMMCO cannot be unilaterally terminated by a party to the arrangements. However, under the Rules, NEMMCO may deregister a reallocation arrangement under certain conditions.

Where a generator fails to generate to meet its reallocated amount, it would start accruing payment owing to NEMMCO. This payment owing to NEMMCO represents a credit risk for the NEM.

In the event where the payment owing exceeds a limit set by NEMMCO (the trading limit for the generator), NEMMCO would request the generator to provide credit support as a way to mitigate the credit risk posed by the generator.

In the event where the generator does not respond to this request to provide credit support, NEMMCO would exercise its right to deregister the reallocation. This is would leave the retailer without the reallocation, and require it to provide replacement prudential support.

The Commission seeks comments from interested parties on the risks associated with the deregistration of a reallocation arrangement.

[13] The difference between the prevailing pool price and strike price of the swap, option or floor.

The Commission also seeks comments on other risks associated with a reallocation arrangement.

4 Integrating futures contracts into the NEM prudential framework

4.1 Objective

The objective of this part of the Review is to investigate the opportunities to enhance the operation and efficiency of the NEM prudential framework by integrating NEM participants' futures contracts into that regime.

This chapter examines potential framework for integrating futures contracts into the NEM prudential regime in order to enhance its operation and efficiency.

4.2 Background

Swap contracts are entered between two known parties, usually a generator and retailer, for the purpose of risk management. The contract is entered at an agreed price (known as the strike price) where any CFD payment is settled directly between the market participants, or under a reallocation arrangement facilitated through NEMMCO. The CFD payment is usually calculated based on the difference between the pool price and the strike price.

Under a futures contract the counterparties (buyer and seller) are not known to each other as the arrangement is facilitated through an exchange.

Futures contracts are subject to a margining process. When a futures price increases relative to the previous price, then the SFE Clearing Participant would make a margin payment to the party who has bought and held the contract. When the market price falls relative to its previous price, the SFE Clearing Participant would make a margin call on the party. Likewise, the reverse payments apply to the party who has sold the futures contract. These margin payments are reconciled on a daily basis.

The futures contracts are understood to be an important and commonly used instrument by NEM participants to hedge their exposures to the NEM pool price. This is evidenced by the increased volume of trade in futures contracts as outlined in section 2.2.2 of this Framework and Issues Paper.

Futures contracts therefore may represent significant portion of some NEM participants' contract portfolios. There may therefore value in integrating futures contracts into the NEM prudential framework for the purpose of reducing costs to market participants and avoiding risk from circular cash flows. Proponents of futures offset arrangements contend that such arrangements will help alleviate credit issues and reduce barriers to competition.

4.3 Reallocation Procedure for futures contract

Futures contracts are not being currently utilised as a reallocation or prudential offset mechanism in the NEM.

The reallocation Rule change in 2007 provided scope for non-market participants to register as reallocating agents. It was envisaged that the SFE Clearing Participants would register as reallocating agents, as a counter party to a NEM participant, thereby enabling the benefits of futures hedge contracts to be realised in the NEM reallocation Procedures. The Commission notes that procedures for reallocation using futures contracts were being considered by a joint NEMMCO/ASX initiative but were discontinued in January 2008.

As part of consultations on the FOA Rule change the Proponents also outlined a number of issues associated with the reallocation mechanism and existing NEM prudential framework. The Commission seek comments from interested parties on:

- the impediments to third parties, such as SFE Clearing Participants to becoming reallocating agents; and
- any options for varying the current reallocation arrangements to address these issues eg. only Market Participants can be parties to a futures offset arrangement (for example, the Direct Retailer FOA model).

4.4 Integrating futures contracts into the NEM prudential framework using future offset arrangements

This section considers the development of alternative arrangements to integrate futures contracts into the NEM prudential framework such as futures offset arrangements. Development of these arrangements is premised on the assumption that the current reallocation arrangements are not workable for futures contracts.

Where an alternative arrangement for futures contracts is developed, it is intended that it works in conjunction with and complements the existing reallocation arrangements, instead of replacing them.

The Commission has had the opportunity to consider three approaches to integrating the futures contracts into the NEM prudential framework. These include:

- the FOA Rule change proposal (see Appendix D for further discussion) submitted by the Proponents (FOA Rule change proposal),[14]
- the work-in-progress of the FOA procedure jointly developed by NEMMCO and ASX (see Appendix E for further discussion) (FOA Procedure),[15] and
- the Direct Retailer FOA proposed by d-cyphaTrade as a submission to the FOA Rule change proposal (see Appendix F) (Direct Retailer FOA).[16]

[14] AEMC, 2008, *NEM Rule Change Proposal – Futures Offset Arrangements for Retailers*, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 18 March 2009

[15] NEMMCO, 2008, *Futures Offset Arrangement Rule Change Proposal 2008 – Submission to first round consultation*, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 18 March 2009

Essentially, a FOA is the process where a retailer would benefit from a reduction in its MCL in consideration of a promise to pay to NEMMCO the futures margin collected through the margining process, when the futures price increases. The result is that an unconditional guarantee from an approved financial institution to pay NEMMCO is replaced by the obligation to pay the margin to NEMMCO.

A key consideration in relation to a FOA model, as proposed under the FOA Rule change proposals, is whether the legal basis for FOA parties is sufficiently robust to ensure that the surety of payments under this model can be guaranteed.

The Commission seeks comments from interested parties as to whether the risks associated with surety of payment are material.

If so, the Commission seeks comments on how this risk may be eliminated or mitigated.

The major differences between the three approaches, referred to as FOA, are:

- the FOA Rule change proposal does not treat the SFE Clearing Participant as a reallocator under the Rules, and the FOA process is defined within the Rule;
- the FOA procedure treats the SFE Clearing Participant as a reallocator of the Rules, and the FOA process is defined within the FOA procedure; and
- under the Direct Retailer FOA proposal, the SFE Clearing participant is not a party to a FOA.

Based on the three options considered so far, key features for a workable arrangement have been identified with a range of options within those features. These are discussed below.

4.4.1 Key features of a FOA model

The Commission considers that the following key features are important considerations when designing an arrangement for incorporating futures contracts into the NEM prudential framework:

- Instrument - the instrument to specify the rights and obligations of parties to the FOA;
- Parties - the parties to the FOA;
- Termination - the circumstances under which the FOA can be terminated;
- MCL reduction - the amount by which the MCL is to be reduced in consideration of parties entering a FOA;

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16 d-cyphaTrade, 2009, *Futures Offset Arrangement Rule Change Proposal 2008 - Submission to Draft Rule Determination (22nd January 2009)*, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 19 March 2009

- Payment to NEMMCO - the form of offset, that is whether it is as a security deposit or a payment;
- Dispute resolution - dispute resolution mechanisms; and
- Licensing requirements.

The Commission invites comments from interested parties on whether there are other features it would need to consider in developing a FOA model.

4.4.1.1 The instrument

The Commission considers that the legal rights and obligations of the parties to the arrangements need to be clear, enforceable and should be actioned in the timely manner.

The options by which the rights and obligations of the parties may be defined are:

- contractual arrangements between parties and NEMMCO (contract-based model);
- rights and obligations are defined in the Rules and NEMMCO Procedures which are given effect under the Rules (Rules-based model); or
- combination of the above (hybrid model).

Under the Rules-based model, the rights and obligations of reallocation parties are defined in the Rules and Procedures that are given effect under the Rules. This ensures clear, transparent and enforceable reallocation arrangements. The Rules and Procedures define the entry, participation and exit from reallocation arrangements to ensure that NEMMCO can effectively manage credit risk posed by NEM participants. The Commission considers the current balance of rights and obligations between Rules and Procedures for reallocation arrangements to be good regulatory practice where it allows NEMMCO the flexibility to create new reallocation Procedures to accommodate the changing needs of the NEM without a need for a Rule change.

A contractual arrangement is likely to be between the parties and may not be as transparent. The enforcement mechanisms would be outside the NEM Rules and may result in different risks for NEMMCO and NEM participants. The contractual arrangement could however, be designed to achieve the same outcomes as under the Rules/Procedures. This could be through developing and publishing a standard contract for the parties to use that defines the critical elements the FOA arrangement.

The Commission considers that a key consideration in deciding on the instrument to define the rights and obligations of FOA parties, is whether it would be legally and operationally effective.

The Commission seeks comments from interested parties on the following questions:

- what are the risks/opportunities of a contract-based, Rule/Procedure-based or hybrid models, compared to the current arrangements?
- for a hybrid model, what elements of a FOA should be defined in the contract and the Rules/Procedures, and why?

4.4.1.2 Parties

The Commission considers that parties to a FOA may comprise of the following:

- NEMMCO and Market Participants; or
- NEMMCO, Market Participants and third parties such as a clearing participant or a reallocating agent.

The relevant parties to the FOA would be based on transactions that would be required to implement a FOA arrangement and the accompanying information and guarantees.

Under the option proposed by the FOA Rule change Proponents, NEMMCO, Market Participant and the SFE Clearing Participants are parties to the FOA.

Under an arrangement where a retailer were to use its positive futures contract margin payments as an offset against outstandings directly, either as a payment or as a security deposit, then a third party may not be required to be a party. For example, under the a revised proposal by d-cyphaTrade based on the Direct Retailer FOA[17], the SFE Clearing Participant would only provide a confirmation that a futures contract is in place, and may not be required to be a party to the FOA. This may enable the FOA arrangements to be provided for in Rules/Procedure noting the reluctance of the SFE Clearing Participants to be bound by the NEM Rules.

The Commission invites comments from interest parties on the different options for implementing a FOA model, the appropriate parties and implications for the NEM under different arrangements.

4.4.1.3 Termination

This feature of the FOA design deals with the termination of a FOA. A FOA can be designed such that the termination can be effected by any party to the FOA. Alternatively, the termination may be effected by only NEMMCO, as is the case under reallocation arrangements.

[17] AEMC, 2009, *Futures Offset Arrangements*, submission from d-cyphaTrade received on 6 March 2009, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 18 March 2009

Whilst disallowing any termination of a FOA once it is entered may be an effective measure to protect the prudential quality of the NEM, it may not always be feasible. Reasons that termination of a FOA may need to be allowed are, for example:

- SFE Clearing Participants may not be willing to enter into a FOA where they have no right to terminate;
- NEMMCO may wish to terminate a FOA if the FOA party breaches a condition of the arrangement; and
- the underlying futures contract associated with the FOA is disposed of or closed out.

Allowing termination of FOA arrangements may pose increased risk to the NEM prudential quality, unless a replacement credit support is provided in a timely manner. Considerations on termination include the frequency and risk associated with termination, the capacity and timeliness of securing replacement credit support and how these compare in terms of the existing prudential quality of the NEM.

Further, a FOA that can be terminated is likely to deliver less value to a FOA party Market Participant. This is because the ability to terminate a FOA means there are uncertainties associated with the cash flow of the FOA margin payment. The Market Participant may need to arrange a line of credit to manage this uncertainty. The need to arrange the line of credit would increase the Market Participant's prudential costs, and hence diminishes the value of the FOA.

The Commission invites interested parties to comment on the circumstances where a party should be allowed to terminate a FOA, and the reasons for these comments.

The Commission also invites comments on how this termination may impact on the prudential quality of the NEM, and what mitigation measures may minimise or deal with any reduction in prudential quality.

The Commission seeks comments from retailers if the uncertainty resulting from a terminable FOA impacts on their ability to realise the benefits of a FOA. If so, how this may be improved?

4.4.1.4 MCL reduction

The reduction in MCL, when a FOA is registered, may be either with or without discounting.

Under the FOA Rule change proposal the amount of MCL to be reduced was to be on a dollar for dollar basis, without any discount. This would require the retailer to provide credit support to the value equivalent to the dollar per MWh price at which the FOA was lodged, instead of the amount determined by NEMMCO. The positive margins from the margining process would be deposited into a security deposit account (SDA) with NEMMCO.

The NEMMCO/ASX proposal suggested that a discount factor be applied to the reduction to the MCL to mitigate against certain risks inherent in a FOA such as default or clawback risks.

Where a FOA can be terminated, a discount to the MCL reduction would be appropriate to take into account the risks associated with non-payment of a FOA margin, which may compromise the prudential quality of the NEM.

The discount factor applied to the MCL reduction would also take into account other risks associated with the FOA margin payment. An alternative to discounting the MCL reduction may be an increase to the PM so that NEMMCO has sufficient credit support in place taking into account timing issues.

Under a reallocation arrangement, when the MCL is reduced for a retailer, NEMMCO, in accordance with the Method for Determining Maximum Credit Limit & Prudential Margin[18] requires a PM from the generator to safeguard against the event that the generator does not meet its obligations. NEMMCO monitors the revenue position of the generator to ensure that the PM is maintained.

As discussed previously, a consideration on the amount by which the MCL may be reduced needs to take into account the prudential quality of the FOA.

The Commission seeks comments from interested parties on how the quality of a FOA compares with an unconditional bank guarantee or a reallocation arrangement.

The Commission seeks stakeholders' views on whether a reduction in credit support from a retailer may be adequately managed to ensure the NEM prudential quality is maintained.

The Commission seeks comments on the matters that need to be taken into account when calculating the discount factor for MCL Reduction.

The Commission also seeks comments from interest parties, if relevant, on the possible methodology to compute, and revise, this discount factor.

There would be potential risks associated with the SFE Clearing Participant not paying the futures margin as required under a FOA. A SFE Clearing Participant may not pay the FOA margin payment for the following reasons:

- the SFE Clearing Participant holds a portfolio of contracts with the NEM participant who is a party to a FOA. The Clearing Participant may net off a positive margin against other negative margins for this portfolio (for example, it may net off a positive margin against a negative margin in another region.) This may mean that that margin payments into the SDA held with NEMMCO is not sufficient; and

[18] NEMMCO, 2008, *Method for Determining Maximum Credit Limit and Prudential Margin*, http://www.nemmco.com.au/met_sett_sra/prudentials.html#MethodofDeterminingMaximumCreditLimits

- the SFE Clearing Participant may default.

The Commission seeks comments from interested parties as to the necessary measures that will ensure that the relevant party makes the payments to NEMMCO consistent with the reduction to the MCL.

The Commission also seeks comments from interested parties on how the FOA product may be designed to ensure that the amount that becomes due to NEMMCO is consistent with the reduction to the MCL. The Commission also seek comments on which party should determine the MCL reduction.

Should the determination of margin payment be linked to the SFE Rules or be independent of it, and how could the differences between the futures market and the NEM be managed?

Should the FOA be used for offset MCL in the same region or should interregional offset be permitted?

4.4.1.5 Payment to NEMMCO

Under the FOA Rule change proposal, the FOA margin payment would be applied to NEMMCO's SDA.

The Commission understands that a FOA would generally result in NEMMCO holding less bank guarantees and more security deposits than what currently applies. To the extent this does occur, this would create an incremental risk for the NEM in that security deposits may be more susceptible to clawback risks under the Corporations Act to than a payment made under a bank guarantee. Even if the risk were low, the consequences of any such occurrence are high.[19]

A potential alternative, if the risk is considered material, would be to apply the FOA margin payment against the Market Participant's outstandings. That is, paying the margin payment directly to the settlement account of the Market Participant who is a party to the prudential offset arrangement, instead of depositing the payment into the SDA.

The Commission seeks comments from interested parties on the materiality of clawback risk and how the clawback risks may be mitigated.

The Commission seek comments on the implications of paying the FOA margin payments directly into the settlement account of the FOA party NEM participant.

[19] AEMC, 2009, *Draft Rule determination – National Electricity Amendment (Futures Offset Arrangements (FOAs)) Rule 2009*, http://www.aemc.gov.au/electricity.php?r=20080204.095152, viewed 12 March 2009

4.4.1.6 Dispute resolution

The Commission considers the dispute resolution process that applies to FOA payments should be a clear and supported by arrangements to allow NEMMCO to take timely and appropriate measures to mitigate risks to the NEM while the dispute is resolved .

Lack of an appropriate arrangement could result in a further increase in risk to NEM participants while the dispute is being resolved.

The Rules currently provide a dispute resolution process under clause 8.2 of the Rules.

The Commission invites comments from interested parties on the essential elements that should be included in the dispute resolution mechanism for a FOA.

4.4.1.7 Licensing requirements

The design of a FOA may require NEMMCO and/or Market Participants to be licensed by financial market regulators.

The Commission invites comments from NEM participants as to the impact a requirement to hold an ASIC or other licence (if this were to be the case) will have on their businesses.

How could the FOA be designed so that it does not require NEMMCO or the Market Participants to be licensed by the ASIC?

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5 MCL Methodology

5.1 Objective

The terms of reference of the Review require investigations into the methodology for the determination of the MCL. In particular, the terms of reference require the Commission to investigate the feasibility of using futures prices in the MCL methodology.

For reasons discussed below, the Commission proposes to widen the scope of the review into the MCL methodology to include investigations into and clarification of the "reasonable worst case" used as the basis for determining the MCL and to investigate the merits of an alternative approach for establishing MCL.

The Commission seeks the views of stakeholders as to whether the extension of the investigations in relation to the MCL methodology as proposed is appropriate.

5.2 Background

The Proponents of the FOA Rule change proposed to modify the MCL calculation methodology in the Rules. Rather than the MCL methodology using a backward looking price observation as a basis for future pool prices, it would utilise Sydney Futures Exchange (SFE) electricity futures prices as the key inputs of the model, representing a forward looking view of future risk-adjusted pool price outcomes.

5.2.1 Definition of "reasonable worst case"

In its submission to the FOA Rule change request and the draft Rule determination, NEMMCO raised the issue that the definition of the performance target ("reasonable worst case") in the Rules is imprecise and requested the Commission to clarify this. The Commission's view in the draft determination was that it considered that clarifying the performance target defined in the Rules was outside the scope of the Rule change proposal and should be only considered under a separate Rule change request.

The Commission also stated that it would consider the merits of clarifying this target, as part of its review process, if it forms a relevant part of the scope of the review. The Commission considers that since the interpretation of the "reasonable worst case" is fundamental to the determination of the MCL, that this Review should consider clarifying the performance target.

5.2.2 "Stress test" approach

The Working Group (established to provide advice in relation to this Review) discussed the option of applying a "stress test" approach for the determination of the MCL. This approach involves estimating the "reasonable worst case" on the basis of the Cumulative Price Threshold (CPT) being triggered. This means the MCL for a 42

day credit period would be calculated based on the scenario where the pool prices over a period are sufficiently high to trigger the CPT. In addition, the price for the remainder of the credit period may be capped at the Administered Price Cap (APC) (currently set at $300/MWh).

A key consideration of this approach would be to determine where the MCL calculated using this approach lies relative to the "reasonable worst case" defined in the Rules.

5.3 Other ways to enhance the operation of the NEM prudential framework

The Rules and Procedures provide for mechanisms that can help lower the MCL and hence reduce the level of credit support and the associated costs. An example of this is the Reduced MCL (RMCL) provision under clause S3.3.1(b)(6)(iii) of the Rules. This provision, however, may require a NEM participant to manage its settlement process on a more active basis.

Another arrangement that may be worthy of consideration in reducing the prudential burden of NEM participant is to shorten the settlement cycle in the NEM.

The Commission seek views from stakeholders on these and other options that may be integrated into the NEM prudential framework to enhance the operation and efficiency of that regime.

The Commission seeks comments from interested parties on whether there are any impediments in practice in requesting a NEM participant's MCL level to be reduced under clause S3.3.1(b)(6)(iii) of the Rules. If so, what are the impediments?

The Commission seeks comments from interested parties on whether there is any opportunity to reduce the MCL level of a NEM participant by shortening the settlement cycle in the NEM.

5.4 Assessment approach

The assessment criteria for this part of the Review is discussed in section 2.3.2 of this Framework and Issues Paper. Sections 5.4.1 and 5.4.2 discuss the approach proposed to be undertaken by the Commission base on the assessment criteria.

5.4.1 Assessment approach for "reasonable worst case"

The Commission considers that a review into the current probabilistic basis for the determination of the MCL as defined in the Rules is outside the scope of this Review.

This review would seek to clarify the performance target with respect to the meaning of "a position that, while not being impossible, is to a probability level that the estimate would not be exceeded more than once in 48 months". That is, clarify

whether the estimate is not to be exceeded in one billing period, collection period or other.

The assessment of a "reasonable case" is proposed to be based on assessing the rationale for the MCL and then establishing the interpretation that would meet that rationale.

5.4.2 Assessment approach for an appropriate MCL

Once the performance target is clarified, the Commission proposes to examine the following approaches for the determination of the MCL:

- current approach of using 12 months of historical prices, in conjunction with the current and alternative approaches for the determination of the volatility factor;
- the use of futures prices at different levels of futures market liquidity, with and without a volatility factor; and
- a "stress test approach" as described in section 5.2.2.

The assessment would be performed by:

- comparing the calculations under the different approaches outlined above, under a range of credible scenarios;
- identifying and examining factors that may affect the results under each approach, such as seasonality and futures market liquidity etc; and
- establishing the preconditions that would determine the most appropriate approach for the calculation of the MCL.

The Commission seeks the views of stakeholders as to whether the proposed approach for the assessment of the MCL methodology is appropriate, and if not, are there any other tests that may be more appropriate?

The Commission seeks the stakeholders views on the range of the credible scenarios that should be used to test the adequacy of the MCL.

5.5 Considerations and issues

5.5.1 Reasonable worst case

As discussed in section **Error! Reference source not found.**, there is some uncertainty associated with the definition of "reasonable worst case" in the Rules of a "position that, while not being impossible, is to a probability level that the estimate would not be exceeded more than once in 48 months."

It would appear that the intent of the MCL provision is to ensure that NEMMCO has adequate security in place for it to have access to sufficient funds to meet all

settlement liabilities, each time it requires a payment, except once in a 48 month period in the event that a participant not be able to meet its obligations. This would include the billing period, the time it takes to collect the payment due, and Reaction Period in the event of default.

On this basis it would appear that the MCL should be calculated based on the liabilities likely to be accrued by a Market Participant in any 42 day interval. If this is not the case, then NEMMCO is not likely to have access to sufficient funds to meet the outstanding liabilities of a Market Participant in the event of default.

NEMMCO issues bills to Market Participants for a 7 day period, which when considered with the payment period and the Reaction Time means a security for 42 days. Hence every trading week has a corresponding 42 day billing/collection/PM period associated with it. There are 52 trading weeks in a year, and 52 corresponding 42-day-periods each year, or 208 42-day-periods in 48 months.

If the "reasonable worst case" were to be interpreted as the MCL being exceeded only once in 208 periods then the probability that the MCL would be sufficient to meet the liabilities in all except 1 period in 48 months would be 99.5%.

The Commission seeks stakeholders' views on whether the above interpretation of the "reasonable worst case" is consistent with the intent of the Rule?

Are there any alternative interpretations of "reasonable worst case" and how would that impact on NEMMCO's ability to meet any outstanding liabilities in the event of default by a Market Participant?

What test should the Commission apply in assessing the adequacy of the "reasonable worst case"?

5.5.2 MCL methodology

The current MCL methodology is discussed in section 2.2.1 of this Framework and Issues Paper.

Under the current MCL methodology, the volatility factor is an input for estimating the MCL for a future period. For a region where sufficient historical data is available, the volatility factor is calculated as a ratio of the highest value to the mean of the distribution of a rolling 42 -day average daily purchase (price x volume) for the previous 12 months. Section 16 of NEMMCO Procedure: The Method for Determining Maximum Credit Limit & Prudential Margin[20] provides further details on the determination of volatility factor. There may be concerns that the current MCL methodology does not take adequate account of load volatility.

The options for consideration with respect to the estimation of the MCL include:

[20] NEMMCO, 2008, *Method for Determining Maximum Credit Limit and Prudential Margin*, http://www.nemmco.com.au/met_sett_sra/prudentials.html#MethodofDeterminingMaximumCreditLimits, viewed 18 March 2009

- using historical price as the basis for a MCL calculation, as per the current methodology;
- using futures prices in the calculations with or without a volatility factor;
- A "stress test" approach based of using the CPT and APC; or
- A hybrid approach using aspects of the different approaches.

The Commission seeks the views of stakeholders on any other options or approaches that should be investigated.

5.5.2.1 Historical prices

The current approach is well understood by the Market Participants and has performed reasonably well, except for some isolated instances where sustained periods of high pool prices have meant that the MCL was not sufficient. Further, such events have impacted on the future estimates of MCL, which may have been higher than necessary.

The use of a historical basis for the estimate of the MCL has it limitations because it does not represent a forward looking view of the market outcomes.

There may be scope to refine the current approach, especially the method by which the volatility factor is calculated, to provide better estimates of the MCL.

The Commission seeks the views of stakeholders on their assessment of how the current methodology has performed.

How can the existing methodology be improved, particularly with respect to the calculation of the volatility factor to achieve a better estimate of the MCL?

5.5.2.2 Futures prices

Proponents for the use of futures prices in the MCL methodology argue that the futures prices are a more accurate reflection of the market's expectation of prices for the relevant period for which the MCL is calculated. As a result, the use of futures prices would result in a MCL that is more appropriate.

The Commission, under the assessment framework outlined in section 2.3, proposes to test the use of futures prices against alternative approaches.

The issue that may arise is whether the futures prices are affected by the depth of the futures market (or liquidity) and if so, how this may be accommodated in an approach that uses futures prices.

Some regions, for example Tasmania, do not have futures prices. Consideration will need to be given to the calculation of the MCL for Tasmanian Market Participants.

The Commission seeks stakeholders' views on factors that need to be taken into account when assessing the use of futures prices for MCL calculations.

Is there any evidence, from Australia or overseas, where futures prices have been used, its comparative performance and the considerations in its application?

Would the use of the futures prices in the methodology make the use of the volatility factor redundant, and why?

5.5.2.3 "Stress Test"

Some stakeholders have proposed a "stress test" approach to approximating a MCL for a NEM participant, instead of the current methodology. This approach involves estimating the "reasonable worst case" on the basis of the CPT being triggered. This means the MCL for a 42 day credit period would be calculated based on the scenario where the pool prices over a period is sufficiently high to trigger the CPT. In addition, the price for remaining of the credit period would be capped at the APC.

An important consideration, if this approach were adopted, is to assess how the resulting MCL would compare to the "reasonable worst case" criteria.

If this approach is adopted, the resulting MCL could be higher than that calculated using the current methodology. Some stakeholders suggested that, despite the higher MCL level, if this approach is adopted in conjunction with a more effective reallocation or futures based offset arrangement, it may result in a better outcome in terms of risk and cost for NEM participants, compared to the current arrangement.

The Commission seeks the views of stakeholders on whether this approach to determination of MCL has merit and the considerations for adopting this approach ?

5.5.2.4 Hybrid

It may be possible that the current MCL methodology may be further improved by using a combination of the above approaches.

The Commission seeks stakeholders views on how such a hybrid approach may be implemented and how it will improve the estimate of the MCL.

5.6 Rules or Procedures

The Rules are generally more appropriate for substantive rights and obligations that have material impact on the NEM and NEM Participants, whereas Procedures are more appropriate for technical and operational matters.

The Rules should address matters that have industry wide application or effects that are likely to change relatively infrequently over time. Matters that rely on an assessment of individual market participant conditions or circumstances or involve

more technical or operational considerations are more appropriately dealt with by regulatory discretion through guidelines or Procedures.

The Commission seeks views from stakeholders on the balance between Rules and Procedures for the elements of any proposed arrangements.

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6 List of issues for comment

Chapter	For comment
2 **The existing NEM prudential framework**	**2.3.1 Assessment framework for integrating hedging contracts into the existing NEM prudential framework** The Commission invites comments from interested parties on whether this approach is appropriate and if any other assessment should be undertaken. **2.3.1.1 Improve, or at least maintain, the prudential quality of the NEM** The Commission invites comments from interested parties on the appropriateness of the assessment criteria outlined above and whether any other criteria should also be taken into account. **2.3.1.2 Reduce (or at least maintain) the cost of capital to trade in the NEM wholesale market** The Commission invites comments from interested parties on the appropriateness of the assessment criteria outlined above and whether any other criteria should also be taken into account. **2.3.1.3 Operational effectiveness** The Commission invites comments from interested parties on the appropriateness of the assessment criteria outlined above and whether any other criteria should also be taken into account. **2.3.2.2 Operational effectiveness - MCL calculation is predictable** The Commission seeks the views of stakeholders as to whether the proposed assessment criteria is appropriate, and if not are there any other factors that should be taken into account?

Chapter	For comment
3 **The reallocation arrangements**	**3.2.1 Energy reallocation** The Commission invites comments from interested parties as to how an energy reallocation would alter the credit risks in the NEM, compared to the scenario where there is no reallocation arrangement in the NEM. Is there an increase in the risk to the NEM under reallocation? If so, is it material and what arrangements can be put in place to manage it? The Commission seeks stakeholders views as to how widely this reallocation arrangement is used and on the improvements that can be made to the arrangements to increase the utilisation of energy reallocation. **3.2.2 Dollar reallocation** The Commission invites comments from interested parties as to how a dollar reallocation would alter the credit risks in the NEM, compared to the scenario where there is no reallocation arrangement in the NEM. The Commission seeks stakeholders views as to how widely this reallocation arrangement is used and on the improvements that can be made to the arrangements to increase the utilisation of dollar reallocation. **3.2.3 Swap & Option Offset Reallocations** The Commission requests comments from interested parties as to how a Swaps & Options Offset Reallocation would alter the credit risks in the NEM, compared to the scenario where there is no reallocation arrangement in the NEM. The Commission seeks stakeholders views, noting that this arrangement is currently not operational, on any potential improvements that can be made to the arrangements to improve the utilisation of Swap & Option Offset Reallocation. The Commission seeks comments from NEM participants as to the impact a requirement to hold an ASIC licence (if this were to be the case) will have on their business.

Chapter	For comment
	3.2.4 Risk of deregistration of a reallocation arrangement The Commission seeks comments from interested parties on the risks associated with the deregistration of a reallocation arrangement. The Commission also seeks comments on other risks associated with a reallocation arrangement.
4 Integrating futures contracts into the NEM prudential framework	**4.3 Reallocation Procedure for futures contract** As part of consultations on the FOA Rule change the Proponents also outlined a number of issues associated with the reallocation mechanism and existing NEM prudential framework. The Commission seek comments from interested parties on: • the impediments to third parties, such as SFE Clearing Participants to becoming reallocating agents; and • any options for varying the current reallocation arrangements to address these issues eg. only Market Participants can be parties to a futures offset arrangement (for example, the Direct Retailer FOA model). **4.4 Integrating futures contracts into the NEM prudential framework using future offset arrangements** The Commission seeks comments from interested parties as to whether the risks associated with the surety of payment are material. If so, the Commission seeks comments on how this risk may be eliminated or mitigated. **4.4.1 Key features of an FOA model** The Commission invites comments from interested parties on whether there are other features it would need to consider in developing a FOA model.

Chapter	For comment
	4.4.1.1 The instrument The Commission seeks comments from interested parties on the following questions: • what are the risks/opportunities of a contract-based, Rule/Procedure-based or hybrid model, compared to the current arrangements? • for a hybrid model, what elements of a FOA should be defined in the contract and the Rules/Procedures, and why? **4.4.1.2 Parties** The Commission invites comments from interest parties on the different options for implementing a FOA model, the appropriate parties and implications for the NEM under different arrangements. **4.4.1.3 Termination** The Commission invites interested parties to comment on the circumstances where a party should be allowed to terminate a FOA, and the reasons for these comments. The Commission also invites comments on how this termination may impact on the prudential quality of the NEM, and what mitigation measures may minimise or deal with any reduction in prudential quality. The Commission seeks comments from retailers if the uncertainty resulting from a terminable FOA impacts on their ability to realise the benefits of a FOA. If so, how this may be improved? **4.4.1.4 MCL reduction** The Commission seeks comments from interested parties on how the quality of a FOA compares with an unconditional bank guarantee or a reallocation arrangement. The Commission seeks stakeholders' views on whether a reduction in credit support from a retailer may be adequately managed to ensure the NEM prudential quality is maintained.

Chapter	For comment
	The Commission seeks comments on the matters that need to be taken into account when calculating the discount factor for MCL Reduction. The Commission also seeks comments from interest parties, if relevant, on the possible methodology to compute, and revise, this discount factor. The Commission seeks comments from interested parties as to the necessary measures that will ensure that the relevant party makes the payments to NEMMCO consistent with the reduction to the MCL. The Commission also seeks comments from interested parties on how the FOA product may be designed to ensure that the amount that becomes due to NEMMCO is consistent with the reduction to the MCL. The Commission also seek comments on which party should determine the MCL reduction. Should the determination of margin payment be linked to the SFE Rules or be independent of it, and how could the differences between the futures market and the NEM be managed? Should the FOA be used for offset MCL in the same region or should interregional offset be permitted? **4.4.1.5 Payment to NEMMCO** The Commission seeks comments from interested parties on the materiality of clawback risk and how the clawback risks may be mitigated. The Commission seek comments on the implications of paying the FOA margin payments directly into the settlement account of the FOA party NEM participant. **4.4.1.6 Dispute resolution** The Commission invites comments from interested parties on the essential elements that should be included in the dispute resolution mechanism for a FOA. **4.4.1.7 Licensing requirements** The Commission invites comments from interested parties as to the impact the requirement to hold a ASIC or other licence (if this were to be the case) will have on

Chapter	For comment
	their businesses. How could the FOA be designed so that it does not require NEMMCO or the Market Participants to be licensed by the ASIC?
5 **MCL Methodology**	**5.1 Objective** The Commission seeks the views of stakeholders as to whether the extension of the investigations in relation to the MCL methodology as proposed is appropriate. **5.3 Other ways to enhance the operation of the NEM prudential framework** The Commission seek views from stakeholders on these and other options that may be integrated into the NEM prudential framework to enhance the operation and efficiency of that regime. The Commission seeks comments from interested parties on whether there are any impediments in practice in requesting a NEM participant's MCL level to be reduced under clause S3.3.1(b)(iii) of the Rules. If so, what are the impediments? The Commission seeks comments from interested parties on whether there is any opportunity to reduce the MCL level of a NEM participant by shortening the settlement cycle in the NEM. **5.4.2 Assessment approach for an appropriate MCL** The Commission seeks the views of stakeholders as to whether the proposed approach for the assessment of the MCL methodology is appropriate, and if not, are there any other tests that may be more appropriate? The Commission seeks the stakeholders' views on the range of the credible scenarios that should be used to test the adequacy of the MCL.

Chapter	For comment
	5.5.1 Reasonable worst case The Commission seeks stakeholders' views on whether the above interpretation of the "reasonable worst case" is consistent with the intent of the Rule? Are there any alternative interpretations of "reasonable worst case" and how would that impact on NEMMCO's ability to meet any outstanding liabilities in the event of default by a Market Participant? What test should the Commission apply in assessing the adequacy of the "reasonable worst case"? **5.5.2 MCL methodology** The Commission seeks the views of stakeholders on any other options or approaches that should be investigated. **5.5.2.1 Historical prices** The Commission seeks the views of stakeholders on their assessment of how the current methodology has performed. How can the existing methodology be improved, particularly with respect to the calculation of the volatility factor to achieve a better estimate of the MCL? **5.5.2.2 Futures prices** The Commission seeks stakeholders' views on factors that need to be taken into account when assessing the use of futures prices for MCL calculations. Is there any evidence, from Australia or overseas, where futures prices have been used, its comparative performance and the considerations in its application? Would the use of the futures prices in the methodology make the use of the volatility factor redundant, and why? **5.5.2.3 "Stress Test"** The Commission seeks the views of stakeholders on whether this approach to determination of MCL has merit and the considerations for adopting this approach.

Chapter	For comment
	5.5.2.4 Hybrid The Commission seeks stakeholders views on how such a hybrid approach may be implemented and how it will improve the estimate of the MCL. **5.6 Rules or Procedures** The Commission seeks views from stakeholders on the balance between Rules and Procedures for the elements of any proposed arrangements.

A Terms of reference for the Review

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Review into the role of hedging contracts in the existing NEM prudential framework – Terms of Reference

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Under section 45 of the National Electricity Law (NEL), the Australian Energy Market Commission (Commission) has initiated a review into the potential use of futures and other types of contracts in the National Electricity Market (NEM) prudential framework.

Objective of the review
In this review, the Commission is seeking to provide advice to the Ministerial Council of Energy (MCE) on ways in which NEM participants' futures and other types of contracts can be integrated into the NEM prudential framework with the objective of enhancing the operation and efficiency of that regime.

Scope of the review
The scope for this review includes:

- investigating the feasibility of developing a mechanism to offset the prudential requirement of a NEM market participant using its contract position;
- investigating the feasibility of incorporating futures prices in the MCL methodology;
- investigating and developing any other appropriate proposals that may enable NEM participants' contract positions to be taken into account so as to enhance the NEM prudential framework;
- as appropriate, legal analysis of the potential design, and statistical or other suitable analysis to confirm the costs and benefits, of any such proposals; and
- as appropriate, determining the final design of any such proposals (this includes, but is not limited to, appropriate information, reporting and data requirements);
- as appropriate, development of proposed National Electricity Rules to implement these arrangements.

The scope of the review will seek to identify solutions within the context of the Rules framework.

Working Group
The Commission will establish a working group to provide expert advice relating to the review.

This working group may consist of members with the following areas of expertise:

- Rule change process;
- NEM prudential framework;
- relevant financial market knowledge;
- legal knowledge;
- knowledge of the issues from a NEM generator's perspective;
- knowledge of the issues from a NEM retailer's perspective; and
- any other areas of expertise deemed suitable by the Commission to assist in the review process.

Approach to the review
In seeking to address the above objectives, the Commission will undertake a staged approach.
The two stages are as follows:

- **Stage 1**:
  a) will identify mechanisms to integrate futures and other types of contracts into the NEM prudential regime, including:
    - the issues associated with a mechanism which offsets the prudential requirement of a NEM market participant using its contract position;
    - the issues associated with applying futures price information to determine the MCL for a NEM market participant;
    - where possible, identify solutions for the issues, and recommend an arrangement for offsetting the prudential requirement of a NEM market participant and/or a revised MCL methodology;

b) where there is no feasible solution for the issues, conclude the review process without making a recommendation.

- **Stage 2**: as appropriate, will develop draft Rules to support the recommendations made in Stage 1.

Considerations
In conducting this review, the Commission will have regard to:

- the national electricity objective;
- MCE statement of policy principles;
- previous reviews and Rule determinations relating to reallocations or Futures Offset Arrangements;
- other relevant previous reviews and Rule change determinations;
- expert advice from the working group; and
- any other relevant information.

This review will be conducted in an open and transparent manner to provide all interested stakeholders with the opportunity to contribute at each stage of the review process. The Commission will have regard to stakeholders' opinions raised during the course of the review.

Timing and outputs
The Commission will deliver the following outputs for this review:

- A **Framework and Issues Paper**, which will identify and consult on the range of issues requiring consideration and inform interested parties on the Commission's proposed assessment criteria;
- A **Stage 1 Draft Report**, which will set out the Commission's proposed recommendations on the appropriate mechanisms in which to integrate NEM market participants' contract positions into the NEM prudential regime. This report will be published to invite submissions from stakeholders; and
- A **Stage 1 Final Report**, which will set out the Commission's final recommendations. The Commission will provide this report to the MCE for its consideration. The Commission will also brief the MCE on its findings.

This process for Stage 1 can be summarised as follows:

Milestone	Timing
Framework and Issues Paper	March 2009
Framework and Issues Public Forum	April 2009
Stage 1 Draft Report	June 2009
Public Forum	July 2009
Stage 1 Final Report to MCE	September 2009

In Stage 2, where appropriate, the Commission would draft recommended Rules to support its recommendations in Stage 1. The Commission intends to submit any such proposed Rules to the MCE by December 2009. Stakeholders will be given an opportunity to comment on any draft proposed Rules before the Commission provides them to the MCE for consideration.

B NEM prudential framework

This section provides an overview of the NEM prudential framework in the Rules. The NEM's prudential requirements are described under clause 3.3 of the Rules.

Relevant components of the existing NEM prudential framework are:

- the Maximum Credit Limit (MCL);
- daily prudential monitoring;
- default and suspension; and
- settlement default.

The NEM prudential framework is also published on NEMMCO's website.[21]

Figure 1 illustrates the elements of the existing NEM prudential framework.[22]

Sections B.1 to B.4 explain the above components, the elements illustrated in the figure, and their relationships.

B.1 The Maximum Credit Limit

The MCL is a "reasonable worst-case" estimate of the potential exposure based upon the aggregate payments (after reallocations) to be made by a NEM participant to NEMMCO over their credit period. The MCL is set such that the estimate should not be exceeded more than once in 48 months.

NEM participants are required to lodge credit support (often in the form of a bank guarantee) with NEMMCO not less than their MCLs.

The MCL is reassessed at least quarterly and more often if there are changed circumstances. NEM participants' credit support requirements vary in response to NEMMCO's assessment of the MCL.

Under clause 3.3.6(b) of the Rules, "where a credit support otherwise ceases to be current or valid, whether by reason of the Credit Support Provider ceasing to meet the acceptable credit criteria or any other reason, the Market Participant must procure the replacement of that credit support so as to comply with its obligation to maintain aggregate undrawn current and valid credit support of not less than the current maximum credit limit for that Market Participant. The Market Participant must procure that the replacement credit support is issued to NEMMCO within 24

[21] NEMMCO, 2009, *NEM Settlement Prudential Supervision Process*, http://www.nemmco.com.au/met_sett_sra/intro_sett.html#SettlementProcess

[22] AMEC, 2008, *Rule Determination - National Electricity Amendment (Preservation of Prudential Margin Through Call Notices)*, http://www.aemc.gov.au/electricity.php?r=20080929.170238, viewed 18 March 2009

hours after the Market Participant first becomes aware that the credit support has ceased to be current or valid (whether by reason of the Market Participant's own knowledge or a notification by NEMMCO)."

MCL consists of two parts:

- prudential margin; and
- trading limit.

Under clause 3.3.8 of the Rules, NEMMCO is required to determine a MCL and prudential margin for each Market participant.

The Prudential Margin represents the buffer below the MCL which sets the limit under which a NEM participant is permitted to trade. Its purpose is to ensure that NEMMCO is not exposed to a prudential risk during the period of removing a participant from the NEM (the Reaction Period).

A trading limit is the difference between the MCL and Prudential Margin.

Schedule 3.3 of the Rules sets out the principles to be followed by NEMMCO in determining the MCL and prudential margin for a NEM Participant.

Under clause 3.3.8(d) of the Rules, NEMMCO must publish details of the methodology used in determining MCLs and prudential margins. A copy of this methodology can be found in the "Method of Determining Maximum Credit Limits" paper published on the NEMMCO website (MCL Procedure).[23]

Part 2 of this Review aims to investigate the existing MCL methodology, and this is further discussed in Chapter 3 of this Framework and Issues Paper.

B.2 Daily prudential monitoring

NEMMCO monitors the total outstandings (the electricity consumed but not yet paid for) or financial liability of all NEM participants to NEMMCO on a daily basis. NEM participants can also monitor their own outstandings using the NEMMCO facility called the Prudential Dashboard.

If the outstandings exceed the trading limit, then a call notice may be issued. A call notice will usually be issued before 12 noon (Sydney time) on any business day.

NEMMCO calculates the call amount in accordance with clause 3.3.11(a)(2) of the Rules. The call amount is equal to the difference between a Market Participant's outstandings and its typical accrual.

This clause also provides that a call amount must always be greater than or equal to zero.

[23] NEMMCO, 2008, *Method for Determining Maximum Credit Limit and Prudential Margin*, http://www.nemmco.com.au/met_sett_sra/prudentials.html#MCL

The typical accrual is defined in clause 3.3.12 of the Rules. It is an amount determined by NEMMCO that is broadly equal to the level of outstandings that the NEM Participant would have reached if spot prices and consumption had been at average levels. Details of how a Market Participant's typical accrual is calculated are set out in NEMMCO's MCL Procedure.

When a call notice is issued, the NEM participant is expected by 11am (Sydney time) on the next business day to:

- agree with NEMMCO an increase in the MCL by an amount not less than a call amount specified in the notice, and to provide required additional credit support to NEMMCO;
- where the MCL is not increased, pay NEMMCO a security deposit of the call amount; or
- arrange, together with another NEM participant and in accordance with NEMMCO's procedures, for a credit ex-post reallocation to be submitted and accepted by NEMMCO for an amount of at least the call amount; or
- provide a combination of the above to the value of the call amount.

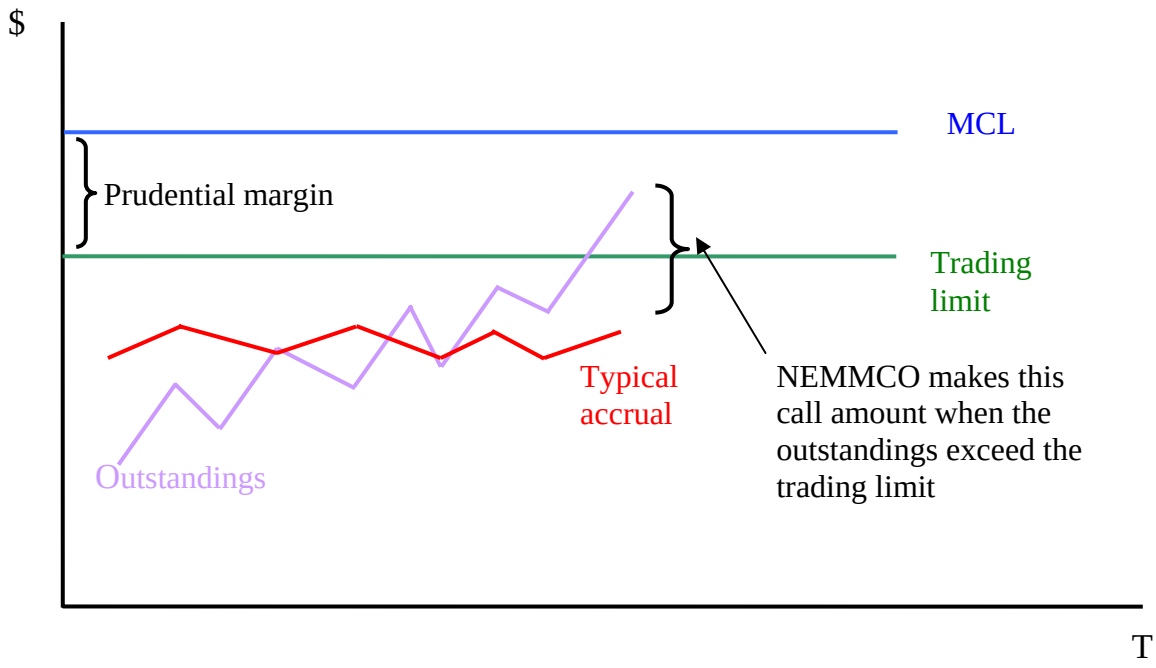
B.3 Default and suspension

If a NEM participant failed to respond as required to a call notice then a default event (as defined by the Rules) would have occurred and NEMMCO may issue a default notice requiring rectification within a set deadline (typically 1 pm Sydney time on the next day).

Some default events can lead to a default notice being served without a call notice being issued. Examples of these events are: failure to settle at the appointed time or the appointment of an administrator; and failure to provide credit support required to be supplied under the Rules by the appointed time on the due date.

If NEMMCO was not satisfied that the default event has been rectified within the prescribed time, NEMMCO may issue a suspension notice under clause 3.15.1(c) of the Rules: "if the default event is not remedied by 1.00 pm (Sydney time) the next day following the date of issue of the default notice or any later deadline agreed to in writing by NEMMCO, or if NEMMCO receives notice from the defaulting Market Participant that it is not likely to remedy the default, then NEMMCO may issue a "suspension notice" under which NEMMCO notifies the defaulting Market Participant of the date and time from which it is suspended from trading, and the extent of that suspension."

Figure 1: Elements of NEM prudential framework



B.4 Settlement default

If a NEM participant has defaulted on a settlement payment then the potential consequences are:

- initially a draw down on the bank guarantee until this is exhausted in order to make good the defaulted settlement payment; and/or
- issue Default Notice to the NEM participant; and/or
- short payment to Generators in proportion to the amounts owed to each for energy and reallocation.

In the event of a default event, clause 3.15.21(b)(2) gives NEMMCO the authority to call upon the credit support provided by a NEM participant. In such an event, NEMMCO would determine a call amount that represents the amount of any money actually or contingently owed by the NEM participant to NEMMCO pursuant to the Rules.

Clause 3.15.22 details the manner in which settlements will be handled for a billing period in which there is a shortage of funds due to a default of a NEM participant where the shortfall cannot be made up through calling upon any remaining credit support. Clause 3.15.22(c) essentially specifies that any such shortfall would be shared out in proportion to the amounts owing to each NEM participant.

C Reallocation mechanism

On 15 February 2007, the Commission determined a Rule amendment in relation to the reallocation arrangements.

Reallocation is a mechanism under the Rules whereby two NEM participants (typically, but not necessarily, a generator and a retailer) can "lodge" a quantity of energy or cash with NEMMCO. Under a reallocation mechanism, NEMMCO recognises that NEM participants enter into over-the-counter (OTC) bilateral contracts, usually Contracts for Differences (CFD), to reduce price risk for specified quantities of energy.

The reallocation mechanism was introduced for two purposes:

- to minimise the settlement risk of circular cash flows; and
- to minimise the prudential support requirements from NEM participants.

C.1 Minimise the settlement risk of circular cash flows

A retailer purchases electricity from the NEM at the prevailing pool price, and typically hedges against the potentially volatile pool price by entering into an OTC bilateral contract with a generator (or entering into a futures contract).

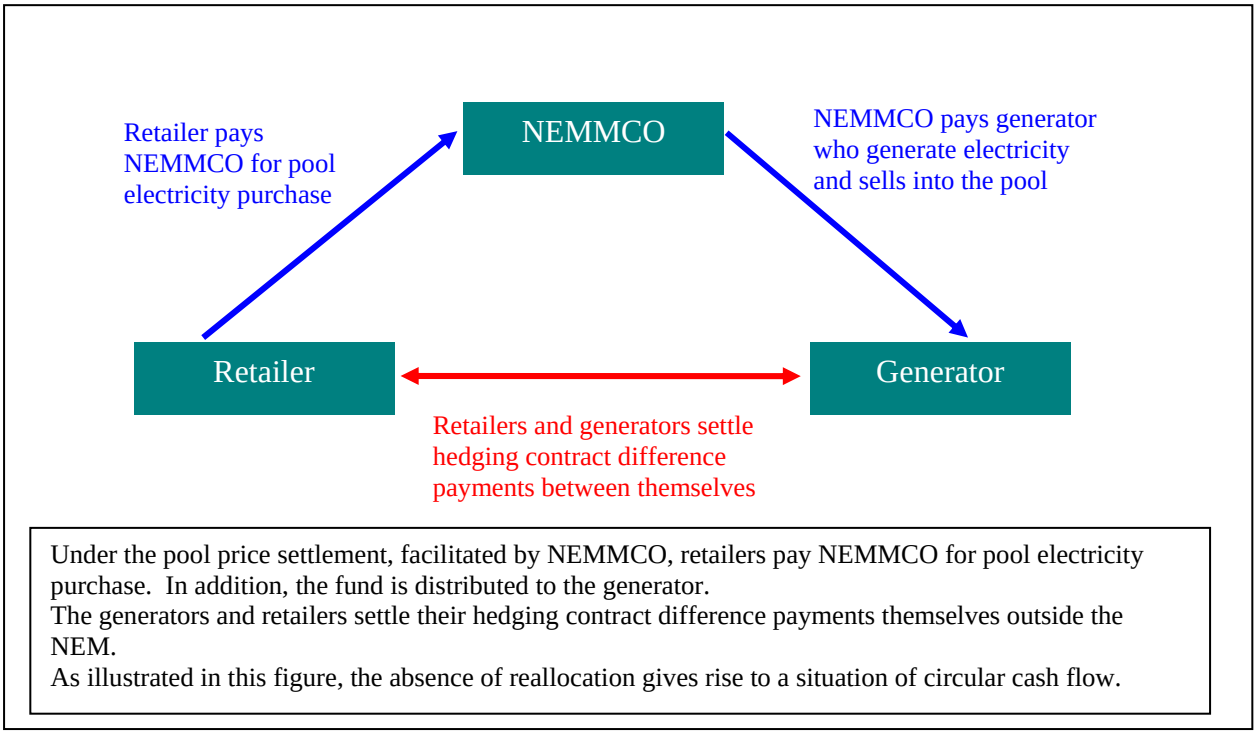
In the absence of a reallocation arrangement, the pool settlements and contract settlements of a NEM participant are carried out under two separate processes: the pool settlements in the NEM are performed by NEMMCO, and counter parties of an OTC bilateral contract usually settle amongst themselves outside of the NEM.

This may give rise to the situation of circular cash flows where, on the same day, the retailer will pay NEMMCO for energy consumed, NEMMCO will pay the generator for energy generated, and the generator and retailer will exchange cash representing the CFD contract payments.

The circular cash flow is illustrated in Figure 2.

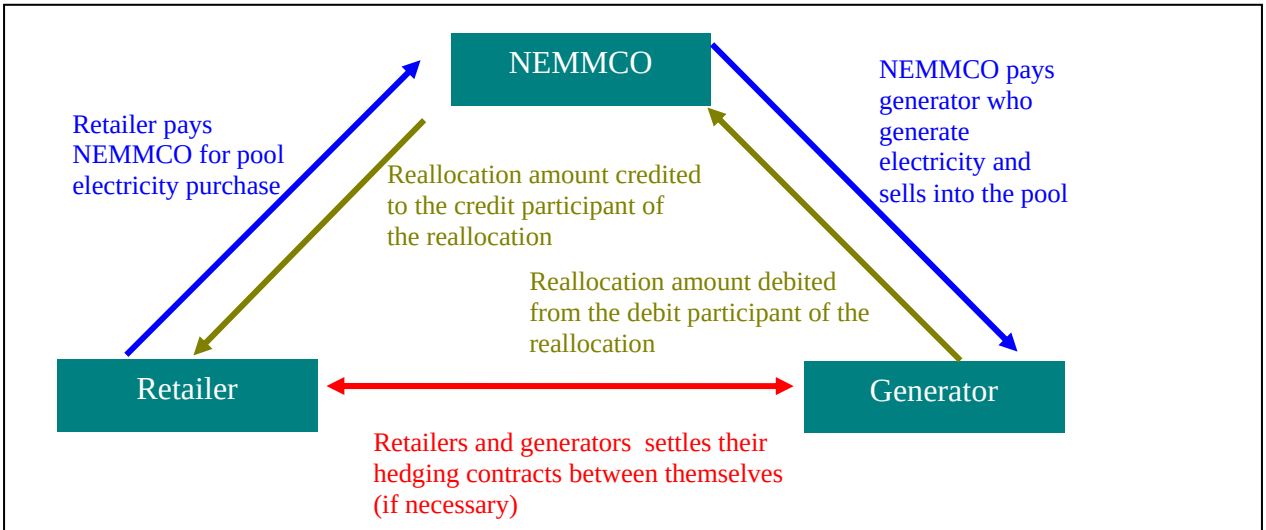
One purpose of reallocation is to minimise the settlement risk of circular cash flows. Reallocation eliminates circular cash flows by netting off the pool settlements against the reallocation transaction. This is illustrated in Figure 3.

Figure 2: Cash flows between a retailer, a generator and NEMMCO (without reallocation).



Under the pool price settlement, facilitated by NEMMCO, retailers pay NEMMCO for pool electricity purchase. In addition, the fund is distributed to the generator.
The generators and retailers settle their hedging contract difference payments themselves outside the NEM.
As illustrated in this figure, the absence of reallocation gives rise to a situation of circular cash flow.

Figure 3: Cash flows between a retailer, a generator and NEMMCO (reallocation).



Under a reallocation arrangement, NEMMCO credits the relocation amount to the credit participant (usually the retailer). In addition, NEMMCO debit the reallocation amount to the debit participant (usually the generator).

NEMMCO settles with NEM participants the net of the pool transactions and reallocation transactions. This represents the net of pool and contract settlement positions for the retailer and generator.

Reallocation eliminates circular cash flows, hence reduce settlement risks and minimise prudential support

C.2 Minimise the prudential support requirements from NEM participants

In the absence of a reallocation arrangement, the amount of prudential support a NEM retailer is required to provide to NEMMCO would be estimated based on its quantity of electricity purchases from the NEM at the prevailing or expected electricity pool price.

In the event of a price spike, a NEM retailer may find itself owing a large amount of money to NEMMCO in order to provide an adequate prudential support from the time of the price spike until settlement occurs (up to 35[24] days).

A purpose of reallocation is to minimise the amount of prudential support requirements from NEM participants. With a reallocation arrangement, the gross pool settlement for a NEM retailer's electricity purchase is netted off against the reallocation transaction. This reduces the amount of money the NEM retailer would owe NEMMCO for prudential support. A reduced prudential support requirement is likely to reduce the retailer's prudential support costs. This is illustrated in Figure 3.

C.3 Key elements of a reallocation arrangement

The key elements of the reallocation Rule determination were:[25]

- providing for a new category of registered participant – a Reallocator: the Rule provides for financial institutions and other entities to become registered participants for the purpose of participating in a reallocations transaction;
- improving flexibility in reallocation procedures: the Rule requires NEMMCO to develop and maintain reallocation procedures, in accordance with the Rules consultation procedures provided in Chapter 8 of the Rules. This will allow reallocation procedures to adapt in response to changing market circumstances; and
- changes to prudential requirements: to better address the prudential risks associated with NEM participants who reallocate, or generators who have market load, the Rule changes the approach to the provision of prudential requirements by providing for a prudential margin according to the anticipated credit risk associated with each market participant.

C.4 NEMMCO's reallocation procedure

As required under clause 3.15.11A(a) of the Rules, NEMMCO has developed reallocation procedures for the NEM.[26]

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[24] The number of days may vary depending on public holidays.

[25] AEMC, 2007, *Rule Determination - National Electricity Amendment (Reallocations) Rule 2007*, http://www.aemc.gov.au/electricity.php?r=20060425.162734

C.4.1 Reallocation Procedure: Energy And Dollar Offset Reallocations

On 14 December 2007, NEMMCO published a reallocation procedure for energy and dollar offset reallocations.[27]

Under this procedure, NEM participant are permitted to submit reallocation requests either before a specified trading interval has occurred (referred to as a "prospective reallocation" or "ex-ante reallocation") or after the specified trading interval has occurred (referred to as "ex-post reallocation").

Prospective reallocations are included in the determination of a NEM participant's Maximum Credit Limit (MCL) and prudential margin.

A reallocation transaction is a transaction undertaken with the consent of two NEM participants and NEMMCO under which NEMMCO credits the credit participant with a positive reallocation amount in respect of a trading interval, in consideration of a matching negative reallocation amount debited to the debit participant in respect of the same trading interval.

The debit participant and credit participant are defined in a reallocation request lodged by NEM participants. The debit participant is generally a generator and a credit participant is generally a retailer.

This procedure permits two types of reallocation transactions:

- Energy Offset: also referred to as MWh or quantity-based, this reallocation specifies a half-hourly energy profile, and uses the half-hourly regional reference price for the nominated region to determine a reallocation amount for each trading interval. This is mainly used as a prospective reallocation, where there is an underlying contract which is specified as an energy quantity;

- Dollar offset: this reallocation specifies a dollar amount (usually a single value) which is used directly to determine the reallocation amount. This is used primarily as an ex-post reallocation for the management of outstandings.

C.4.2 Reallocation Procedure: Swap & Option Offset Reallocations

On 20 November 2007, NEMMCO published a procedure for swap and option reallocations.

As in the case for energy and dollar offset reallocation (see section C.4.1), the procedure for swap and option reallocations also permits reallocation requests to be submitted as either an ex-post reallocation or ex-ante reallocation.

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[26] NEMMCO, *Reallocation Procedures*, http://www.nemmco.com.au/met_sett_sra/setprocedures.html#ReallocationProcs, viewed 6 March 2009

[27] NEMMCO, 2007, *Reallocation Procedure: Energy and Dollar Offset Reallocations*, Version 1.0 Final, http://www.nemmco.com.au/met_sett_sra/setprocedures.html#ReallocationProcs

This procedure permits three types of reallocation transactions:

- Swap offset: this reallocation specifies a half-hourly energy profile and a strike price, and uses the half-hourly regional reference price for the nominated region to determine a reallocation amount for each trading interval. This allows a hedge contract based on a swap to be represented as a reallocation;

- Cap offset: this reallocation specifies a half-hourly energy profile and a strike price, and calculates a non-zero reallocation amount when the half-hourly regional reference price for the nominated region exceeds the strike price. This allows a hedge contract based on a cap to be represented as a reallocation;

- Floor offset: this reallocation specifies a half-hourly energy profile and a strike price, and calculates a non-zero reallocation amount when the half-hourly regional reference price for the nominated region is less than the strike price. This allows a hedge contract based on a floor to be represented as a reallocation.

As in the case for the energy and dollar offset reallocations, NEMMCO credits the credit participant with a positive reallocation amount in respect of a trading interval, in consideration of a matching negative reallocation amount debited to the debit participant in respect of the same trading interval.

The credit and debit amounts payble to reallocation participants are to be calculated in formulas in accordance with NEMMCO's procedure.

At the time of writing of this Framework and Issues Paper, the swap and option reallocation Procedure was not in used. The Commission understands that NEMMCO was awaiting a license exemption from ASIC to give effect to the Swap & Option Offset Reallocation Procedure.

Once the approvals have been obtained, it was understood that NEMMCO will issue a new version and determine the effective date.

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D Futures Offset Arrangements (FOAs)

On 10 January 2008, the Commission received a joint Rule change proposal from Australian Power & Gas, Infratil Energy Australia and Momentum Energy (FOA Proponents).[28]

A part of this Rule change proposal sought to define and accommodate FOAs within the Rules.

The Commission understands that d-cyphaTrade is the author of this Rule change proposal.

Important elements of FOAs include:

- the futures market and the Sydney Futures Exchange (SFE);
- SFE electricity futures contracts;
- the SFE Clearing Corporation (SFECC) and SFE Clearing Participants; and
- the NEM participant who is a party to a futures contract and uses it to enter into a FOA (FOA Party NEM Participant, or FPNP). A FPNP is typically, but not always, a retailer in the NEM.

D.1 The Sydney Futures Exchange

A futures market is a venue for buyers and sellers to transact futures contract. The

SFE has important roles in this market which include[29]:

- offering a futures trading facility to the public;
- acting as the first line of supervision on behalf of the corporate regulator Australian Securities and Investments Commission (ASIC); and
- providing price and data dissemination to end users.

D.2 SFE electricity futures contract

A futures contract is a contractual agreement, generally made on the trading floor of a futures exchange, to buy or sell a particular underlying commodity or financial instrument in the future at a pre-determined price. Futures contracts detail the

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[28] AEMC, 2008, *NEM Rule Change Proposal – Futures Offset Arrangements for Retailers*, http://www.aemc.gov.au/electricity.php?r=20080204.095152

[29] ASX, *A brief overview of Sydney Futures Exchange*, http://www.asx.com.au/resources/education/audio_visual/futures/module003.htm, viewed 5 March 2009

quality and quantity of the underlying asset; they are standardized to facilitate trading on a futures exchange.

A SFE electricity futures contract is a futures contract in which the underlying commodity is "electrical energy bought and sold in the NSW, Victorian, South Australian and Queensland wholesale pool markets conducted by the National Electricity Market Management Company (NEMMCO)".[30]

SFE electricity futures contracts are operated by the SFE.

FOAs were designed to facilitate the prudential support management of NEM participants who hold SFE futures contracts.

D.3 The SFECC and SFE Clearing Participants

The SFECC provides a central counter-party (CCP) clearing service for all futures and options contracts traded at the SFE, between SFE Clearing Participants.

Central to CCP clearing is the process of "novation", which involves the SFECC interposing itself between buyers and sellers of futures contracts (represented by SFE Clearing Participants) and becoming the central counterparty or principal to all trades.[31]

Through the novation process the SFECC is liable to perform against all contracts to which it is a party and effectively "guarantees" the performance of SFE Clearing Participants. Novation and thus the clearing guarantee become effective on registration of the contract between buyers and sellers.[32]

Risk exposures are managed by the SFECC in a number of ways, including but not limited to:[33]

- the margining process where the SFECC collects various margins from SFE Clearing Participants: the collection of these margins prevents SFE Clearing Participants from accumulating large unpaid losses. The large unpaid losses (especially when there is an extreme price movement) could potentially impact on the financial position of other market users; and

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[30] Base Load Electricity Futures, d-cyphaTrade, http://www.d-cyphatrade.com.au/products/electricity_futures/base_load_futures, viewed 5 March 2009

[31] d-cyphaTrade, *Guide to SFE Clearing*, http://www.d-cyphatrade.com.au/clearing/a_guide_to_sfe_clearing, viewed 5 March 2009

[32] The ASX, *Benefits of ASX Listed CFDs*, http://www.asx.com.au/products/cfds/getting_started/benefits_of_asx_listed_cfds.htm, viewed 5 March 2009

[33] The ASX, *SFE Clearing Guarantee and Capital Adequacy, Mutualisation of Risk*, http://www.asx.com.au/professionals/clearing/financial_integrity/guarantee.htm, viewed 5 March 2009

- setting up a Clearing Guarantee Fund for use in the event of default of one or more SFE Clearing Participants: the adequacy of the Clearing Guarantee Fund is regularly assessed by comparing it with the SFE Clearing Participants' potential loss exposures as determined by an approved stress testing process.

Through the margining process, when the price of a futures contract increases relative to its last price, a margin payment is collected from the party who holds a short position[34] in the futures contract (through its SFE Clearing Participant). In addition, a margin payment is paid to the party, through its SFE Clearing Participant, who holds a long position[35].

Similarly, the reverse payments would apply if the price of the future contract decreases relative to the last price.

D.4 FOAs: how do they work?

The proposed FOA is a commitment entered into by a SFE Clearing Participant on behalf of a FPNP to redirect positive cash flows associated with its futures position (cash flow generated by the SFECC's margining process) to NEMMCO. The cash flows directed to NEMMCO are to be held in an SDA to protect NEMMCO against the default of the FPNP.

In return, the FPNP only provides bank guarantee support to NEMMCO up to the level (in $/MWh) equivalent to the futures price at which the FOA was initiated (known as the Futures Lodgement Price) and beyond which cash payment obligations from the SFE Clearing Participant to NEMMCO arise under the FOA.

The way a FOA may operate is illustrated in Figure 4.

The Proponents proposed that a FOA be a voluntary arrangement which involves the following steps in the process[36]:

1. A FPNP and a SFE Clearing Participant submitting a Notice of Futures Offset Arrangement to NEMMCO[37].

2. Upon registration of the FOA by NEMMCO, the SFE Clearing Participant pays to NEMMCO cash amounts equivalent to positive futures variation margins[38]

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[34] The seller of a futures contract holds a short position. A short position means a promise to sell a certain quantity of electricity at a particular price in the future. Typically, but not always, generators hold futures contracts in short positions.

[35] The buyer of a futures contract holds a long position. A long position means a promise to buy a certain quantity of electricity at a particular price in the future. Typically, but not always, retailers hold futures contract in long positions.

[36] Commision's consultant for the FOA Rule change proposal, Deloitte advised that "the understanding [amongst stakeholders] of how the proposed rule change would operate in practice varied significantly."

[37] The Commission understands that the FPNP needs to have bought and holds an underlying futures contract to enter into a FOA.

attributable to nominated electricity futures contracts held by the SFE Clearing Participant on behalf of the NEM Participant.

3. Whenever the futures price increases:

   (a) using the fund generated by the margining process, the SFE Clearing Participant pays cash to NEMMCO of amount calculated in accordance with a formula defined in the proposed Rule. This is shown as item 3 of Figure 4;

   (b) the remaining cash is distributed to the FPNP. This is shown as item 4 of Figure 4;

   (c) NEMMCO applies amounts received under the FOA to the FPNP's SDA (or as otherwise agreed between NEMMCO and the FPNP). This is shown as item 5 of Figure 4;

   (d) NEMMCO reduces the spot market credit support required from the FPNP via a reduced MCL in consideration of the FOA.

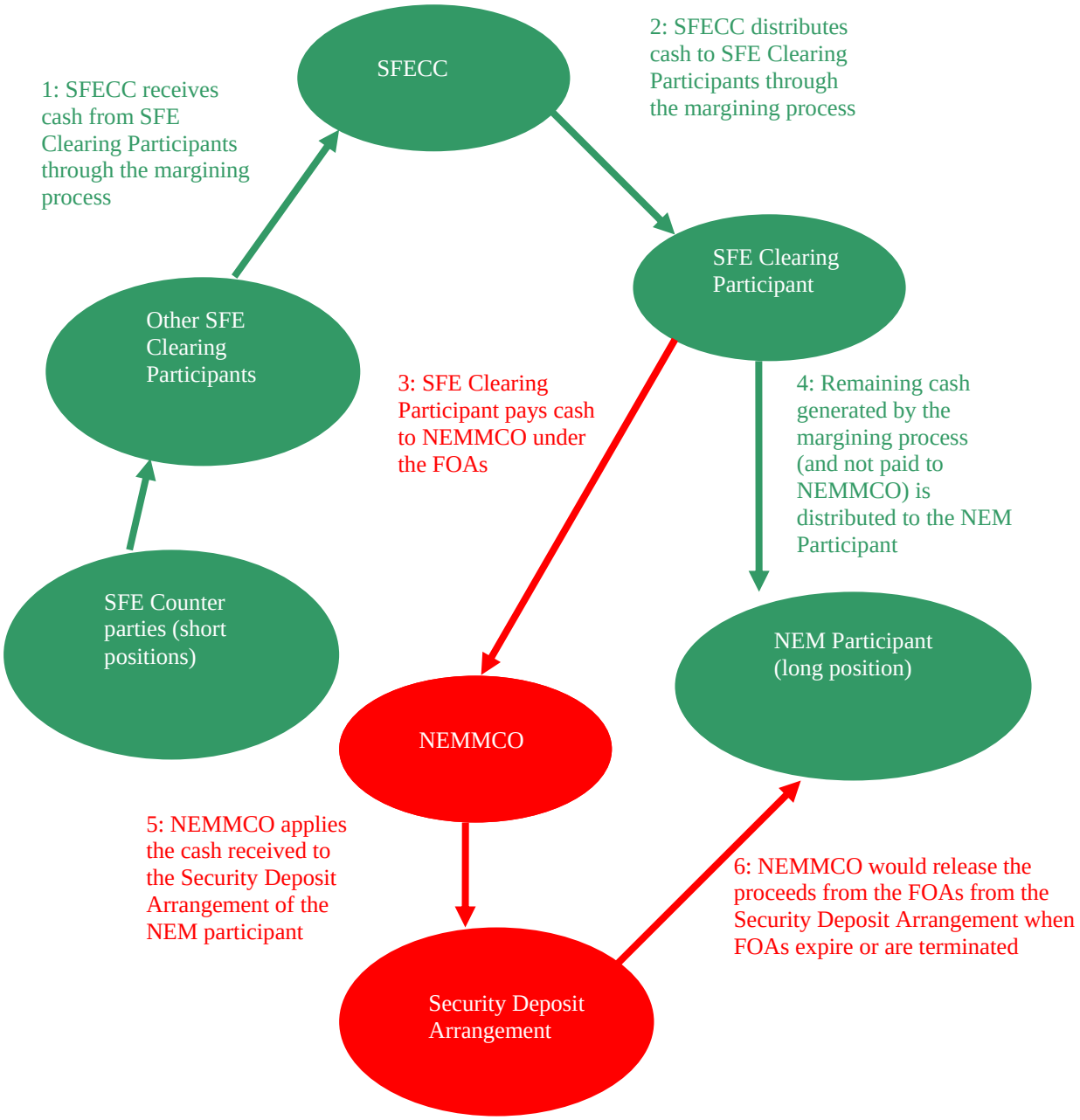
4. When the futures price decreases, which may give rise to the FPNP having contributed excess fund to the SDA, the FPNP is able to access a part of this fund (this is an amendment to the original Rule proposal).

5. NEMMCO would release the proceeds from the FOA from the SDA when the FOA expires or is terminated (as shown as item 6 in Figure 4).

6. The FPNP continues to make spot market settlement payments to NEMMCO as per existing settlement arrangements, while potentially benefiting from a reduced MCL and a reduced likelihood of being required to make payments to NEMMCO in response to a spot market margin call.

[38] In per futures contract term, this is equivalent to the difference between the Futures Lodgement Price and the prevailing futures contract price when the term of the FOA starts. The difference must be larger than or equal to zero.

Figure 4: Flows of cash – margining process and the FOAs (when the futures price increases)



Note:
The SFECC's margining process is shown in green.
The FOAs process is shown in red.

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E Futures Offset Arrangement procedure by ASX and NEMMCO

On 15 February 2007, the Commission determined a Rule amendment in relation to the reallocation arrangements (see Appendix C).[39]

As part of the first round consultation for this reallocation Rule determination, the Commission considered a joint submission by 20 NEM industry participants (J20 submission).[40]

The J20 submission, prepared by d-cyphaTrade, recommended that FOAs be defined within the Rules to offset a NEM participant's prudential requirement using the cash flow generated by its futures contracts.

The Commission was reluctant to embed within the Rules complicated procedures to handle the reallocation of a particular financial market contract. It considered that it is a good regulatory practice for such detailed matters of implementation to be contained in guidelines and procedures, in accordance with framework requirements provided in the Rules. The Commission therefore concluded that the reallocation procedures were the appropriate place for procedural details describing the FOAs.

The Commission encouraged NEMMCO and the J20 signatories to undertake direct consultation with a view to either:

- consider how the requirements of J20 may best be incorporated within the reallocation procedures; or
- develop a well formed and articulate Rule change proposal that may be brought to the Commission for consideration in the future.

As part of the second round consultation for the reallocation Rule determination, the Commission received a joint submission from NEMMCO and the ASX outlining a process where the issues raised in the first round J20 submission can be addressed by utilising the provisions for reallocations in the Rules, subject to an independent assessment of legal and risk issues.[41] The Commission acknowledged this proposed approach and commended the joint initiative of the respective parties to accommodate the concerns raised.

In January 2008, the ASX advised NEMMCO that it would no longer be participating in the development work to finalise the FOA procedure due to a preference to pursue a single licensed clearing and settlement facility for the spot and forward markets.

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[39] AEMC, 2007, *Rule Determination - National Electricity Amendment (Reallocations) Rule 2007*, http://www.aemc.gov.au/electricity.php?r=20060425.162734

[40] *Joint Submission From 20 NEM Industry Participants*, http://www.aemc.gov.au/electricity.php?r=20060425.162734

[41] AEMC, 2007, *Amendment to National Electricity (Reallocations) Rules: Joint Submission from ASX and NEMMCO*, http://www.aemc.gov.au/electricity.php?r=20060425.162734

Following the advice from NEMMCO, on 10 January 2008, the Commission received a Rule change proposal which sought to define and accommodate FOAs within the Rules. This proposal also sought to modify the Maximum Credit Limit (MCL) methodology.

This Rule proposal shares many common features with the FOA proposal contained in the J20 submission.

Further details of this Rule change proposal is contained in Appendix D of this Framework and Issues Paper.

As part of its submission to this FOA Rule change, NEMMCO attached the FOA procedure for the Commission's consideration.

A copy of this FOA procedure is attached in this Appendix E of the Framework and Issues Paper.

Attachment B

PROPOSED REALLOCATION PROCEDURE – **DEVELOPED BY NEMMCO/ASX**

FUTURES BASED RE-ALLOCATIONS – FUTURES OFFSET ARRANGEMENT (FOA)

Background

NEMMCO settles 100% of the National Electricity Market (NEM) spot value on a weekly basis. All Retailers' electricity consumption multiplied by the spot market price for each 30 minute trading interval accumulates over the period between physical consumption and the weekly settlement payment, typically 27 to 34 days later.

NEMMCO manages the risk of non payment from Retailers by requiring all parties who have the potential to owe settlement amounts to NEMMCO to provide credit support in the form of unconditional bank guarantees (or equivalents) up to a level termed the maximum credit limit (MCL). The amount of guarantee required is driven by volume of energy expected to be traded, average price and price volatility. Under the NEM Rules, a MCL is determined so as to cover a reasonable worst case exposure over a 42 day period. This is made up of a 7 day billing period, 28 days for settlement and a 7 day reaction period.

For each NEM Participant, NEMMCO sets a Trading Limit and reviews each NEM Participant's Total Outstandings (the consumed but not yet paid for electricity) against this Trading Limit each business day. The Trading Limit is a defined margin below the level of lodged credit support from the NEM Participant. Any potential breach of a Trading Limit must be immediately addressed (i.e. by 10:30am on the same day) generally by cash payments or additional bank guarantees, otherwise an onerous Call Notice is issued.

Generally, Retailers offset the risk of price fluctuations in the pool by entering into financial contracts with Generators or through the purchase of Futures Contracts.

Reallocation is a process available in the NEM whereby one party (usually a Generator) who is usually in credit to NEMMCO reallocates or transfers some of that credit (or takes on more debt) to another party (usually a Retailer) who is usually in debt to NEMMCO. Reallocation is a mechanism to allow the netting off of financial transactions or obligations with National Electricity Market spot settlement obligations. The reallocation or netting off process has been available in certain forms with the intention of reducing the volatility of spot market settlement transactions to NEMMCO and thus reducing the required level of bank guarantees to be lodged with NEMMCO.

This document sets out the process to enable certain cash flows from the margining of Futures Contracts to form futures based reallocations or offset arrangements that can be transactions in accordance with Rule clause 3.15.11 of the settlement process for Participants in the National Electricity Market (NEM). The proposed procedure would be a reallocation procedure in accordance with Rule clause 3.15.11 (b) and 3.15.11A

The objective of introducing procedures to support Futures Offset Arrangements (FOA) is to enable NEM Participants to minimise the posting of duplicated collateral support for their spot market purchases and their (offsetting) financial market hedges and to provide the ability for NEM Participants to benefit from additional prudential support where the MCL based bank guarantee levels prove to be insufficient to cover actual pool price outcomes.

[An independent legal and risk assessment was to be carried out to inform the market as to whether the FOA proposal should be incorporated into the reallocation procedures under the

Rule amendment recently approved by the AEMC. These reports will accompany the Rules consultation that is required as part of the development of these procedures in accordance with Rule clause 3.15.11A (a).]

High Level Description of the Proposed Futures Offset Arrangement Reallocation Procedures

A FOA is an arrangement whereby a Clearing Participant of a licensed Clearing and Settlement Facility, as defined in the Corporations Act of 2001, agrees on behalf of a NEM Market Participant to facilitate the cash payment to NEMMCO of amounts derived from electricity futures variation margins occurring above a prescribed Futures Contract price in relation to Futures Contracts that have been specified to be subject to the arrangement.

Futures Offset Arrangements (FOAs) operate as follows:

1. A SFE Clearing Participant registers with NEMMCO as a *Reallocator*. (Rule 2.5B) A *Reallocator* is required to satisfy the NEM Rules that are relevant including the requirement to follow reallocation procedures.

   Comment - A *Reallocater* is not providing credit support, they are merely passing through cash-flows on behalf of the Retailer. SFE Clearing Participants are suitably regulated to fulfil this task under the Corps Law and supervision of SFE, ASIC and RBA.

2. The *Reallocator* submits a FOA reallocation request to NEMMCO on behalf of a NEM Participant (Rule 3.15.11 (c)). The NEM participant undertakes not to sell or otherwise dispose of the Futures Contracts nominated as part of the FOA without the agreement of NEMMCO. The *Reallocator* will notify NEMMCO immediately if it terminates the Reallocation. (Comment: payment to NEMMCO on behalf of Retailers is only irrevocable once payment is made. Prior to this time the Reallocator may cancel the Reallocation at any time).

3. Upon registration of the FOA by NEMMCO, the *Reallocator* is to pay to NEMMCO cash amounts derived, in accordance with this procedure, from positive futures variation margins attributable to nominated current quarter electricity futures contracts held by the *Reallocator* on behalf of the NEM Participant;

4. NEMMCO applies the amounts received under the FOA to the NEM Participant's Security Deposit Account which, in accordance with this procedure, will secure part payment of a settlement amount of a defined NEM billing period of the NEM Participant.

5. In accordance with Rule clause S3.3.1 (4) NEMMCO will have regard to the quantity and pattern of FOAs entered into on behalf of a NEM Participant and reduce that NEM Participant's Maximum Credit Limit (MCL) and consequently that NEM Participant's required amount of credit support.

6. The extent of the MCL reduction for that NEM Participant will be a component of the difference between:

   a. The NEM Participant's energy exposure to NEMMCO based on the existing volatility-adjusted price expectation (in $/MWh); and

   b. The NEM Participant's energy component based on the relevant electricity futures contract's lodgement price (in $/MWh) as stipulated in the FOA request.

This reduction in the required level of Credit Support is on the basis that the component of the positive futures variation margins paid by the *Reallocator* to NEMMCO will reduce the size of the NEM Participants Total Outstandings to NEMMCO. The extent of the reduction in MCL permitted due to the operation of the FOA will not only depend on the volume of energy covered by the FOA but also an assessment as to the risks associated with the FOA in comparison to the risk of relying on a lower level of credit support but with a cash stream that is intended to maintain Total Outstandings at a more constant level.
[The consultation on this procedure together with the Risk Assessments will contribute to the decision on the extent of allowed reduction in Credit Support.]

7. The NEM Participant continues to make spot market settlement payments to NEMMCO after the netting off of the Security Deposit amounts as per existing settlement arrangements, while benefiting from a reduced MCL.

Background to the Operation of FOAs

1. Each NEM Market Participant (Retailer) who is a net consumer of electricity builds up an amount of debt to NEMMCO termed Total Outstandings. The period of time, that this Total Outstandings relates to for electricity consumed, is the period of typically the last 27 to 34 days. Apart from the operation of national public holidays, NEM settlement usually occurs on a Friday covering the week of electricity consumption from Sunday am to Saturday pm ending 4 weeks less one day before the typical settlement Friday. A final settlement statement is calculated, typically on the 17th business day, and issued on the 18th business day after the weekly billing period with the cash transaction occurring on the 20th business day by 10.30am. At that point of cash settlement, the last 26 calendar days plus that consumption to 10.30am on the Friday is still outstanding to NEMMCO. NEMMCO publishes the dates for NEM settlement going out the next three years in the NEM Settlement Calendar. The outstandings increase over the next seven days to the last 33 days plus 10.5 hours consumption, just before the next settlement at 10.30am on the subsequent Friday. This period is termed the Total Outstanding Period.

2. Futures Contracts are based on calendar quarters. The starting point for valuing the Futures Contract is referred to the Future Lodgement Price (FLP), being the expectation of the average NEM spot price for the quarter at the time of its lodgement. As the NEM spot price is determined each 30 minutes and thus each day in the quarter the market price of the current quarter Futures Contracts would be expected to move in accordance with the market consensus view of the average pool price outcome for the quarter. This view is likely to incorporate revealed NEM spot prices and anticipated NEM spot prices based on all available information (eg anticipated supply outages, weather forecasts etc). For example, a current 1 MW baseload electricity Futures Contract (covering 91 days) at 30 days into the quarter may have a market price of $50/MWh. This is based on the actual average of NEM spot prices of say $40/MWh over the last 30 days and an expectation of $54.918/MWh for the remainder of the 61 days. If the next day experiences an average $150/MWh NEM spot price for the day, the market value of the baseload electricity Futures Contract, with all other expectations being equal, would be expected to rise to = (40 x 30 + 150 + 60 x 54.918)/91 = $51.0448/MWh.

3. When there is a movement in an electricity Futures Contract market price a margin payment is required to move between the Futures Contract parties via the SFE Clearing Corporation Clearing House and the SFE Clearing Participants. In the above example a movement in the value from $50 to $51.0448 would require a margin payment of $1.0448 x 2184 for a 91 day quarter contract = $2,281.84. This

one day margin payment to the buyer of the electricity Futures Contract relates to $95.0768/MWh over the days energy - being the difference between the NEM Spot market outturn for the day of $150/MWh and the market's expectation of $54.918/MWh. Thus when spot prices go up, the value of the current electricity Futures Contract goes up and a Margin Payment will go to the buyer of the electricity Futures Contract. This payment will have a correlation to the increased Total Outstandings of the NEM Market Participant to NEMMCO. The objective will be for NEMMCO to hold a proportion of the accumulated positive margins to cover the difference between the FLP and the highest value of the current electricity Futures Contract price that has occurred during the Total Outstandings Period.

4. The above positive margins are only of value to reduce the NEM Participant's Total Outstandings to NEMMCO to the extent of the component of positive margins related to the highest Futures Contract price in the Total Outstandings Period and until the relevant billing week has been settled. Thus for efficiency reasons there is no point NEMMCO holding those margin payments beyond the component of positive margins related to the highest Futures Contract price in the Total Outstandings Period past that point. The un-required portion of the margin payments should be utilised to settle a portion of that NEM Participant's billing week to NEMMCO. Each time there is settlement of a NEM billing week, that billing week will no longer be outstanding, and so the Futures Contract prices corresponding to that settlement week will be excluded from the assessment of the highest Futures Contract price in the Total Outstandings Period. Even though cash settlement occurs typically on Friday, the exclusion of the corresponding billing week's Future Contract prices will be undertaken prior to the Friday. This timing difference occurs because the repayment to the NEM Market Participant, via a contribution to their NEM settlement, of the un-required positive margins will be undertaken through the NEM Participant's Final NEM settlement statement. The Final NEM settlement statement is not calculated on the day of cash settlement but is typically calculated on the Tuesday being the day prior to the issue of the Final statement. Once calculated in the Final statement, NEMMCO cannot modify the repayment to the NEM Market Participant, of the un-required positive margins. Thus assessment of the highest Futures Contract price in the Total Outstandings Period will assume that the week to be next settled occurs on the date the NEM settlement statement is calculated not the day it is actually settled.

5. Not all of the positive margins resulting from movements in the current Futures Contract are relevant to reduce the volatility in the NEM Participant's Total Outstandings to NEMMCO. If the actual NEM spot price falls below the market's expectations, the current Futures Contract would be expected to fall and the NEM Participant's Total Outstandings should also be well under control and not be expected to require additional cover. However if the NEM spot price increases this could become an issue again if it exceeded the price expectation that was used to set the NEM Participant's MCL. If this initial MCL level was based on the same market expectation as the market value of the current Futures Contract, margin payments to NEMMCO should only be required when the current Futures Contract exceeds its highest price previously reached in the period covered by the Total Outstandings Period.

6. The NEM settlement timetable, and NEMMCO procedures currently have the payment times and Trading Limit assessments times as at 10:30am NEM business days. For the FOA, which has payment times of 11am, to readily integrate with NEM, NEMMCO will need to assume that the 11am margin payment is committed and will be included in the 10:30am assessments.

Commencement Process

7. It is proposed that the NEM Participant's MCL will be re-determined to reflect the FOA by the lesser of:

    a. five business days after registration of the FOA; or

    b. the time normally allowed for MCL to be re-determined to reflect other reallocation transactions.

    As it takes some time to arrange the revised Credit Support instruments following the entry into the operation of an FOA NEMMCO may not release existing Credit Support instruments for a number of days (not to exceed 5 business days after the registration of the FOA. The FOA is given a Futures Contract Lodgement price (FLP) which corresponds to the previous day's settlement price of the relevant Futures Contract at the time of registration.

    FOAs maybe lodged at anytime not just 5 days prior to the commencement of the relevant futures contract quarter.

    FOAs including cash flows from positive variation margins should be accepted straight away, albeit existing Credit Support instruments may take up to 5 days to 're-adjust'.

8. NEMMCO will determine the NEM Participant MCL based on the FLP. NEMMCO will advise the adjusted MCL within 2 business days of the registration of the relevant FOA.

9. The NEM Participants revised MCL will only apply from the first business day of the futures contract current quarter or two days after the MCL review advice received from NEMMCO.

10. If the reduced MCL and thus the reduced Trading Limit (TL) causes the NEM Participant's Total Outstandings (TO) to then be greater than the revised TL the TO breach would be expected to be rectified by the NEM Participant according to the existing prudential processes.

11. In the period from the registration of the FOA until the commencement of the relevant quarter the movements in price of the futures contract do not necessarily reflect any actual movement of the NEM spot price but rather the expectation of NEM spot prices for the coming quarter. Once the calendar quarter commences then the movement in the NEM Spot prices are expected to be reflected in the futures contract prices.

12. As the MCL for the NEM participant was determined using the FLP that related to the value of the relevant Futures Contract at the time of registration a component of positive margin payments will be required each business day from the next business day after registration with NEMMCO to ensure that when the current quarter commences sufficient funds are in hand in lieu of the reduced MCL.

13. From the point of registration of the FOA, margin payments to NEMMCO only need to be those related to increases beyond the maximum of: the FLP; or any current Futures Contract price already reached in the Total Outstandings Period.

Ending of the Process

14. The last FOA margin payment relevant to the period of actual NEM spot price movement should be the 11am payment the business day immediately after the last day of the calendar quarter. Even though the futures contract takes some three days to finalise these finalisation payments are not relevant to cover the movements in actual NEM spot prices.

15. Figure 1 following summarises the above points.

Return of Funds

16. NEMMCO should only retain those funds relevant to the exposure of the NEM Market participant during the FOA. Thus only those margin payments relevant to the current Total Outstanding Period are retained.

17. As the Final NEM settlement statement is calculated 3 business days before the NEM cash settlement the Total Outstandings Period to the time of calculation the Final NEM Settlement statement is to be used in determining which margin payments can be utilised in settling a component of the NEM Market Participant's NEM Settlement account.

18. It is possible that some margin payments will not be utilised in settling a component of the NEM Market Participant's NEM Settlement account until about 33 days after the end of the quarter.

19. All interest accrued by NEMMCO while holding the FOA margin payments will be returned to the NEM Market Participant as per the usual process for returning interest from security deposits.

Continuation of the FOA

20. Seven business days before the end of the FOA the NEM Participant and Reallocator should advise of their intention to enter into a new FOA, otherwise NEMMCO will advise the NEM Participant within 2 business days of the new MCL requirement that is to apply from the first business days after the end of the FOA.

Baseload or Peak Electricity Futures Contracts

21. The cover, in terms of margin payments that reflect movements in NEM Spot prices, provided by a baseload electricity futures contract FOA would clearly be greater than that afforded by a peak electricity futures contract. Peak futures contracts operate only in reference to a subset of all hours in the quarter. The reduction in MCL afforded by a peak electricity contract FOA would need to reflect: the higher FLP and associated bank guarantees and adjusted MCL; and the coverage of peak hours . It is anticipated that peak electricity futures contract FOAs would have a lower "B" factor (as discussed in Appendix 2) in the determination of the reduction in MCL than for the base load contracts. [Comment: not necessarily due to the higher FLP and coverage of peak period hours.]

Calculation of Values to be paid under the FOA

22. On the assumption that the Futures Contract end of day settlement prices are available at the end of that same day, NEMMCO can determine the amounts owed by the

Reallocator to NEMMCO and will advise the *Reallocator* by 8.00am the next business day morning for amounts to be paid by 11am that same business day morning. The amount advised will never be greater than the positive margins resulting from the Futures Contracts under the FOA. In accordance with the NEM Rules the payments from the *Reallocator* must be paid in full despite any difference in view as to the amounts owing as long as the amount is not greater than the positive margins resulting from the Futures Contracts under the FOA.

Procedure for Futures Offset Arrangement Reallocations

1. Procedures

1.1 This procedure is a reallocation procedure in accordance with Rule clause 3.15.11 (b) and 3.15.11A.

1.2 The *Reallocator* and the NEM Market Participant and NEMMCO would be expected to enter into a Standing FOA Agreement that would have parties agreeing to these procedures and specifying who has the authority to bind the organisations to these arrangements as well as communication protocols.

1.3 All times in this procedure refer to Sydney's local time.

2. FOA *request*

In order to be valid, a FOA request must be registered with NEMMCO by a NEM Market Participant and a *Reallocator* and include:

2.1 The term of the FOA, including:

a. The Starting Day being the day of registration of the FOA;

b. The Termination Day being the last day that a FOA is to be in effect; (expected to be the last day of a calendar quarter)

2.2 Specification of the futures contracts nominated to become subject to the FOA including:

a. The futures contract Region;

b. The futures product code as referenced by the relevant exchange. This should then define the following;

i. The futures contract term (specifying the time and date of the first half hour interval of energy and the time and date of the last half hour interval of energy encompassed by the term of the futures contract);

ii. The MWhs incorporated in one futures contract;

iii. The futures contract load shape (being either Base or Peak);

c. The quantity of futures contracts;

d. The Futures Lodgement Price being the previous day's end of day settlement price of the registered futures contract at the time of registration.

NB: Section 3 details registration of FOAs by NEMMCO

3. Registration of futures offset reallocations

3.1 NEMMCO will provide a means for parties to efficiently enter the values outlined in the section above. Once the details are confirmed by the authorised parties of the *Reallocator* and NEM Market Participant the arrangement is deemed to be registered.

3.2 The FOA is to be registered 5 business days before the calendar quarter to gain the benefit of the MCL reduction for the entire quarter. If the registration commences after this point the MCL reduction will not be effective for five days unless otherwise agreed by NEMMCO. The Starting Day is the day of registration of the FOA with NEMMCO.

3.3 NEMMCO will advise the NEM Participant of their required MCL incorporating the impact of the FOA within 2 business days of registration.

3.4 Where a NEM Participant's MCL will reduce below the current levels the reduction will be effective from the first business day of the FOA current quarter or such latter day determined by NEMMCO if the FOA was registered after five business days before the current quarter.

3.5 Where the NEM Participant is to use the FOA to replace credit support already held or in lieu of additional credit support the registration of the FOA is to be registered in accordance with the notice requirement for the provision of Credit Support under the NEM Rules. An expiring bank guarantee under the NEM Rules is required to be replaced 10 business days before expiry. An altered level of credit support must be available on the day the change is applicable.

3.6 NEM Participants must ensure that 5 business days before the termination date of a FOA, additional Credit Support is provided to NEMMCO as if the FOA had terminated to be effective from the first business day after the termination of the FOA.

3.7 NEMMCO will nominate an Austraclear account to the *Reallocator* for the purpose of NEMMCO receiving payments arising from the FOA.

NB: In order to minimize the likelihood of the *Reallocator* wanting to terminate the FOA under Section 9, Section 4 requires the *Reallocator* in their Clearing Participant function not net down against other futures contracts held by the *Reallocator* on behalf of the NEM Market Participant.

4 Futures contracts not to be netted down.

4.1 Positive futures variation margins attributable to Futures Contracts which are the subject of a FOA cannot be netted down or offset against futures variation margins attributable to other Futures Contracts held by the *Reallocator* on behalf of the NEM Market Participant.

4.2 The NEM Market participant undertakes not to sell or otherwise attempt to dispose of Futures Contracts the subject of an FOA without the approval of NEMMCO. Prior to giving approval for the FOA to be terminated NEMMCO would need to ensure that the NEM Participant has adequate credit support in

place and that the termination will not cause an increase in their Total Outstandings beyond their Trading Limit.

4.3 The Reallocator is permitted to terminate the FOA as outlined in Section 9.

NB: Section 5 defines the formula for the calculation of cash flows arising from positive movements in the value of relevant Futures Contracts (above the futures lodgment price or highest futures contract price in the Total Outstandings Period) to be paid to NEMMCO by the *Reallocator*. Cash flows will be calculated and paid on Calculation Days (defined) being futures exchange business days. The formula accommodates two types of calculation days being the first business day after the Starting Day of the FOA, and a subsequent calculation day. [There may need to be some reconciliation between a futures exchange business day and a NEM business day - A NEM business is a day other than a Saturday, Sunday or a day which is lawfully observed as a national public holiday on the same day in each of the participating jurisdictions.]

NEMMCO receives cash flow amounts equivalent to the positive moves in the relevant Futures Contracts to the extent that such moves occur above the greater of the Futures Lodgment Price and the value of the previous highest value of the Futures Contract during the Total Outstandings Period during the term of the FOA. NEMMCO will never be obligated to make a payment under the arrangement. If NEMMCO has received (or is due) payment arising from an increase in Futures Contract value and then, on a subsequent calculation day(s), the Futures Contract value reduces there is no obligation for NEMMCO to return funds under the arrangement to the *Reallocator*.

See a worked cash flow example in Appendix 3.

5. **Calculation of payment to NEMMCO of a FOA Reallocation.** The Calculation Day is defined to be a business day on which the calculation is made using the previous day's settlement price and the day on which the payment is made. Calculations are done on a business day early in the morning with payments transacted by 11am that same day.

   5.1 The *Reallocator* will make payment to NEMMCO, of amounts calculated on a Calculation Day, by 11am on the same Calculation Day in relation to Futures Contracts which are the subject of a FOA. The Calculation Days being Business Days of the relevant exchange that occur from the first Business Day after the Starting Day until the first Business Day after the term of the FOA. The payment to be made on a Calculation Day is defined by:

   $$\text{Max}\left[(DSP_t - \text{Max}[FLP, DSP_h]) \times FQ, 0\right]$$

   Where:

   FLP = the Futures Lodgement Price;

   DSP_h = the previous highest official daily settlement price for the contract that has occurred during the NEM Total Outstanding Period from the Starting Day.

   On each NEM settlement date the Total Outstanding Period will be reduced by the seven days making up the NEM billing week that is

being paid. If the Total Outstanding Period for the day before settlement date comprised days in Weeks 1,2,3,4,5, the Total Outstanding Period on the Week 1 settlement date would be reset to include those days in Weeks 2,3,4,5. Official daily settlement prices in Week 1 are no longer considered on and after the day they have been paid;

FQ = the quantity of Futures Contracts multiplied by the energy covered by the FOA in MWhs incorporated in each Futures Contract; and

5.1.1 For the first Calculation Day of a FOA (ie the first business day after the Starting Day):

DSP_t = the official daily settlement price as at close of business on the Starting Day (the Starting Day should always be a business day of the relevant exchange).

DSP_h = the FLP

5.1.2 For a Calculation Day that occurs after the first Calculation Day :

DSP_t = the official daily settlement price as at close of business on the on the Business Day immediately prior to the Calculation Day.

The last payment day is the first business day after the Termination Day.

Where a FOA is prematurely terminated by the *Reallocator* in accordance with Section 9, no further payments from the *Reallocator* will be made after the notice of termination.

NB: Section 6 defines form and timing of payments to NEMMCO and the determination of amounts to be paid. It is proposed that NEMMCO determine the amounts to be owed by the *Reallocator* as the calculations are complex and relate to NEM settlement days as well as the end of day Future Contract prices. The *Reallocator* will never be obliged to pay more than the daily positive margin amount.

6. Form and Timing of payments to NEMMCO arising from a FOA.

The *Reallocator* must make cash payment as determined in Section 5 in cleared funds to an Austraclear account nominated by NEMMCO no later than 11 am on the relevant Calculation Day on which a payment obligation arises. NEMMCO will accept such payments.

7. NEMMCO to provide daily Futures Clearing Statements to the *Reallocator*.

NEMMCO will obtain the end of day settlement price of the relevant Futures Contract from the SFE Clearing House each business day and will provide the *Reallocator* with a daily clearing statement detailing the amounts to be paid under each FOA by 8 am on the Calculation Day.

NB: Section 8 requires NEMMCO to deposit payments received from the *Reallocator* into the Security Deposit account of the NEM Market Participant and then use the money to offset the amounts owed by the NEM Participant's relevant settlement amount, unless otherwise agreed between NEMMCO and NEM Market participant.

8. Application of monies received by NEMMCO from FOA.

NEMMCO will credit the Security Deposit of the NEM Market Participant with an amount equivalent to monies received from the *Reallocator* and then offset the settlement amount owing by the NEM Participant for the relevant settlement statement that relates to the timing of the monies received, unless otherwise agreed to by NEMMCO and the NEM Market Participant.

On NEM settlement calculation days the resetting of the Total Outstandings Period could result in a new highest official daily settlement price (DSP_h). If the settlement statement days included the DSP_h, then on the NEM settlement calculation day of that NEM Settlement those settlement statement days will no longer be considered. If a new DSP_h resulted from resetting the Total Outstandings Period the difference between the previous and the reset DSP_h will be utilised to settle a portion of the relevant NEM Market Participant's NEM settlement account. At all times during the operation of the FOA NEMMCO will hold accumulated margin payments to cover the difference between the FLP and the highest official daily settlement price for the Total Outstandings Period.

NB: Section 9 defines the notification procedure and obligations for early termination of FOAs by the *Reallocator* or by NEMMCO.

9. Termination of FOAs

9.1 Subject to clauses 4.2 and 4.3 a FOAs may be wholly or partially terminated on a date earlier than that specified on the notice of FOA, by notification in accordance with the Standing FOA Agreement to NEMMCO and the NEM Market Participant from the *Reallocator* specifying:

a) a new Termination Day being the last day that the FOA will occur and not being earlier than the date of such notification to NEMMCO; and

b) the number of futures contracts which will be subject to the new Termination Day.

9.2 Payment obligations by the *Reallocator* to NEMMCO cease on the new Termination Day. Where the new Termination Day is the day of notification, the termination payment obligations cease at the time of notification. Any payments made by the *Reallocator* to NEMMCO by 11am on the Termination Day will not be recoverable by the *Reallocator*. Notification of termination must be provided before 11am otherwise any payments that day must be paid by 11am in accordance with the reallocation FOA procedures.

9.3 In the event of a close out by the *Reallocator* of futures contracts that are subject to a FOA, the *Reallocator* will:

a) immediately notify NEMMCO and the NEM Market Participant of the termination of the FOA in relation to the futures contracts that have

been closed out, specifying a new Termination Day for the FOA, being the day that notice is given; and

b) immediately inform NEMMCO of the reason for closeout.

9.4 If a default event occurs in relation to the NEM Market Participant which is a party to a FOA prior to the Termination Day of a FOA, NEMMCO may terminate the FOA by notice given to the *Reallocator* and the NEM Market Participant at any time whilst the default event is subsisting. The termination is effective forthwith upon NEMMCO notifying the NEM Market Participant and the *Reallocator* that lodged the notice of FOA of the fact of termination, notwithstanding that the default event may be subsequently cured. The obligation for the *Reallocator* to make payments to NEMMCO in accordance with these procedures will cease on the new Termination Day.

9.5 If a Reallocator or NEM Market participant breaches the Reallocation procedures NEMMCO may terminate the FOA by notice given to the *Reallocator* and the NEM Market Participant. The termination is effective forthwith upon NEMMCO notifying the NEM Market Participant and the *Reallocator* that lodged the notice of FOA of the fact of termination, notwithstanding that the breach of the Reallocation procedures may be subsequently cured. The obligation for the *Reallocator* to make payments to NEMMCO in accordance with these procedures will cease on the new Termination Day.

9.6 In addition to any other right which NEMMCO may exercise in relation to a default event, upon termination of a FOA NEMMCO may re-determine the MCL and trading limit for the NEM Market Participant which lodged the notice of FOA having regard to the termination which has occurred.

9.7 If the re-determined MCL, following the termination of the FOA, results in the NEM Participant having insufficient Credit Support, the NEM Participant will have 24 hours to provide replacement credit support. If that is not provided the usual NEM default process would apply for insufficient credit support.

9.8 If the cancelled FOA results in the NEM Participant's Total Outstandings exceeding their Trading Limit then if that occurs before 12 noon NEMMCO would issue a Call Notice that day, otherwise if not addressed by 10:30am the next morning NEMMCO would issue a call notice that morning.

Appendix 1. Example of notice of FOA

Retailer A Pty Ltd (NEM Market Participant); and

Clearing Company Pty Ltd (*Reallocator*) enter details into the reallocation interface provided by NEMMCO to register a FOA arrangement (FOA) in relation to the electricity futures contracts described below. Upon registration of the FOA by NEMMCO, the NEM Market Participant and the *Reallocator* agree to be bound by the terms and conditions of procedures concerning FOAs.

Term of the FOA:
Starting Day: 23 December 2005
Termination Day: 31 March 2006

The futures contracts nominated to become subject to a FOA:
Contract Region: VIC

Futures product code: BVH6

The futures contract term: Q1 2006

Commencing with the half hour ending: 00:30 1-Jan-2006

Ending with the half hour ending: 24:00 31-Mar-2006

Futures contract load shape: BASE

Quantity of futures contracts: 1

MWhs incorporated in each futures contract: 2,160

The Futures Lodgement Price ($/MWh): 36.50

Appendix 2 - Suggested formula and worked examples for calculating MCL reduction for Futures Offset Arrangements

This Appendix assumes the reader is familiar with the Background and Operation of the FOA as covered in the first sections of this paper. NEMMCO currently sets a MCL that is based on the historical price, price volatility and the NEM Participants past physical consumption. When certain types of reallocation have been entered into a reduction in the required level of credit support is permitted. This Appendix suggests the reduction likely to be available under the FOA. As there are some different risks associated with the FOA, based on a risk assessment the full proposed reduction may not be appropriate. This discounting of the benefit has been represented by a "B" factor. The extent of the reduction in MCL will not only depend on the volume of energy covered by the FOA but also an assessment as to the risks associated with the FOA in comparison to the risk of relying on a lower level of credit support but with a cash stream that is intended to maintain Total Outstandings at a more constant level.

Where a NEM Participant's physical consumption is covered by a Futures Contract the relevant margin payments that make up the FOA have the effect of reducing the NEM Participants volatility in their Total Outstandings to NEMMCO. It is suggested that the MCL required by this FOA could then be represented by the future lodgement price, around which the margin payment operates, rather than the historical price times a volatility factor.

If the existing MCL = Price x Volatility Factor x Daily Energy x 42 days then the MCL when covered by an FOA = Future Lodgement Price x Futures Daily Energy x 42 days, then the suggested reduction in MCL under an FOA could be described as below. The 42 days is generally used as this covers the 7 day billing week, 28 days for settlement and 7 days reaction time.

Suggested Formula

The reduction in MCL for a FOA that covers the entire quarter will be

B * Max [(PR x VFR – FLP) x FLR x T, 0]

- B is the factor that relates to the inherent risks associated with the FOA (B will lie between 0 and 1.0) [This is to be determined under the consultation for the procedure and the risk advice.]

Where for each Futures Offset Arrangement:

- FLP represents the futures lodgement price covering each Market Region R;
- FLR represents the associated average daily energy of Futures Offset Arrangements for the NEM Market Participant where the offset is to be calculated with reference to the spot electricity price of Region R.
- PR represents NEMMCO's estimate of the average future pool price for each Market Region R;
- VFR is a volatility factor, which ensures that the MCL is not exceeded more than once in 48 months;
- T is the number of days assumed in NEMMCO's MCL calculation period (42 days).

Worked examples of calculation of MCL reduction for Futures Offset Arrangements

Consider: **NSW Baseload Q1 2006.**

MCL calculation prior to Futures Offset Arrangement:

Assume NEMMCO predicts NEM Market Participant's average quantity of energy use for Q1 2006 NSW = 24MWh per day.

MCL for NSW Q1 2006 prior to futures offset, (ignoring loss factor and GST components):

= PR x VFR x LR x T

= $40.63 x 2.6 x (24 MWh) x 42 days

= $105.64 x 24 MWh x 42 days

= $ 106,483.10

MCL reduction under Futures Offset Arrangement

Now assume a FOA is lodged in accordance with the Notice of FOA as per in appendix 1 (NSW Q1 2006: 1 contract representing 24 MWh per day).

MCL Reduction as at 1-Jan-06

Assume MCL reduction for Futures Offset Arrangement is being calculated as from 1-Jan-06, a day when the futures term fully encompasses the 42 day MCL calculation period.

MCL Reduction = B* Max [(PR x VFR – FLP) x FLR x T, 0]

= B* Max [($40.63 x 2.6 – $36.50) x (24 MWh) x 42 days, 0]

= B* $69,691.10 (where B is between 0.0 and 1.0)

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F Direct Retailer Futures Offset Arrangement (proposed by d-cyphaTrade)

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13 March 2009

Dr John Tamblyn (Chairman)
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear John

Futures Offset Arrangement Rule Change Proposal 2008
Submission to Draft Rule Determination (22nd January 2009)
Ref: ERC0056

As foreshadowed in our submission dated 6 March 2009, d-cyphaTrade is pleased to have the opportunity to provide the AEMC with an alternative to the Futures Offset Arrangements (**FOAs**) Rule Change Proposal which includes the attached Draft Rule for implementing the alternative in the National Electricity Rules (**Rules**). The alternative, the Direct Retailer FOAs:

- allows for the use of futures offset arrangements in the NEM within the existing regulatory structure whereby the FOA would be between the Market Participant (a Registered Participant) and NEMMCO;
- addresses the concerns raised by the AEMC in its draft Rule determination on the Futures Offset Arrangement Proposal;
- in comparison to the current arrangements in the NEM and the FOA Rule change proposal, better contributes to the achievement of the national electricity objective (NEO); and
- is within the AEMC's powers to make a more preferable Rule.

We address each of these points below

How the Direct Retailer Futures Offset Arrangement would operate

The Direct Retailer FOAs would be implemented in a similar way to which reallocation transactions have been implemented in the Rules, thus providing market participants with a prudential offset alternative to reallocations. The administration of a Direct Retailer FOA under the Rules involves the following:

1. A Market Participant (normally a retailer) will lodge a FOA Request with NEMMCO. If a FOA Request is lodged with NEMMCO in the appropriate form;
2. NEMMCO will register a FOA at the "Futures Lodgement Price";
3. As a condition of the FOA, the Market Participant must procure and provide to NEMMCO from the Market Participant's SFE Clearing Participant a confirmation of the Market Participant's futures position in writing each morning during the term of the FOA;
4. NEMMCO will recalculate the Maximum Credit Limit (MCL) for the Market Participant in consideration of the FOA such that taking into account the FOA the new MCL (measured in $/MWh) should be equal to the maximum of (i) the Futures Lodgement Price at inception of the FOA and (ii) the Prudential Margin (in $/MWh), adjusted for GST and Loss Factor. A formula for calculating the MCL with regards to the FOA is specified such that the MCL will not exceed the MCL prior to the FOA;

5. NEMMCO will calculate the FOA payment on a daily basis during the term of the FOA using a defined formula which references price movements of defined futures contracts above the "Futures Lodgement Price" registered at the inception of the FOA;
6. If the calculated FOA payment is a positive amount (due to a futures price increase), the Market Participant is then obligated to make a cash payment to NEMMCO via their existing Security Deposit Arrangement. If the FOA payment calculation results in a nil amount (from a futures price decrease or unchanged futures price) the Market Participant is not required to do anything;
7. A Market Participant cannot terminate a FOA without NEMMCO's consent;
8. NEMMCO may terminate a FOA at the request of the Market Participant but may determine a new MCL and Trading Limit for the Market Participant as a condition of termination;
9. Interregional offsets are not allowed under FOAs; and
10. NEMMCO may need to apply for a Ministerial Exemption from holding an Australian Financial Services License (AFSL) to deal in FOAs, on similar grounds to those used to obtain NEMMCO's exemption to hold an AFSL to auction SRA derivatives.

Please see the attached Draft Rule regarding the implementation of the above Direct Retailer FOA in the Rules.

How the Direct Retailer FOA alternative addresses the concerns raised by the AEMC regarding FOAs

The Direct Retailer FOA addresses the concerns raised by the AEMC in its draft Rule determination on the FOA Rule change proposal. We demonstrate below how the Direct Retailer FOA will address the AEMC's concerns by reference to the subject matters identified in the draft Rule determination:

- *MCL offset methodology:* Our analysis (see previous submission) demonstrates that Direct Retailer FOAs would have retained a much higher retailer MCL credit support for NEMMCO than under reallocation since 2005 (an average $50.08/MWh of FOA bank guarantee support compared to $17.35/MWh under reallocation) plus FOAs would have contributed additional Security Deposit protection which has been ignored in the analysis. The increased competition in the supply of FOAs and elimination (via daily margining of FOAs) of off market bilateral credit default risks between NEM Participants required under reallocation will however regularly yield operating cost savings to retailers under FOAs despite the larger credit support retained with NEMMCO;

- *Legal rights and obligations of FOA parties:* SFE Clearing Participants would not be a party to the FOA. Hence legal rights and obligations of the FOA parties (NEM Participants) are governed by the Rules. The obligation is on the Market Participant to ensure its SFE Clearing Participant provides NEMMCO with a confirmation of the Market Participant's relevant futures position daily;

- *Non-firmness of FOA payments*: the Direct Retailer FOA is between the Market Participant and NEMMCO and only NEMMCO can terminate an FOA. NEMMCO will not terminate an FOA at the Market Participant's request unless the Market Participant provides sufficient alternative credit support under the Rules. Therefore, the uncertainty regarding FOA payments under the initial proposal is removed.

- *clawback risks of security deposits:* the Direct Retailer FOA arrangements utilise existing payment arrangements and will not change the status quo regarding legal clawback risk.

The risk of clawback would be at the same level that currently exists in relation to security deposit payments that are used for billing purposes. Similarly the risks would be the same as those risks associated with a bank guarantee relating to credit support. The frequency and size of FOA payments are less when compared with ex-ante reallocations as under a Direct Retailer FOA the Retailer only has to pay NEMMCO amounts that are greater than the "Futures Lodgement Price" whereas reallocation transactions include the gross pool price;

- *Lack of clear dispute resolution procedure:* both parties to the Direct Retailer FOA (Market Participant and NEMMCO) are governed by the Rules, hence the dispute resolution process is governed by the Rules as well;

- *Inter-regional FOA offset:* the Direct Retailer FOA does not (and nor did the original FOA proposal) permit interregional MCL offsets; and

- *Counterparty default risk:* under Direct Retailer FOAs, counterparty default risk is reduced through daily margining of the retailer's futures hedge contracts, thereby reducing costs. In comparison, exante reallocation merely transfers the risk of a retailer's default from NEMMCO to a generator via an opposing (and very large) over-the-counter counterparty exposure.

How the Direct Retailer FOA alternative contributes to the NEO

d-cyphaTrade shares the Commission's view that it is important to balance the prudential needs of generators and retailers whilst maintaining a sound and efficient prudential regime in line with the NEO. d-cyphaTrade considers that Direct Retailer FOA best meets the NEO in comparison to the alternatives as:

- there is currently no complementary offset mechanism to reallocations in the Rules that contributes to the effectiveness and efficiency of the current prudential regime;
- it supports the prudential regime of the NEM whilst reducing the working capital cost to retailers and generators alike which is in the long term interests of consumers of electricity;
- the reduction of working capital costs:
    - lowers barriers to entry and thus promotes the efficient investment in electricity services; and
    - leads to increased competition which in turn promotes efficient operation and use of electricity services.
- addresses the concerns and issues that resulted in the AEMC determining that the FOA Rule change proposal did not satisfy the NEO.

The AEMC's power to make the Direct Retailer FOA Rule

d-cyphaTrade submit that the AEMC should make the Direct Retailer FOA as an alternative to the Initial Rule proposed (and which was rejected) as part of the FOA Rule change proposal rather than considering this alternative as part of the market review that has recently commenced on the same issue.

Section 91B of the National Electricity Law gives the AEMC the power to make the Direct Retailer FOA instead of the Rule proposed by the FOA Rule change proposal. In addition, if the AEMC considers further consultation is required, section 102A of the National Electricity Law empowers the AEMC to issue another draft Rule determination and conduct another round of consultation to give stakeholders the opportunity to comment on the Direct Retailer FOA prior to AEMC determining to make the Rule.

We therefore urge the AEMC to consider the Direct Retailer FOA alternative in making its final Rule determination on the FOA Rule Change Proposal.

Yours sincerely,

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Draft Rule - Direct Retail Futures Offset Arrangement

The following Rule Changes will be required to implement and support FOAs:

New National Electricity Rules

3.3.2B Futures Offset Arrangement Request

3.3.2C Preserved cash flows from Futures Offset Arrangements

3.3.2D Termination of Futures Offset Arrangements

3.15.11B Futures Offset Arrangements

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3.15.1 Settlements management by NEMMCO

Schedule 3.3 - Principles for Determination of Maximum Credit Limits & Prudential Margins

Chapter 10 Definitions

3.3.2B Futures Offset Arrangement Request [NEW RULE]

(a) A *Market Participant* may request *NEMMCO* to register a proposed *futures offset arrangement* ("a *futures offset arrangement request*) in accordance with the *futures offset arrangement rules*.

(b) A *futures offset arrangement request* must set out the details of the proposed *futures offset arrangement* which includes:

(1) the term of the *futures offset arrangement*, including:

(i) the first day on which the arrangement is to take effect ("**the starting day**");

(ii) the last day that the arrangement is to be in effect ("**the termination day**");

(2) a confirmation in writing from a *SFE Clearing Participant* to *NEMMCO* that the *SFE Clearing Participant* holds futures contracts on behalf of the *Market Participant* or an entity controlled by or related to the *Market Participant* as specified in the *futures offset arrangement request*, in a volume greater than or equal to the quantity of futures contracts specified at subparagraph (iv);

(3) specification of the futures contracts nominated to become subject of the arrangement including:

(i) the *region* of futures contract;

(ii) the futures product code as referenced by the Sydney Futures Exchange;

(iii) the futures contract term (specifying the time and date of the first half hour interval of energy and the time and date of the last half hour interval of energy encompassed by the term of the futures contract);

(iv) the quantity of futures contracts;

(v) the MWhs incorporated in one futures contract;

(vi) the futures contract cash settlement day;

(vii) the futures contract load shape (being either Base or Peak); and

(viii) the official Sydney Futures Exchange settlement price of the futures contract on the Sydney Futures Exchange business day immediately before the day the *futures offset arrangement request* is lodged with *NEMMCO* by the *Market Participant* ("**Futures Lodgement Price**"), quoted in $/MWh.

(c) *NEMMCO* must register a proposed *futures offset arrangement*:

(1) within 1 hour of receipt of a *futures offset arrangement request* where such receipt occurs between 9 am to 4 pm on a *business day*;

(2) by 9 am on the next business day following the receipt of a *futures offset arrangement request* where such receipt occurs after 4 pm on a *business day*; or

(3) by 9 am on the same *business day* of receipt of a *futures offset arrangement request* where such receipt occurs before 9am of that same day.

(d) *NEMMCO* must immediately inform the *Market Participant* of the registration of the *futures offset arrangement* under paragraph (c) including the confirming the details of the *futures offset arrangement* (being the details set out in paragraph (b)).

(e) *NEMMCO* may impose conditions on the registration of a *futures offset arrangement* including requiring the *Market Participant* to procure from a *SFE Clearing Participant*, a daily confirmation to be provided to *NEMMCO* that the volume of relevant contracts held on behalf of the *Market Participant* or an entity controlled by or related to the *Market Participant* is no less than specified in the *futures offset arrangement request*.

(f) A *Market Participant* who has registered a *futures offset arrangement* must pay NEMMCO monies equivalent to futures variation margins above the Futures Lodgement Price (as specified in the *futures offset arrangement request)* in accordance with clause 3.15.11B.

NB: Prescribes (a) the minimum balance of Security Deposit (SDA) for a *Market Participant* which is subject to a FOA. The clause is silent on how the FOA amount in the SDA will be used after the term of the futures offset arrangement has expired. NEMMCO would have the discretion to apply the money to billing period transactions.

3.3.2C Preservation of security deposit from futures offset arrangements. [NEW RULE]

During the term of a *futures offset arrangement* the *Market Participant* must retain an amount (in cash or other approved security) in the *Market Participant's* security deposit of no less than:

Max [(DSP $_t$ − FLP) x FQ, 0] where such terms are as defined in clause 3.15.11B [new],

unless otherwise agreed with *NEMMCO*.

Defines the notification procedure and obligations for early termination of FOA.

3.3.2D Termination of Futures Offset Arrangements [NEW RULE]

(a) If a *default event* occurs in relation to the *Market Participant* which is a party to a *futures offset arrangement* prior to the termination day (as specified in the *futures offset arrangement request*), *NEMMCO* may terminate the *futures offset arrangement* by giving notice to the *Market Participant* at any time whilst the *default event* is subsisting. The termination is effective immediately from the receipt of the notice of termination by the *Market Participant*, notwithstanding that the *default event* may be subsequently cured.

(b) *NEMMCO* may terminate a *futures offset arrangement* if the *Market Participant* breaches its *prudential support* obligations.

(c) *NEMMCO* may terminate a *futures offset arrangement* if the *Market Participant* fails to comply with any conditions imposed by *NEMMCO* in respect of the *futures offset arrangement* at the time it was registered.

(d) *NEMMCO* may terminate a *futures offset arrangement* at the request of the relevant *Market Participant*. *NEMMCO* may make such termination conditional upon the *Market Participant* meeting requirements specified by NEMMCO, including but not limited to *NEMMCO* being satisfied that the *Market Participant* will meet *prudential support* requirements upon termination of the *futures offset arrangement*.

(e) In addition to any other right which *NEMMCO* may exercise in relation to a *default event*, upon termination of a *futures offset arrangement NEMMCO* may redetermine the *maximum credit limit, prudential factor* and *trading limit* for the *Market Participant* which was the subject of the *futures offset arrangement* having regard to the termination which has occurred.

3.15.11B Futures Offset Arrangements [NEW RULE]

Calculation methodology

(a) The *Market Participant* must pay the amounts calculated in accordance with paragraph (c) to *NEMMCO* on:

(1) the next SFE business day after the starting day (as specified in the *futures offset arrangement request*) ("**First Calculation Day**")

(2) each business day of the Sydney Futures Exchange ("**SFE business day**") other than the First Calculation Day that occurs during the term specified in the *futures offset arrangement request* but excludes days

after the last trading day of the relevant futures contract ("**Calculation Day**"); and

(3) where the termination day of the *futures offset arrangement* (as referred to in the *futures offset arrangement request*) occurs after the last trading day of the relevant futures contract, the cash settlement day of the relevant futures contract after the last trading day of the relevant futures contract ("**Last Calculation Day**").

(b) The amount payable by a *Market Participant* under paragraph (b) is as follows:

Max $[(DSP_t - Max [DSP_{t-1}, FLP, DSP_h]) \times FQ, 0]$

Where:

FLP means the Futures Lodgement Price as specified in the *futures offset arrangement request*;

DSP_h means the previous highest Sydney Futures Exchange official daily settlement price that has occurred during the term of the *futures offset arrangement* as specified in the *futures offset arrangement request*;

FQ means the quantity of Futures Contracts multiplied by the MWhs incorporated in each Futures Contract; and

DSP_t means:

(1) for the First Calculation Day, the SFE official daily settlement price as at close of business on the starting day (as specified in the futures offset arrangement request) (unless the starting day is not an SFE business day, in which case DSP_t means the SFE official daily settlement price as at close of business on the next SFE business day); and

(2) for a Calculation Day, the SFE official daily settlement price immediately prior to the Calculation Day;

(3) for a Last Calculation Day, the Sydney Futures Exchange official cash settlement price of the relevant futures contract;

DSP_{t-1} means:

(1) for the First Calculation Day, FLP;

(2) for a Calculation Day, the most recent SFE official daily settlement price prior to DSPt;

(3) for the Last Calculation Day, the Sydney Futures Exchange official daily settlement price as at close of business on the last exchange trading day of the relevant futures contract.

(c) On a Calculation Day, NEMMCO may reset DSP_h if:

(1) $DSP_t < DSP_h$; and

(2) the Market Participant has withdrawn funds or instructed NEMMCO in writing that it will withdraw funds from the Market Participant's Security Deposit thereby reducing the balance of the Security Deposit to Max$[(DSP_t - FLP) \times FQ, 0]$

and in which case DSP_h will be reset on this Calculation Day to Max [DSP_t , FLP] and NEMMCO will inform the *Market Participant* of the new DSP_h

Form and Timing of payments to NEMMCO

(d) If a *Market Participant* is required to pay *NEMMCO* under this clause 3.15.11B, the *Market Participant* must pay *NEMMCO* by no later than 11 am on the relevant Calculation Day.

(e) *NEMMCO* must deposit the money in its security deposit fund established in accordance with rule 1.11 in respect of the *Market Participant*.

(f) NEMMCO will provide the *Market Participant* with a daily invoice detailing:

(1) any amount payable under the *futures offset arrangement*;

(2) the volume in MWh of the *futures offset arrangement*; and

(3) the relevant Sydney Futures Exchange official daily settlement prices (including FLP, DSPt-1, DSPt and DSPh) of futures contracts relevant to the *futures offset arrangement*,

by 9:00 am on the relevant Calculation Day.

Termination

(g) Upon termination of the *futures offset arrangement* by *NEMMCO* in accordance with 3.3.2D, the obligation for the *Market Participant* to make payments to *NEMMCO* in accordance with the *futures offset arrangement* will cease upon payment by the *Market Participant* to *NEMMCO* of all amounts owing in relation to Calculation Days up to and including the date of termination.

Amendments to Existing National Electricity Rules

Note: new wording is denoted in *underlined blue.*

N.B: The amendments to clause 1.11 are to enable NEMMCO to use the security deposit fund to retain monies relating to FOAs.

1.11 NEMMCO Rule Funds [amended]

(a) *NEMMCO* must continue to maintain, in the books of the corporation:

(1) the registration and administration fund;

(2) the security deposit fund; and

(3) any other fund which the *Rules* provide will be maintained in *NEMMCO's* books,

(each a "*Rule fund*").

(b) *NEMMCO* must ensure that there is paid into each *Rule fund:*

(1) in the case of the registration and administration fund, all amounts of *Participant fees* and *auction expense fees* and any other amounts payable under the *auction rules* or *SRD agreements* as *NEMMCO* considers necessary from time to time other than those which are to be paid into another *Rule fund;*

(2) in the case of the security deposit fund, amounts which are received by *NEMMCO* under clauses 3.3.8A, 3.3.13(a)(2) and 3.3.13(a)(3) and the *future offset arrangement rules*;

(3) in the case of a fund referred to in paragraph (a)(3):

(i) all amounts which are received by *NEMMCO* in connection with carrying out its functions or powers in relation to that fund;

(ii) all amounts of *Participant fees* which are received or recovered by *NEMMCO* which relate to *NEMMCO's* actual or budgeted costs and expenses for carrying out its functions or powers in relation to that fund; and

(4) in the case of each *Rule fund*, income from investment of money in the *Rule fund*.

(c) In respect of the security deposit fund, *NEMMCO* must keep records, in respect of each individual *Market Participant*, of:

(1) security deposits made by that *Market Participant* and actual interest or other income earned on that *Market Participant's* payments to that fund which will be recorded as credits for that *Market Participant*;

(2) any application, or return to that *Market Participant*, of monies in the security deposit fund in accordance with clause 3.3.13A or the *futures offset arrangement rules*;

(3) deductions for liabilities and expenses of the security deposit fund referable, or allocated, to that *Market Participant* which will be recorded as debits to that *Market Participant*; and

(4) the credit or debit balance for that *Market Participant*.

(d) *NEMMCO* must ensure that money from each *Rule fund* is only applied in payment of:

(1) in the case of the registration and administration fund, costs and expenses of *NEMMCO* carrying out its functions or powers:

(i) in relation to a fund referred to paragraph (a)(3) to the extent that such costs and expenses cannot be met from the money contained in that fund*;* or

(ii) other than those functions and powers referred to in subparagraph (i);

(2) in the case of the security deposit fund, monies owing to *NEMMCO* by a *Market Participant* or the return of monies to a *Market Participant* in accordance with clause 3.3.13A and the *futures offset arrangement rules*;

(3) in the case of a fund referred to in paragraph (a)(3), costs and expenses of *NEMMCO* carrying out its functions or powers in relation to that fund; and

(4) in the case of each *Rule fund*:

(i) other than the security deposit fund, reimbursement to a *Registered Participant* or another *Rule fund* to make any necessary adjustment for any excess amounts which are paid as *Participant fees* as a result of any of *NEMMCO's* actual costs and expenses being less than the budgeted costs and expenses or as a result of the payment of any interim *Participant fees*; and

(ii) liabilities or expenses of the *Rule fund*.

3.3.8 Maximum credit limit and prudential margin [amended]

(b) The *maximum credit limit* for a *Market Participant* is a dollar amount determined by *NEMMCO* applying the principles set out in schedule 3.3, being an amount determined by *NEMMCO* on the basis of a *reasonable worst case* estimate of the aggregate payments for *trading amounts* (after *reallocation* *and futures offset arrangements*) to be made by the *Market Participant* to *NEMMCO* over a period of up to the *credit period* applicable to that *Market Participant*.

(g) *NEMMCO* must notify the *Market Participant* of any determination or change under this clause 3.3.8 of that *Market Participant's maximum credit limit* or *prudential margin* (as the case may be) and, on request from that *Market Participant,* provide details of the basis for that determination or change, *including the trading, price, volatility,* prospective *futures offset arrangement* assumptions *and prospective reallocation assumptions and the average spot prices and ancillary service prices and average trading amounts.*

The amendments to the below clause has been amended to ensure that the Market Participant can provide NEMMCO money in relation to the security deposit for FOAs.

3.3.8A Security Deposits [amended]

At any time, a *Market Participant* may provide a security deposit to *NEMMCO* with respect to:

(a) securing payment of any amount which may become payable in respect of a billing period; and

(b) in relation to a *futures offset arrangement*.

NB: 3.3.13 amended to enable Market Participants to lodge a *futures offset arrangement request* to meet Call Notices in a similar way in which NEMMCO reallocations may be applied for that purpose.

3.3.13 Response to Call Notices [amended]

(a) Subject to clause 3.3.13(b), where *NEMMCO* has given a *call notice* to a *Market Participant*, the *Market Participant* must before 11.00 am (*Sydney time*) on the next *business day* following the issue of the *call notice* either:

(1) agree with *NEMMCO* to an increase in the *Market Participant's maximum credit limit* by an amount not less than the *call amount*, and provide to *NEMMCO* additional *credit support* where, by virtue of the increase in the *maximum credit limit*, the *Market Participant* no longer complies with its obligations under clause 3.3.5;

(2) (where clause 3.3.13(a)(1) is not satisfied) pay to *NEMMCO* in cleared funds a security deposit of an amount not less than the *call amount*;

(3) lodge either a *reallocation request* and/or *futures offset arrangement request* which would give rise to a reduction in the *Outstandings* of the *Market Participant* or both equal to an amount which is not less than the *call amount* and which is accepted by *NEMMCO*; or

(4) provide to *NEMMCO* any combination of clauses 3.3.13(a)(1), (2) and (3) such that the aggregate of the amount which can be drawn under the additional *credit support* provided and the amount of the security deposit paid and the amount of the *reallocation request* or *futures offset arrangement request* accepted by *NEMMCO* is not less than the *call amount.*

(b) If *NEMMCO* gives a *call notice* to a *Market Participant* after noon (*Sydney time*), then *NEMMCO* is deemed to have given that *call notice* on the next *business day* for the purposes of this clause.

NB: 3.15.1 amended to include the facilitation of FOAs in billing and payments facilitation provided by NEMMCO.

3.15.1 Settlements management by NEMMCO [amended]

(a) *NEMMCO* must facilitate the billing and settlement of payments due in respect of *transactions and* *futures offset arrangements* under this Chapter 3, including:

(1) *spot market transactions*;

(2) *reallocation transactions;* and

(3) ancillary services transactions under clause 3.15.6A.

(b) NEMMCO must determine the Participant fees and the *Market Participants* must pay them to NEMMCO in accordance with the provisions of rule 2.11.

NB: Amendments to Schedule 3.3.1 to:

1. Introduce the consideration of FOAs within the Principles for Determination of Market Participant's MCL;
2. Define the calculation of the amount of MCL reduction created by FOAs. The MCL reduction is commensurate with the quantity, term and Lodgement Price of the relevant futures contracts in comparison to the volatility adjusted price assumption (adjusted for GST and Loss Factor) used by NEMMCO to calculate the MCL, before reallocations and FOAs. The residual MCL after reduction due to FOA cannot be less than the Prudential Margin in Schedule 3.3.2.

Schedule 3.3 - Principles for Determination of Maximum Credit Limits & Prudential Margins [amended]

This schedule sets out the principles to be followed by *NEMMCO* in determining the *maximum credit limit* and *prudential margin* for a *Market Participant*.

Schedule 3.3.1 Principles for determining maximum credit limits

(a) The *maximum credit limit* should be set on the principle of imposing a guarantee of payment being made to *NEMMCO* to a level of a *reasonable worst case*.

(b) When calculating the *maximum credit limit NEMMCO* should have regard to:

(1) impartial objectivity rather than subjectivity, though it is recognised that some key parameters will need to be subjectively estimated from a limited amount of data - the estimation should be as impartial as possible;

(2) the average level and volatility of the *regional reference price* for the *region* for which the *maximum credit limit* is being calculated, comparable to the frequency of breaches of the *maximum credit limit*;

(3) the pattern of the quantity of electricity recorded in the *metering data* for the *Market Participant*;

(4) the quantity and pattern of the *prospective reallocation* in the immediate future;

(5) the correlation between the metered amounts of electricity and the *regional reference price*;

(6) the length of the *credit period*, which is the number of days from the start of a *billing period* to the end of the *reaction period* taking into account:

(i) the length of the *billing period*;

(ii) the typical time from the end of the *billing period* to the day on which *settlement* for that *billing period* is due to be paid (the *payment period*);

(iii) any current written request from the *Market Participant* to *NEMMCO* for the *maximum credit limit* to be determined on a *payment period* taken, for the purposes of clause 3.3.8 and not otherwise, to be 14 days; and

(iv) the time from a *default event* to the suspension or other removal of the *defaulting Market Participant* from the *market*, being a period of up to 7 days (the *reaction period*);

(7) the statistical distribution of accrued amounts that may be owed to *NEMMCO*; and

(8) the degree of confidence that the *maximum credit limit* will be large enough to meet large defaults (i.e. the degree of reasonableness in a *reasonable worst case*).

(9) reducing the *maximum credit limit* for the *Market Participant* that is subject to a *futures offset arrangement* that is commensurate with the quantity and the term of the futures contracts for the immediate future which are the subject of a *futures offset arrangement* and the difference between:

(i) the expected worst case volatility-adjusted price outcome assumed by *NEMMCO* for *maximum credit limit* calculation purposes in accordance with this schedule 3.3.1; and

(ii) the Futures Lodgement Price (as specified in the *futures offset arrangement request)* of the *futures offset arrangement*;

and which is calculated using the following methodology:

Max $[(P_R \times VF_R - FLP_R) \times FL_R \times T \times LF_R \times (GST+1), 0]$ but limited such that the reduced *maximum credit limit* is never less than the *prudential margin* calculated in accordance with schedule 3.3.2 assuming nil *futures offset arrangement*

where for each *futures offset arrangement*:

FLP_R represents the Futures Lodgement Price covering *region* R;

FL_R represents the associated average daily energy of *futures offset arrangement* for the *Market Participant* where the offset is to be calculated with reference to the spot electricity price of *region* R.

P_R represents *NEMMCO's* estimate of the average future pool price for each *region* R;

VF_R is a volatility factor, which ensures that the maximum credit limit is not exceeded more than once in 48 months;

T is the number of days assumed in *NEMMCO's maximum credit limit credit period* which coincide with days in the term of the futures contracts which are the subject of the *futures offset arrangement*.

GST represents the applicable rate for the Goods and Services Tax;

LF_R represents *NEMMCO's* estimate of the loss factor applicable across all participants for each *region* R.

(c) As far as practicable, this schedule 3.3 must be read and construed as taking into account *market ancillary service transactions* for the calculation of the *maximum credit limit* for the relevant *Market Participant*.

Schedule 3.3.2 Principles for determining prudential margins

NB: Amendment to Schedule 3.3.2 to recognise that schedule 3.3.1 ensures that under FOA, the reduced MCL cannot be less than the prudential margin without an FOA.

3.3.2(4) eliminates a doubling of credit support coverage of the reaction period for FOAs.

(4) the extent to which the *Market Participant's futures offset arrangements* overlap with the *reaction period*, the *prudential margin* will be taken to be zero.

Chapter 10 definitions

futures offset arrangement

A proposed *future offset arrangement* the subject of a *futures offset arrangement request* that is registered by *NEMMCO* under clause 3.3.2B.

futures offset arrangement request

A request by a *Market Participant* to *NEMMCO* to register a *futures offset arrangement* in accordance with clause 3.3.2B.

futures offset arrangement rules

Means clauses 3.3.2B to 3.3.2D and clause 3.15.11B.

SFE Clearing Participant

Means a "Clearing Participant" under the Clearing Rules of the Sydney Futures Exchange Clearing Corporation Pty Limited as made and amended in accordance with the Corporations Act 2001 (Cwth)

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