NEMMCO

National Electricity Market
Management Company Ltd

ABN 94 072 010 327

Sydney Office

14 March 2008

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 first round consultation

Thank you for the opportunity to provide this submission to the above Rule change proposal.

As noted by the AEMC, the futures offset arrangement (FOA) proposal has two parts as follows:

- A proposal to define in the Rules, a mechanism for reassignment of positive daily margin payments associated with a Market Participant's futures contract position to NEMMCO. This cash would be held by NEMMCO as a security deposit to protect spot market credit providers against default of the Market Participant. Under the proposal, the spot market credit support obligations of the Market Participant that has lodged a FOA would be reduced; and
- A proposal to change the current Rules defining the method for determining the Maximum Credit Limit (MCL) for a Market Participant, to be based on the futures contract settlement price rather than the current historical approach.

NEMMCO supports the development of further alternatives for the management of credit support costs in the NEM. The FOA mechanism provides a means for users of electricity futures contracts to reduce their spot market credit support requirements, and may therefore have value in the NEM as a means of reducing prudential risks for participants.

As committed to by NEMMCO and the Australian Stock Exchange (ASX) in our joint submission to the AEMC dated 25 January 2007 on the reallocation rule changes, NEMMCO and the ASX have been working during 2007 to develop a possible FOA mechanism, suitable for implementation under the current Rules, using the "Reallocator" classification of participant and procedures developed under clause 3.15.11A of the Rules. That work has included the preparation of a detailed draft procedure and explanation document, discussions with some SFE Clearing Participants, and the identification of a number of risk factors associated with the FOA mechanism that need to be quantified. In January 2008, the ASX advised NEMMCO that it would no longer be participating in the development work due to a preference to pursue a single licensed clearing and settlement facility for the spot and forward markets.

With the FOA Rule change proposal now under consideration by the AEMC, NEMMCO considers it important to make all relevant material available from its earlier work in conjunction with ASX, particularly as there are a number of differences between the approaches in areas such as:

- **Quantification and management of risks** – the timing of FOA payments in combination with the ability of a Clearing Participant to terminate an FOA at short notice give rise to material payments risks for the market. Mechanisms were being developed to manage these risks in the NEMMCO / ASX model by limiting the amount of MCL reduction following a quantification of the risks. The assessment of FOA risks does not appear to be dealt with in the proposed Rule.
- **Rules vs procedures** – It is not clear how Clearing Participants are intended to be bound to the new Rule that has been put to the AEMC. There is also a need for procedures at a more detailed level than is included in the proposed Rule. Prior to this proposed Rule change, NEMMCO intended to develop those arrangements using the "Reallocator" class of participant, and procedures under clause 3.15.11A. The Rule change proposal appears incomplete in that it does not make provision for the development of detailed procedures.
- **Returning FOA margin payments to the Market Participant** – the proposed Rule requires NEMMCO to keep the FOA margin payments for longer than is necessary to secure payment for the NEM settlement process. The current quarter futures contracts can operate for up to three months whereas the NEM exposure is only up to about 34 days. NEMMCO considers FOA payments should only relate to a period of 34 days and be returned to the Market Participant as soon as the relevant billing period is settled.
- **Calculation of the daily FOA payments** – as the determination of the amount of the margin payments to be provided in the NEMMCO model depended on NEM settlement dates it was proposed that NEMMCO advise the Clearing Participant the required amounts each day, not vice versa as in the proposed Rule change.
- **Registration of an FOA** – the proposed Rule change has NEMMCO registering the FOA in one hour of nomination by the participant. Although cash flows from the FOAs can start in a short timeframe (once IT developments are complete) arrangements to modify bank guarantee requirements can take several days with exchanges of documents often involved. The proposal is also unclear as to what would be involved in registering an FOA – this would need to be clarified before the feasibility of the 1 hour time period could be considered. NEMMCO considers these matters are better dealt with by procedure to cater for process developments.

- **Implementation timeframes** – the Rule proposal makes no reference to the time required for the development of IT systems and business processes to manage the FOA process. Depending on the nature of the Commision's final determination on the matter, implementation is likely to include consultation with stakeholders on business processes and changes to a number of IT systems. It will therefore be necessary for any Rule that requires implementation of the FOA mechanism to provide sufficient time for the development and implementation phases to be carried out by both NEMMCO and the Clearing Participants. NEMMCO would be happy to provide more detail in respect of these timing requirements as the Commission's considerations progress and the detail of the proposal is clarified.

In respect of the proposed use of futures contract prices in MCL calculations, NEMMCO has assessed some of the likely outcomes, and has made a number of observations including:

- When spot prices are not extreme, the use of base quarterly futures contract prices in lieu of historical averages when determining MCLs, may give favourable results due to better correlation with actual quarterly price outcomes; but
- If prices become volatile, the use of futures contract prices may result in higher MCL requirements than the current approach, although for a short period.
- The futures contract price based approach depends on the futures price being derived from liquid trading on the exchange, which raises the question of what arrangement should be used when trading is not liquid. A different mechanism (such as the current one) would also be needed for regions that do not have futures contracts.

The above issues, and others, are considered further in the attachments to this letter:

- **Attachment A**: Comments on the FOA proposal and MCL methodology under consultation;
- **Attachment B**: documentation of FOA development work carried out by NEMMCO and the ASX to date;
- **Attachment C**: extracts from a draft consultancy brief that was intended for use in the procurement of an expert risk assessment on the FOA arrangement defined in Attachment B. We are providing this material to the AEMC on the basis that similar risks are resident in the FOA Rule proposal, and their quantification requires expert assessment along similar lines to that specified in the draft brief.

The Rule proposal does not make any recommendations to change or to reduce the availability to participants of the reallocation process currently specified in procedures under the Rules. Proponents of the Rule change do however make a number of statements and criticisms of the reallocation process in an effort to promote comparative merits of an FOA mechanism. NEMMCO considers that some of those statements are either overstated or inaccurate, and could lead parties to inappropriate conclusions about the utility of reallocations. As the accuracy of such statements is not central to the question of whether the FOA proposal should be progressed, NEMMCO has not sought to respond to them in the context of this submission.

NEMMCO remains supportive of initiatives to develop a robust FOA mechanism. All, NEMMCO / ASX development work on the mechanism to date has been made available to the AEMC to facilitate the Rule change assessment, and NEMMCO is willing to explain the detail as appropriate.

We look forward to the Commission's consideration of our submission. If there are any queries about this submission, please do not hesitate to contact me on 02 9239 9103.

Yours sincerely

Brian Spalding

Brian Spalding
Chief Operating Officer

NEMMCO

Attachment A: Comments on the proposal FOA Rule and MCL methodology

NEMMCO has reviewed the FOA Rule change proposal put to the AEMC by Australian Power & Gas, Infratil Energy and Momentum Energy. Despite the proposal having some merit, there are a number of areas that appear to require greater clarity before it can be considered complete. There are also a number of areas where the proposal has focused on the benefits of the FOA mechanism, but has not identified or quantified the offsetting risks.

In respect of the proposed changes to the methodology for determining MCLs, NEMMCO has assessed some of the likely implications and has put that material forward as an input to the AEMC's considerations.

1 Comments on the Proposed FOA Mechanism

NEMMCO offers the following comments on the proposed Rule based FOA mechanism.

1.1 Timing and price risk of FOA payments

The NEM prudential management regime is set out in clause 3.3 of the Rules. Part of that regime requires market participants to maintain their total spot market outstandings within their Trading Limit. NEMMCO monitors participants' total outstandings daily, and under the current procedure a Call Notice could be issued by 12 noon (Sydney time) on any business day if a participant has not made provision for their Total Outstandings to NEMMCO to remain under their Trading Limit[1]. To avoid the issue of a Call Notice, participants might bring their Total Outstandings within their Trading Limit by lodging additional bank guarantees, lodging security deposits (cash) or through the lodgement of a reallocation transaction. NEMMCO's experience to date is that all of these options are used by participants following a high price event.

Timing risk: The proposed FOA mechanism is intended to assign the daily current quarter futures contract margin payment to NEMMCO to be used in a similar way to a security deposit following a high spot price event. However, the FOA payment is calculated from the futures contract price set following the close of futures trading on the previous business day. That futures price may have been affected by spot market price events that occurred prior to the close of trading that day, but is unlikely to be influenced by any spot price spikes that occurred after the close of trading. NEMMCO understands that trading closes at 5pm. Therefore, the FOA payment received the next day is unlikely to be sufficient to cover the impact on a participant's spot market outstandings due to price spikes after around 5pm the previous day. Experience has shown that spot prices can be very high at these times when supply / demand balance is tight. On the other hand, NEMMCO's current prudential regime requires outstandings to be lodged for the full amount by which outstandings exceed the Trading limit for the previous day. The mechanics of the FOA process may therefore result in the required payment not being received by NEMMCO until the day following the potential increase in Total

[1] Full details of the current NEM prudential management regime can be found in the "NEM Settlement Prudential Supervision Process" at: http://www.nemmco.com.au/settlements/530-0055.pdf

Outstandings. When the effect of weekends is taken into account, the delay can be longer. The payment will therefore be received some 24 - 48 hours later than required by current prudential processes. During that 24 - 48 hour period, the participant could accrue substantial additional outstandings, potentially well beyond the level of their bank guarantee. NEMMCO considers this timing risk to be a material matter that needs to be fully understood and managed.

The proposal does not discuss this timing risk, which needs to be fully quantified and addressed.

Price Risk: Following on from the above discussion on timing, risk may also derive from the way in which the futures settlement price is calculated. NEMMCO understands that the daily futures settlement price (which is the reference price for the calculation of FOA payments) is calculated from the price of the most recent trade that day. If no trades take place, the bid/offer spread at close of trading, or the previous closing price could be used depending on the activity that occurred. This may give rise to a price risk for FOA payments, in that if little of no trades take place on a particular day, the futures price will not reflect movements in the spot market, and may therefore not result in adequate payment to NEMMCO to cover the increment in participant outstandings. Again, this risk would need to be dealt with in the design of the FOA, but has not been discussed in the proposal before the AEMC.

Termination Risk: In addition to this timing risk, the proposal allows the SFE Clearing Participant to terminate a FOA on any day (even the current day) by notice to NEMMCO. The terms of this termination need to be set out in detail, to ensure that it is clear what payments must be made by the Clearing Participant on termination and whether that varies with the time of termination in the day. The detail of these mechanisms could have material implications for the effectiveness of the mechanism, and particularly at times of high spot prices. The Rule proposal does not appear to fully explore and address these risks.

Dealing with the Risks: As part of the earlier discussions on a potential FOA mechanism, NEMMCO and the ASX identified that the risks inherent in the process would need to be identified, quantified and addressed as part of the design. To that end the following steps were taken:

- A factor – referred to as 'B' in Attachment B which gives full details of the NEMMCO / ASX mechanism - was introduced to discount the reduction in MCLs, to recognise that a full offset of spot market outstandings may not be appropriate due to risks inherent in the process; and
- A consultancy brief was prepared to support a full risk assessment of the (then) proposed FOA mechanism. It was intended that the risk assessment would provide a basis for setting the value of the discount factor B – which would be between 0 and 1. The consultancy brief was not used before this Rule was proposed, and the ASX withdrew from discussions, but extracts from it are included with this submission as Attachment C for information and use by the AEMC as appropriate.

NEMMCO suggests that the risks inherent to the FOA proposal need to be fully understood and addressed or accepted before a Rules based FOA mechanism should be progressed.

1.2 Timing of FOA margin payments and Call Notices

As discussed above, Market Participants are required to ensure that their total outstandings are below their Trading Limit. If they fail to do so, NEMMCO may issue a Call Notice under Rule 3.3.11. The practical implementation of this is that NEMMCO carries out an assessment at 10:30am, and should a Market Participant still be in breach of their Trading Limit, then a Call Notice may be issued before12 noon that day. Operationally, this regime is already extremely tight to administer.

Under the proposed Rule, FOA margin payments are due at 11am, compared with the current prudential assessment time of 10:30am. Should a FOA margin payment not materialise, then either the Clearing Participant or the Market Participant would need to receive a Call Notice (depending on the rules for FOAs unwinding). In order to allow timely consideration of the issuance of a Call Notice (which NEMMCO views as a serious step) we suggest that the time limit for issuance of a current day Call Notice under 3.3.13(b) be amended from noon to 12:30pm as a direct consequence of this Rule change proposal, should it proceed.

1.3 Returning FOA payments to the Market Participant

The FOA Rule proposal requires that FOA payments be retained by NEMMCO until the 4th business day after the end of the futures quarter, or until the FOA is terminated. This gives rise to two material issues:

- Firstly, NEMMCO only needs to retain possession of a portion of the positive margin payments from the current quarter futures contracts held until spot market settlement is completed for the week that caused the movement in the current quarter futures contract prices. Under current arrangements, once that settlement requirement has been satisfied, and the need for associated security deposits has passed, the security deposit is returned to the participant with interest or used to partially settle their spot market account. NEMMCO does not consider it appropriate for FOA payments to be treated differently from security deposits in this regard. The Rule proponents have argued that if NEMMCO retains the FOA payments until after the end of the futures quarter, the market participant will be less likely to seek access the Retailer of Last Resort mechanism to alleviate financial stress. NEMMCO cannot see the nexus in these claims and considers this to be a regulatory matter that should be considered separately. It is not clear what NEMMCO would be expected to do with the money under these circumstances where all NEM settlement obligations have been met.
- Secondly, if an FOA is terminated early by the clearing participant, NEMMCO will still need to retain possession of the FOA payments until the market participant's Total Outstandings are reduced below their trading limit. The implication in draft clause 3.15.11B-8 that FOA payments should be returned on termination is therefore inappropriate. It also appears to be at odds with the provisions of the termination clause 3.15.11B-9.

1.4 Calculation of the daily FOA payments

The Rule proposal requires the Clearing Participant to determine the portion of the futures margin payment that is to be provided to NEMMCO. This should be a mechanical process because the Rule proposal does not require the payment calculations to take into account the NEM settlement cycle. Nevertheless, there may need to be a clearly defined means of dealing with errors or disputes. If the NEM dispute resolution process is to be used then this should be explicit, including the Clearing Participant's obligations under the process.

However, as discussed in section 1.2 above, NEMMCO is of the view that FOA margin payments in respect of a billing period should be returned to the Market Participant by NEMMCO when the billing period has been settled in the spot market. Under that approach, the FOA margin payments required to be made by the Clearing Participant to NEMMCO are dependent upon the NEM cash settlement dates. These are usually Fridays, but vary due to the effect of public holidays, and introduce an additional variable into the calculation process. Under these circumstances it would be preferable for NEMMCO to calculate the FOA margin payment and to communicate it to the Clearing Participant. This is the position that was reached in NEMMCO's earlier work with the ASX.

Subject to the Commission's position on the return of FOA margin payments to Market Participants, it may be preferable for NEMMCO to calculate FOA margin payments rather than for the responsibility to lie with the Clearing Participant.

1.5 Rules based vs procedures based approach to FOA

As noted earlier, NEMMCO and the ASX had progressed to an advanced stage in discussions to design and implement an FOA mechanism under clause 3.15.11A of the Rules. An important difference between that approach and the FOA Rule proposal is that the Rule proposal places parts of the FOA mechanism in the Rules, whereas the former approach does not.

The draft procedure that was under development for the procedural mechanism is still a 'work in progress', but the latest draft is attached to this submission in attachment B. It can be seen that the draft procedure contains more detail than the Rule proposal. However, the Rule proposal makes no allowance for the additional detail to be specified.

It is suggested that if a Rules based FOA mechanism is progressed, a process will be needed for the establishment of detailed procedures, and for parties to be required to comply with the procedures, unless all details of the mechanism are placed explicitly in the Rules as part of the Rule change process.

1.6 Registration of a Clearing Participant as a Reallocator

The draft NEMMCO / ASX mechanism was intended to make use of the 'reallocator' classification of participant in the NEM, which is set out in clause 2.5B of the Rules. The requirement to register as a reallocator would bind the clearing participant to the relevant parts of the Rules and procedures.

The FOA Rule proposal does not appear to make use of the reallocator classification of participant. It is therefore not clear what obligation clearing participants would be under to comply with the proposed Rule, or with any procedures that apply to the FOA process.

It is suggested that a critical element of any FOA mechanism should be a clear obligation for the relevant parties to comply with the Rules or procedures that relate to the mechanism.

1.7 Registration of an FOA

The proposed Rule would require an FOA to be "Registered" by NEMMCO within a period of one hour. It is not clear from the Rule however, what is meant to be involved in registering an FOA. Turnaround of one hour is likely to require automation, and the feasibility of this would need to be assessed when the full details of submission and registration are specified.

The proposal indicates that registration of the FOA would be triggered by NEMMCO receiving a valid Notice of Futures Offset Arrangement from a Clearing Participant. However, since an FOA would need to be agreed to by both the Clearing Participant and the relevant Market Participant, there may need to be a mechanism whereby NEMMCO receives matching notices from the two parties before triggering the registration process. Otherwise, the Clearing participant would need to be empowered to act on behalf of the Market Participant. This matter would need to be clarified as part of the registration detail before timeframes are imposed on the process.

There may be merit in allowing the detail of processes such as registration of an FOA to be dealt with in procedures, as they are for reallocations, rather than anticipating the requirements of the process in the Rules.

1.8 Implementation Timeframes

Implementation of the FOA mechanism is likely to require the development of both procedures and systems. It may be possible to manage some of the systems requirements manually initially to facilitate implementation. The development of procedures will however require full consultation with stakeholders.

It is therefore important to ensure that any Rule made to support the implementation of a FOA mechanism should incorporate adequate transition periods to facilitate consultation on procedures and the subsequent development of systems. NEMMCO would be happy to provide detailed estimates of the implementation and transition timeframes likely to be required once further details become available on the proposal, but at this stage of the process it is requested that the Commission note the need for development and implementation times in its assessment and Rule drafting.

2 Modified MCL methodology

MCLs are central to the spot market prudential regime, which is relied upon by the market to protect credit providers (primarily generators) from short payment in the event of a default. NEMMCO does not have a stake in the prudential process itself, other than to ensure that it is administered with precision in accordance with the NEM Rules. Nevertheless, NEMMCO considers that changes to the current approach should be properly assessed to understand the full range of implications for Market Participants and consumers. The following comments are provided to assist the AEMC in making that assessment:

2.1 Performance of the Futures based MCL approach described in the proposal

NEMMCO understands from the description of the proposed Rule that it is intended to maintain the broad structure of the current Rules based MCL methodology[2], but to require the use of a relevant futures price in lieu of the historical average method currently used by NEMMCO to determine the forecast average spot price for the quarter in the MCL calculation. It is understood that other aspects of the MCL calculation framework would be retained unchanged under the proposal. Although this intention is clear in the descriptive material, the proposed drafting of Schedule 3.3.1 clause 2 is not clear, as it confuses the determination of volatility and average price – if the proposal is accepted, the drafting should clearly reflect the intention of calculating the average price on the basis of futures settlement prices, but not volatility.

Based on this understanding of the proposal, NEMMCO has carried out an assessment of the likely performance of the proposed MCL methodology in comparison to the current approach to MCL determination. Essentially, the comparison seeks to evaluate the correlation between the forecast average spot price for a quarter, as determined from the last 12 months historical data on the one hand and from futures on the other, with the actual average spot price for the same quarter. Figures A1 – A4 show the outcomes of that analysis for NSW, Victoria, Queensland and South Australia respectively.

Note that two different futures prices are used in the plots – the Futures Settlement Price (FSP) one day prior to the start of the quarter, and the FSP one month prior to the start of the quarter[3]. While it is desirable to use the most recent FSP in MCL calculations, it is necessary to calculate MCLs a number of weeks prior to the start of the quarter to allow time for bank guarantees to be arranged and lodged with NEMMCO, hence the need to consider the FSP one month prior to the start or the quarter.

Further to the graphical results, the statistical correlation between the relevant traces is shown in Table A1. A correlation figure of 1.0 would indicate that the value is a perfect predictor of movements in the average spot price for the quarter. A negative correlation indicates that the predictor has had a tendency to forecast movements in the quarterly price that are in the opposite direction from actual movements on balance.

[2] For a full description of the current MCL methodology, see "Method for Determining Maximum credit Limits and Prudential Margins" at:
http://www.nemmco.com.au/settlements/prudentials.htm#MethodofDeterminingMaximumCreditLimits

[3] NEMMCO wishes to thank d-Cypha Trade for providing the historical Futures Settlement Prices used in this assessment.

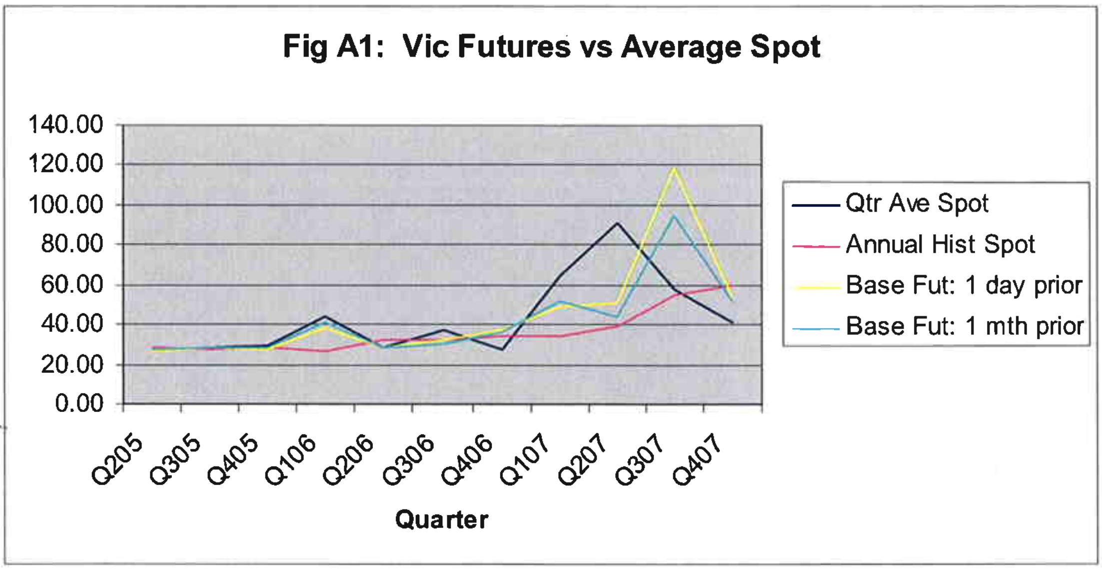
Fig A1: Vic Futures vs Average Spot
140.00
120.00
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80.00
60.00
40.00
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Q205
Q305
Q405
Q106
Q206
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Q107
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Q307
Q407
Quarter
Qtr Ave Spot
Annual Hist Spot
Base Fut: 1 day prior
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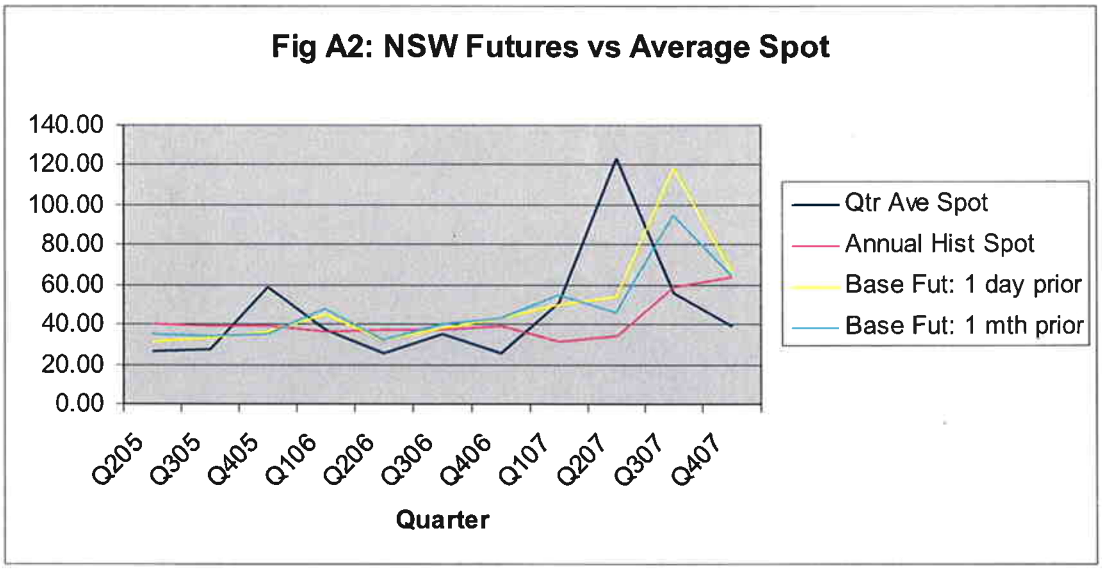
Fig A2: NSW Futures vs Average Spot
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Q205
Q305
Q405
Q106
Q206
Q306
Q406
Q107
Q207
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Q407
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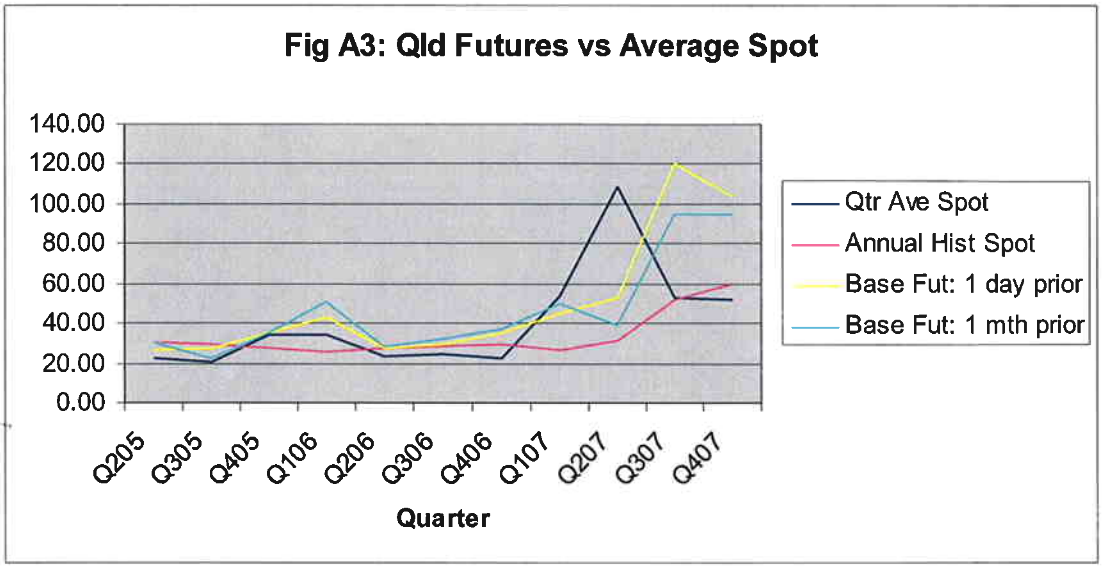
Base Fut: 1 day prior
Base Fut: 1 mth prior



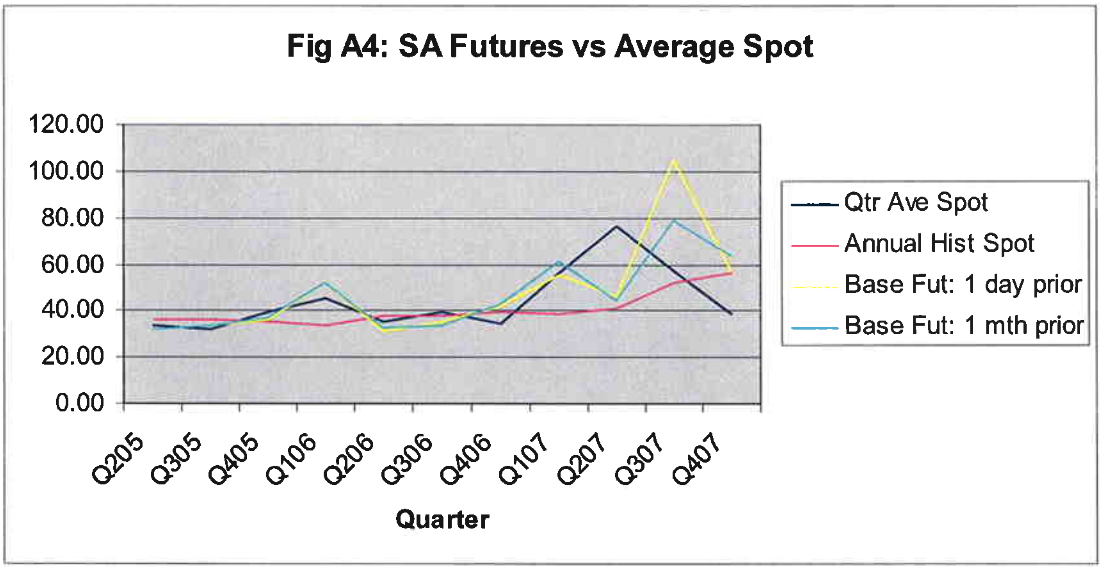


Table A1: Correlation between average quarterly spot price and various predictors

Region	12 Month Historical Average	Base Future 1 day prior	Base Future 1 month prior
Victoria	0.34	0.49	0.51
NSW	-0.11	0.28	0.20
Queensland	0.30	0.44	0.34
SA	0.25	0.48	0.48

The following observations can be drawn from the results:

- Based on the data considered (the most recent 11 quarters), base FSPs are a superior predictor of average quarterly spot prices when compared to the current approach of using the last 12 month historical average.
- In the case of the high price event in Q207, the base FSP for the subsequent quarter was materially higher than the annual historical spot price (by a factor of about 1.6 in the case of NSW). This indicates that a MCL for Q307 calculated on the basis of the FSP (one month prior to the start of the quarter) would have been higher than that calculated under the current approach, by a factor of about 1.6. This is not necessarily inappropriate, but is an important observation in view of the issues participants have raised with NEMMCO in respect of size of MCL requirements under the current approach.
- The above observation may call into question the compatibility of a FSP based MCL approach, with the current MCL framework which uses a volatility factor for all calculations. By way of example, referring to figure A2 for NSW, the FSP appears to be at a similar level to the 12 month historical average for the period from Q205 to Q406, so that a volatility factor would need to be used in conjunction with the FSP to cater for price excursions consistent with the reasonable worst case. When volatility increased in Q207 however, the futures price appears to follow the average spot price (with a lag of one quarter), suggesting that there may already be an allowance for volatility in the futures price.
- The futures based MCL would have remained high for only one quarter following the Q207 price excursion, whereas the current approach is resulting in an elevated MCL for a full 12 month period.

2.2 Scope for application of the proposal

The proposal does not discriminate between regions for which futures products are traded, and those for which no futures are available (currently Tasmania, setting aside the Snowy region). For regions where no futures prices are available, the current methodology or some other approach will presumably need to be applied. The proposed Rules drafting does not appear to address this matter clearly, but any Rule that is made as a result of the proposal should do so.

There may also be an issue with the use of futures prices in respect of regions where the liquidity of futures is insufficient to set a reliable forward price. In the extreme, no futures might be traded for a particular region and quarter, while in less extreme cases only a small number of trades might occur. It would be important to consider how the FSP is calculated by the futures exchange in each of these cases, and to determine whether there are any reasons to avoid its use. These matters do not appear to be assessed in the proposal, but it would be important for them to be considered prior to a Rule being made, and for any policy outcomes to be clearly articulated in the resulting Rule.

2.3 Effectiveness target

The MCL approach in the current Rules revolves around an effectiveness target called the "reasonable worst case", which is 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". As discussed previously, the proposed futures based approach does not change that overall concept, but uses an alternative method of determining the average spot price projection component of the methodology. The volatility factor would still be determined from historical spot price data. The change therefore seems to be aiming to meet the same effectiveness target by a different means.

A key issue here is that while forward price projections and a performance target are retained as components of the MCL process, a volatility factor of some kind is likely to be required as part of the methodology, otherwise there would be no linkage between the forward price projection and the performance target. Furthermore, it is difficult to conceive of any way the volatility factor could be forward looking – ie it will need to be determined on the basis of historical spot price data and the desired performance target.

This would suggest that primary determinants of MCLs are the forward price projection, the performance target and forward demand projections. Unfortunately, the current performance target, which is based on the number of breaches in a period, is quite imprecise – a breach could be for 1 day or for multiple days, it could be by $1,000 of participant outstandings or by $100m in outstandings for a particular participant. Looking at this another way, one breach in 48 months could allow a breach for one month in 48 months (98% probability of not being exceeded in a given month), one week in 48 months (99.5% probability of not being exceeded in a given week) or one day in 48 months (99.93% probability of not being exceeded on a given day).

A more precise approach to specifying the performance target might be to require that the MCL be set so that it is x% effective at covering participant outstandings, based on volatility information derived from a given historical period. Such an approach could take account of both the frequency and size of a potential breach, rather than just frequency. The value of "x" would need to be clearly defined in the Rules to specify the objective of the scheme, and therefore the level of protection to be afforded the market.

NEMMCO recognises that this section 2.3 raises issues that are broader than the scope of the Rule proposal, however we consider it important to raise these issues in the interest of managing expectations that the proposal addresses underlying issues with the MCL process. The Commission may also wish to consider these broader issues under section 91A of the National Electricity Law.

2.4 Previous consultation on MCL process

In September 2007, NEMMCO consulted with stakeholders on the merits of changing the current MCL approach to a seasonal methodology[4]. The consultation was motivated by the imminent increase in MCLs as a result of the Q207 spot price excursions in NSW. In that consultation, NEMMCO suggested that the MCL methodology effectively seeks to find a balance between effectiveness and cost, and a possible means of demonstrating the trade-off was published as part of the consultation. The AEMC may wish to take that consultation and the submissions made to it into account as background to the current proposal.

[4] See: http://www.nemmco.com.au/settlements/538-0002.htm

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:

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

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.

<u>Suggested Formula</u>

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).

<u>Worked examples of calculation of MCL reduction for Futures Offset Arrangements</u>

Consider: **NSW Baseload Q1 2006.**

<u>MCL calculation prior to Futures Offset Arrangement:</u>

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

<u>MCL reduction under Futures Offset Arrangement</u>

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.

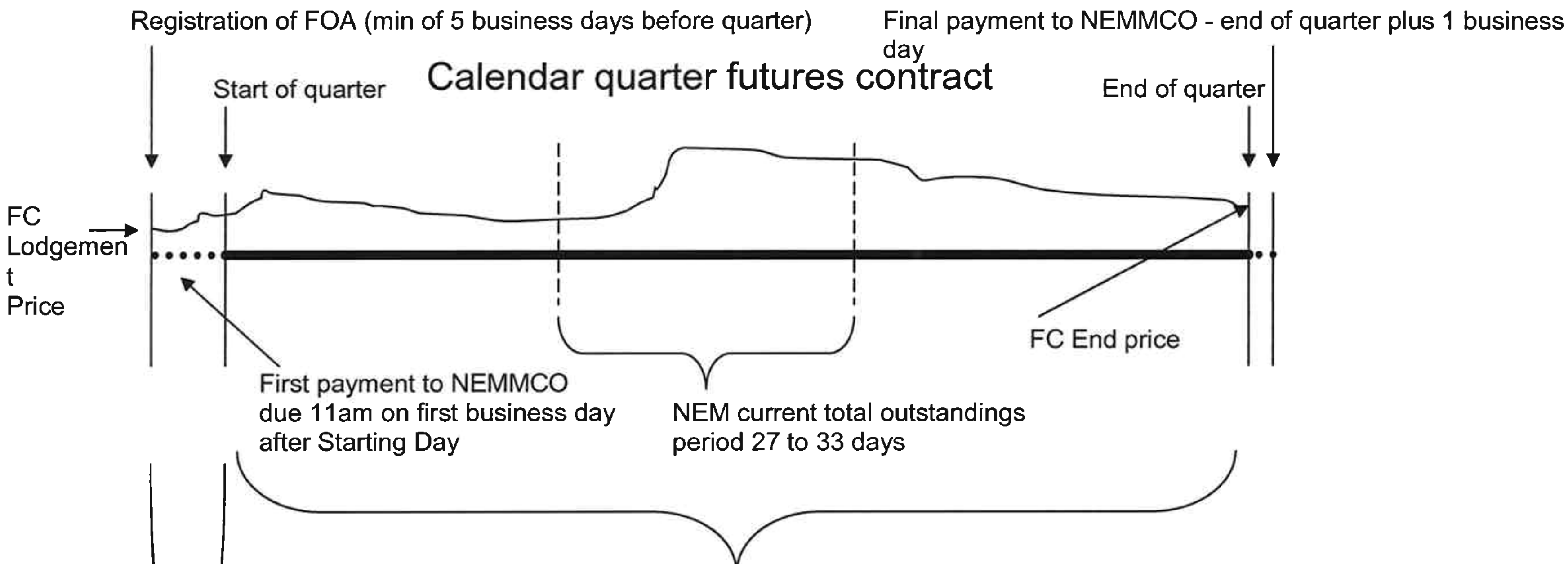
MCL Reduction = B* Max [(PR x VFR – FLP) x FLR x T, 0]

= 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)

NEMMCO

Futures Offset Arrangement



During the current quarter movements in the NEM spot price should be reflected in the changes to the futures contract price. NEMMCO is to hold those portions of futures margin payments that represent the highest futures price within the current NEM total outstandings period above the FC Lodgement price. During this period the FOA payments provide for some cover of actual NEM spot price movement.

In the period prior to the start of the current quarter, changes in the futures contract price reflect a change in expectation of the soon to commence quarter NEM spot prices. NEM credit support requirements are to be based on the FC Lodgement price. Any margin payments due to increases in the futures contract price after the registration day are to be provided to NEMMCO in lieu of the reduced MCL.
This period does not provide cover for actual NEM spot price movement.

Appendix 3

Example of Futures Offset Reallocation Payments

FC = Futures Contract
TOP = Total Outstandings Period

Days in FC 92 **Lodgement Price** $40.00

Day	Date	Day of FC	FC $ at day end	+ve Margin of Fut. Contract at 11am	Start of TOP date	Highest FC$ in TOP	Reallocation $ to NEMMCO by 11am	Amount Settled by NEMMCO	Total Realloc Held by NEMMCO
Tue	01-Jul-08	1	$40.00		01-Jun-08	$40.00			$0.00
Wed	02-Jul-08	2	$39.75	$0.00	01-Jun-08	$40.00	$0.00		$0.00
Thur	03-Jul-08	3	$40.00	$0.00	01-Jun-08	$40.00	$0.00		$0.00
Fri	04-Jul-08	4	$50.00	$552.00	01-Jun-08	$50.00	$0.00		$0.00
Sat	05-Jul-08	5			01-Jun-08	$50.00			$0.00
Sun	06-Jul-08	6			01-Jun-08	$50.00			$0.00
Mon	07-Jul-08	7	$41.00	$22,080.00	08-Jun-08	$50.00	$22,080.00	$0.00	$22,080.00
Tue	08-Jul-08	8	$40.50	$0.00	08-Jun-08	$50.00	$0.00		$22,080.00
Wed	09-Jul-08	9	$40.50	$0.00	08-Jun-08	$50.00	$0.00		$22,080.00
Thur	10-Jul-08	10	$40.50	$0.00	08-Jun-08	$50.00	$0.00		$22,080.00
Fri	11-Jul-08	11	$40.25	$0.00	15-Jun-08	$50.00	$0.00	$0.00	$22,080.00
Sat	12-Jul-08	12			15-Jun-08	$50.00			$22,080.00
Sun	13-Jul-08	13			15-Jun-08	$50.00			$22,080.00
Mon	14-Jul-08	14	$40.25	$0.00	15-Jun-08	$50.00	$0.00		$22,080.00
Tue	15-Jul-08	15	$40.00	$0.00	15-Jun-08	$50.00	$0.00		$22,080.00
Wed	16-Jul-08	16	$41.00	$0.00	15-Jun-08	$50.00	$0.00		$22,080.00
Thur	17-Jul-08	17	$44.00	$2,208.00	15-Jun-08	$50.00	$0.00		$22,080.00
Fri	18-Jul-08	18	$44.00	$6,624.00	22-Jun-08	$50.00	$0.00	$0.00	$22,080.00
Sat	19-Jul-08	19			22-Jun-08	$50.00			$22,080.00
Sun	20-Jul-08	20			22-Jun-08	$50.00			$22,080.00
Mon	21-Jul-08	21	$45.00	$0.00	22-Jun-08	$50.00	$0.00		$22,080.00
Tue	22-Jul-08	22	$44.00	$2,208.00	22-Jun-08	$50.00	$0.00		$22,080.00
Wed	23-Jul-08	23	$43.00	$0.00	22-Jun-08	$50.00	$0.00		$22,080.00
Thur	24-Jul-08	24	$43.00	$0.00	22-Jun-08	$50.00	$0.00		$22,080.00

Fri	25-Jul-08	25	$43.00	$0.00	29-Jun-08	$50.00	$0.00	$0.00	$22,080.00
Sat	26-Jul-08	26			29-Jun-08	$50.00			$22,080.00
Sun	27-Jul-08	27			29-Jun-08	$50.00			$22,080.00
Mon	28-Jul-08	28	$43.00	$0.00	29-Jun-08	$50.00	$0.00		$22,080.00
Tue	29-Jul-08	29	$40.00	$0.00	29-Jun-08	$45.00	$0.00		$22,080.00
Wed	30-Jul-08	30	$42.00	$0.00	29-Jun-08	$45.00	$0.00		$22,080.00
Thur	31-Jul-08	31	$42.00	$4,416.00	29-Jun-08	$45.00	$0.00		$22,080.00
Fri	01-Aug-08	32	$42.00	$0.00	06-Jul-08	$45.00	$0.00	$11,040.00	$11,040.00
Sat	02-Aug-08	33			06-Jul-08	$45.00			$11,040.00
Sun	03-Aug-08	34			06-Jul-08	$45.00			$11,040.00
Mon	04-Aug-08	35	$42.00	$0.00	06-Jul-08	$45.00	$0.00		$11,040.00
Tue	05-Aug-08	36	$41.00	$0.00	06-Jul-08	$45.00	$0.00		$11,040.00
Wed	06-Aug-08	37	$41.00	$0.00	06-Jul-08	$45.00	$0.00		$11,040.00
Thur	07-Aug-08	38	$41.00	$0.00	06-Jul-08	$45.00	$0.00		$11,040.00
Fri	08-Aug-08	39	$41.00	$0.00	13-Jul-08	$45.00	$0.00	$0.00	$11,040.00
Sat	09-Aug-08	40			13-Jul-08	$45.00			$11,040.00
Sun	10-Aug-08	41			13-Jul-08	$45.00			$11,040.00
Mon	11-Aug-08	42	$41.00	$0.00	13-Jul-08	$45.00	$0.00		$11,040.00
Tue	12-Aug-08	43	$42.00	$0.00	13-Jul-08	$45.00	$0.00		$11,040.00
Wed	13-Aug-08	44	$42.00	$2,208.00	13-Jul-08	$45.00	$0.00		$11,040.00
Thur	14-Aug-08	45	$44.00	$0.00	13-Jul-08	$45.00	$0.00		$11,040.00
Fri	15-Aug-08	46	$44.00	$4,416.00	20-Jul-08	$45.00	$0.00	$0.00	$11,040.00
Sat	16-Aug-08	47			20-Jul-08	$45.00			$11,040.00
Sun	17-Aug-08	48			20-Jul-08	$45.00			$11,040.00
Mon	18-Aug-08	49	$44.00	$0.00	20-Jul-08	$45.00	$0.00		$11,040.00
Tue	19-Aug-08	50	$45.00	$0.00	20-Jul-08	$45.00	$0.00		$11,040.00
Wed	20-Aug-08	51	$45.00	$2,208.00	20-Jul-08	$45.00	$0.00		$11,040.00
Thur	21-Aug-08	52	$45.00	$0.00	20-Jul-08	$45.00	$0.00		$11,040.00
Fri	22-Aug-08	53	$47.00	$0.00	27-Jul-08	$47.00	$0.00	$0.00	$11,040.00
Sat	23-Aug-08	54			27-Jul-08	$47.00			$11,040.00
Sun	24-Aug-08	55			27-Jul-08	$47.00			$11,040.00
Mon	25-Aug-08	56	$48.00	$4,416.00	27-Jul-08	$48.00	$4,416.00		$15,456.00
Tue	26-Aug-08	57	$43.00	$2,208.00	27-Jul-08	$48.00	$2,208.00		$17,664.00

Wed	27-Aug-08	58	$43.00	$0.00	27-Jul-08	$48.00	$0.00		$17,664.00
Thur	28-Aug-08	59	$43.00	$0.00	27-Jul-08	$48.00	$0.00		$17,664.00
Fri	29-Aug-08	60	$43.00	$0.00	03-Aug-08	$48.00	$0.00	$0.00	$17,664.00
Sat	30-Aug-08	61			03-Aug-08	$48.00			$17,664.00
Sun	31-Aug-08	62			03-Aug-08	$48.00			$17,664.00
Mon	01-Sep-08	63	$43.00	$0.00	03-Aug-08	$48.00	$0.00		$17,664.00
Tue	02-Sep-08	64	$44.00	$0.00	03-Aug-08	$48.00	$0.00		$17,664.00
Wed	03-Sep-08	65	$44.00	$2,208.00	03-Aug-08	$48.00	$0.00		$17,664.00
Thur	04-Sep-08	66	$44.00	$0.00	03-Aug-08	$48.00	$0.00		$17,664.00
Fri	05-Sep-08	67	$46.00	$0.00	10-Aug-08	$48.00	$0.00	$0.00	$17,664.00
Sat	06-Sep-08	68			10-Aug-08	$48.00			$17,664.00
Sun	07-Sep-08	69			10-Aug-08	$48.00			$17,664.00
Mon	08-Sep-08	70	$46.00	$4,416.00	10-Aug-08	$48.00	$0.00		$17,664.00
Tue	09-Sep-08	71	$45.00	$0.00	10-Aug-08	$48.00	$0.00		$17,664.00
Wed	10-Sep-08	72	$45.00	$0.00	10-Aug-08	$48.00	$0.00		$17,664.00
Thur	11-Sep-08	73	$45.00	$0.00	10-Aug-08	$48.00	$0.00		$17,664.00
Fri	12-Sep-08	74	$45.00	$0.00	17-Aug-08	$48.00	$0.00	$0.00	$17,664.00
Sat	13-Sep-08	75			17-Aug-08	$48.00			$17,664.00
Sun	14-Sep-08	76			17-Aug-08	$48.00			$17,664.00
Mon	15-Sep-08	77	$45.00	$0.00	17-Aug-08	$48.00	$0.00		$17,664.00
Tue	16-Sep-08	78	$43.00	$0.00	17-Aug-08	$48.00	$0.00		$17,664.00
Wed	17-Sep-08	79	$43.00	$0.00	17-Aug-08	$48.00	$0.00		$17,664.00
Thur	18-Sep-08	80	$43.00	$0.00	17-Aug-08	$48.00	$0.00		$17,664.00
Fri	19-Sep-08	81	$42.00	$0.00	24-Aug-08	$48.00	$0.00	$0.00	$17,664.00
Sat	20-Sep-08	82			24-Aug-08	$48.00			$17,664.00
Sun	21-Sep-08	83			24-Aug-08	$48.00			$17,664.00
Mon	22-Sep-08	84	$42.00	$0.00	24-Aug-08	$48.00	$0.00		$17,664.00
Tue	23-Sep-08	85	$45.00	$0.00	24-Aug-08	$48.00	$0.00		$17,664.00
Wed	24-Sep-08	86	$45.00	$6,624.00	24-Aug-08	$48.00	$0.00		$17,664.00
Thur	25-Sep-08	87	$45.00	$0.00	24-Aug-08	$48.00	$0.00		$17,664.00
Fri	26-Sep-08	88	$45.00	$0.00	31-Aug-08	$46.00	$0.00	$4,416.00	$13,248.00
Sat	27-Sep-08	89			31-Aug-08	$46.00			$13,248.00
Sun	28-Sep-08	90			31-Aug-08	$46.00			$13,248.00

Mon	29-Sep-08	91	$47.00	$0.00	31-Aug-08	$47.00	$0.00	$13,248.00
Tue	30-Sep-08	92	$51.00	$4,416.00	31-Aug-08	$51.00	$2,208.00	$15,456.00
Final				$8,832.00	31-Aug-08		$8,832.00	$24,288.00

Attachment C

Assessment of NEM Prudential Processes and Defaults Risks

The following is an extract from a draft consultancy brief that was developed with the intent of procuring expert advice on the to provide some risk assessment of the FOA process.

Assumptions and current NEM Processes:

- NEM spot settlement occurs weekly, 20 business days in arrears. A preliminary statement is issued on business day 5, a final statement issued on business day 18, with cash due at 10.30am on business day 20.
- NEM Participants Total Outstandings (consumed but not yet paid for electricity) have accrued over the last 27 to 33 calendar days.
- Volatility in NEM Spot price can be extreme – effectively capped at 7.5 hours at $10,000/MWh over a rolling 7 day period via the cumulative price threshold process.
- Historical NEM prices have been about $33/MWh over recent years. Calendar quarter futures contract prices in NSW Q2 2007 increased to as much $123.38/ MWh. Four hours at maximum price can more than double a NEM participant's Total Outstandings accumulated over the last 27 days of average prices. One hour at maximum price can breach credit support such as bank guarantees.
- NEMMCO determines a Maximum Credit Limit (MCL) for each NEM Market Participant.
- The MCL is set at 42 days of reasonable worst case exposure (much less than maximum exposure). In practice the greatest 42 day exposure over the last 12 months is effectively utilised.
- NEM Participants place bank guarantees as credit support with NEMMCO for at least the level of their MCL.
- A reallocation process exists to enable the credit position or the anticipated credit position of one NEM Participant to be substituted for the debit position of another is available on the agreement of both parties and NEMMCO.
- NEM Participant's are not to allow their Total Outstandings to exceed a Trading Limit (TL), typically 84% of the MCL.
- NEMMCO reviews Total Outstandings each business day morning (8.00am) by estimating exposure to midnight the previous night.
- NEM Participants are given to 10.30am to address any midnight excesses. The means to address include: cash, additional bank guarantees or reallocations.
- When a NEM Participant is right on their TL, they are required to settle yesterday's consumption, to midnight, by 10:30am the next morning.

Possible NEM Defaults and Responses

There are four main NEM Prudential default scenarios:

1. The NEM Market Participant does not maintain adequate credit support
    a. This can be assessed at any time but would usually relate to an expiring bank guarantee, exchange of bank guarantee or cancellation of a reallocation or a FOA that was in lieu of part of the required MCL. Where Credit support ceases to be valid the NEM participant has 24 hours to replace the Credit support.

b. NEMMCO issues a default notice requiring rectification by 1.00pm next business day.
c. Failure to deliver on the Default Notice enables NEMMCO to issue a Suspension Notice and arrange for the Retailer's customers to be transferred to another party. (Total time for (a), (b) and (c), is possibly 7 days)
d. NEMMCO to draw on credit support to recover any unpaid Total Outstanding amounts up to the existing level of bank guarantees to the point of removal of all customers.

   Note – Amounts owing in excess of bank guarantees are unsecured (see Case Study).

2. The NEM Market Participant does not maintain Total Outstandings below their Trading Limit
   a. This is usually assessed at 8.00am each business day but the Rules allow it to be assessed at any time, however the metering or estimated metering to determine electricity consumption would make this difficult. NEM Participants are required to provide additional cash, bank guarantees or reallocations in order to have their Total Outstandings remain under their Trading Limits.
   b. NEMMCO issues a Call Notice by 12 noon if Total Outstandings exceed Trading Limits. The Call Notice requires the Total Outstandings to be reduced to typical values, not just by the amount of breach of the TL, by 11am the next business day. A Call Notice issued after 12 noon is deemed to have been issued on the next business day.
   c. Failure to deliver on the Call Notice is a Default Event and enables NEMMCO to issue a Default Notice for the default to be rectified by 1pm next business day.
   d. Failure to deliver on the Default Notice enables NEMMCO to issue a Suspension Notice and arrange for the Retailer's customers to be transferred to another party. (Total time for (b), (c) and (d), is possibly 7 days)
   e. NEMMCO to draw on credit support to recover any Total Outstanding amounts.

3. The NEM Market Participant does not make a complete settlement payment due at 10.30am on settlement day.
   a. NEMMCO to draw on credit support to recover the Total Outstanding amounts with intention to pay NEM Settlement creditors that same day.
   b. The NEM Market Participant is required to restore drawn down credit support in 24 hours.
   c. If not restored NEMMCO issues a default notice requiring rectification by 1.00pm next business day.
   d. Failure to deliver on the Default Notice enables NEMMCO to issue a Suspension Notice and arrange for the Retailer's customers to be transferred to another party. (Total time for (a), and (b), is possibly 7 days)
   e. NEMMCO to draw on any remaining credit support to recover any Total Outstanding amounts.

4. The NEM Market Participant ceases or threatens to cease business, or has a receiver or administrator appointed.
   a. NEMMCO issues a default notice requiring rectification by 1.00pm next business day.

b. Failure to deliver on the Default Notice or advise that they are not able to satisfy the Default Notice enables NEMMCO to issue a Suspension Notice and arrange for the Retailer's customers to be transferred to another party. (Total time for (a), and (b), is possibly 7 days)

c. NEMMCO to draw on credit support to recover any unpaid Total Outstanding amounts to the point of removal of all customers.

Future Offset Arrangement Considerations

The operation of a FOA will result in a lower requirement for NEM Credit Support.
The FOA is replacing:
- 4 weeks of NEM settlement payment risk, and a reasonably worst case 6 week exposure covered by a bank guarantee, with;
- a regular cash payment (firm up to 42 business hours past) to smooth the 4 weeks of NEM settlement payment risk but with a lower bank guarantee.

What is the value of a FOA in comparison to forgone bank guarantee?

1. It is proposed to reduce the required level of Credit Support (the Maximum Credit Limit) to a lower value in recognition of the value in the FOA of managing a NEM participants Total Outstandings to a lower value. If the non FOA MCL was X based on a historical price and price volatility and if a FOA delivered a perfectly managed Total Outstanding position with no volatility the required level of MCL would be Y, based on the futures lodgement price and no volatility, then due to the inherent risks and uncertainties of the FOA the final MCL requirement is to be set as:
$X - B \times (X - Y)$ where B is a factor between 0 and 1 and $B \times (X - Y)$ is the reduction in MCL.

2. When a default event occurs, has the reduced Total Outstandings due to the FOA compensated for the reduced drawdown from the alternate bank guarantee?

   NEMMCO will retain bank guarantees as outlined in 1. above and any variation margin payments received. The 'B factor' for calculating the MCL reduction for Futures Offset Arrangements should adequately compensate for a 'reasonable worst case scenario'.

   The MCL is clearly designed to cover a 'reasonable worst case scenario' and is not without its limitations (see Case Study below). FOAs, on the other hand, cover unlimited up-side risk albeit with some limitations relating to 'market risk'. In other words, the risk profile of FOAs are different to the bank guarantees underpinning the MCL such that it is difficult and inappropriate to draw 'like with like' comparisons.

   Independent risk analysis is needed to establish a framework to calculate "B" such that systemic risk to the NEM is not increased compared with the status quo.

3. The FOA can be terminated unilaterally by the Reallocator with no notice and no obligation to make good unmade payments.

Where a FOA is cancelled the Participant has 24 hours to replace the credit support.

NEMMCO will retain bank guarantee as outlined in 1. above together with any variation margins paid prior to the termination.

4. Will a NEM default event trigger the termination of the FOA? i.e. what is the extent of correlation of NEM default and FOA termination.

   NEMMCO will retain bank guarantees as outlined in 1. above and any variation margins paid prior to the default.

   In case study below the futures price at the end of Q2 2007 exceeded the MCL such that in a default scenario NEMMCO could have drawn down bank guarantees and used variation margins to the value of the MCL.

5. Will the premature termination of an FOA create a NEM default due to the short notice lack of credit support from the full (no FOA) credit support requirement?

   This needs to consider the extent of credit support likely to be held.

6. Maximum market risk from FOA is 42 business hours 10 minutes worst case. ie the end of day settlement futures contract value is set at 4:50pm on day 1 based on trading up to that time. From that time the NEM Spot price will not be reflected into the margin payment until 11 am on business day 3. Due to public holidays and weekends this could be much longer.

   At all times futures prices reflect the market's expectation of future price movements including public holidays. As such an expectation of future price may already be factored into the futures price.

   As before, NEMMCO will retain bank guarantees as outlined in 1. above plus any variation margins paid prior to the default.

7. The FOA covers for the upside price risk when operative (effectively for about 25 days but with 42h10m of market risk or a period when it may have no benefit.)

   There is no theoretical limit to coverage for upside price risk. See Q2 2007 case study where the futures price exceeded the MCL.

8. Is there a risk that the FOA will not follow a NEM Spot movement due to general expectations of higher prices already being factored into the futures price?

   NEMMCO will continue to hold bank guarantees as outlined in 1. above plus variation margins already received.

9. The bank guarantee has only a reasonable worst case cover of the upside price risk (i.e. it does not cover the maximum possible) for 42 days with no added market risk time. ie it is firm for draw down.

NEM Participants are required to maintain their Total Outstandings less than their trading Limit. When their Total Outstandings approach their Trading Limits the NEM participants is required to provide additional cash, bank guarantees or reallocations. The growing level of credit support in Figure 2 shows the results of this process. Under non default conditions a prudential margin between the Trading Limit and the level of credit support will be maintained.

A FOA has no theoretical limitation to the upside price risk.

10. The Reallocator does not provide credit support or any bank guarantee against their payment obligations as the FOA is not firm and can be terminated at any time for any reason by the reallocator.

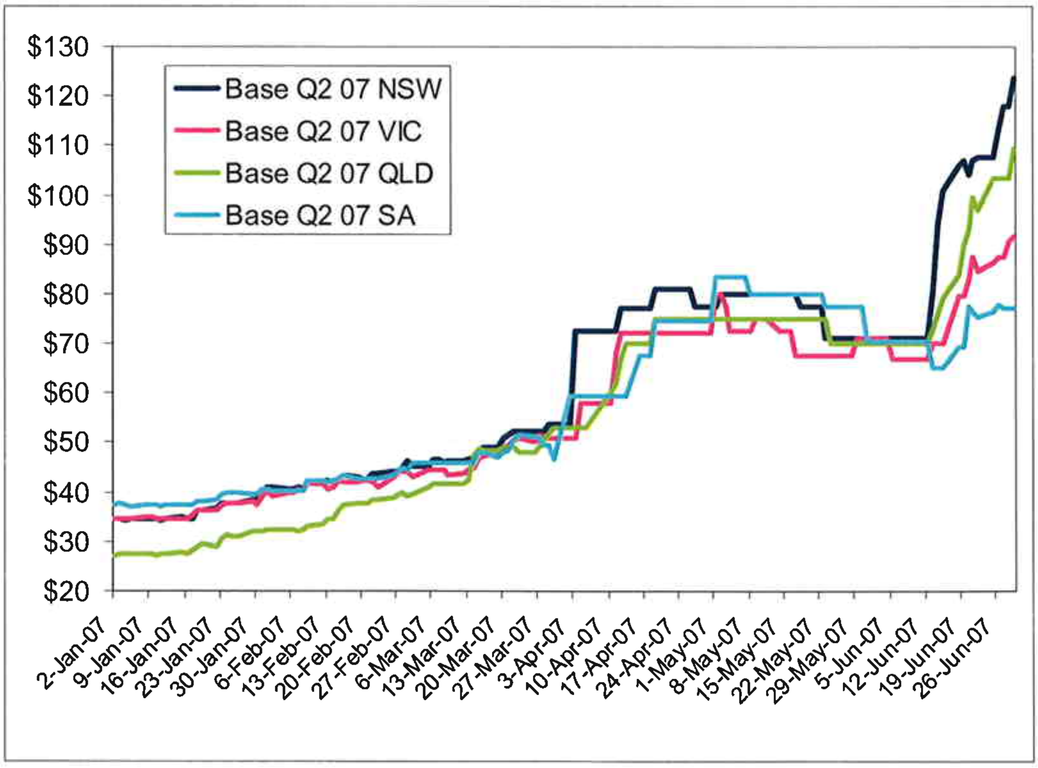
    The Reallocator is not to cancel the FOA on the request of the NEM participant without NEMMCO's agreement.

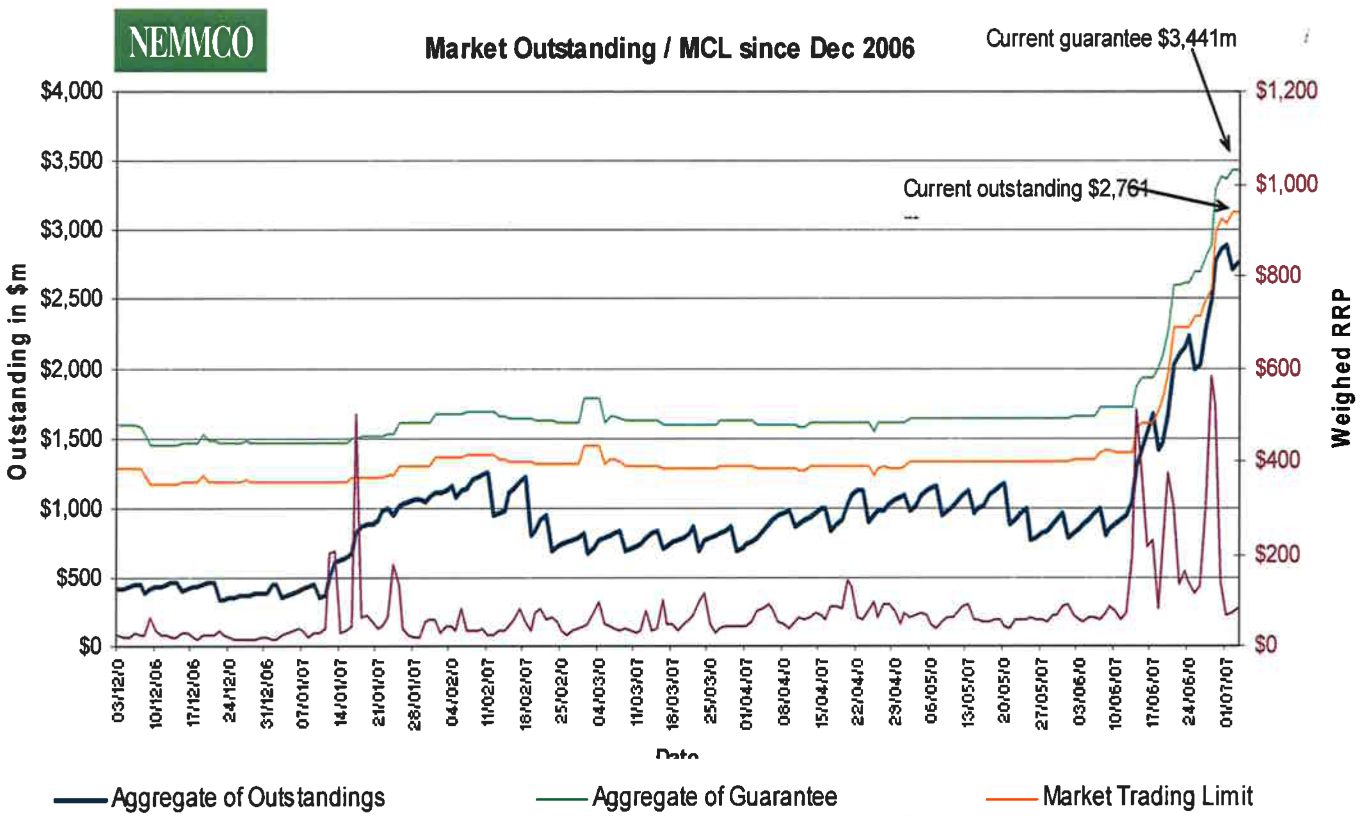
11. Under an insolvency of a NEM Participant do payments from a FOA have a greater chance of "claw back" than a bank guarantee?

    Legal advice is to be sought.

Case Study

The following chart illustrates the futures price for Q2 2007 from 1 January to 30 June 2007.




NEMMCO
Market Outstanding / MCL since Dec 2006
Current guarantee $3,441m
Current outstanding $2,761
Outstanding in $m
$4,000
$3,500
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
Weighed RRP
$1,200
$1,000
$800
$600
$400
$200
$0
03/12/0
10/12/06
17/12/06
24/12/0
31/12/06
07/01/07
14/01/07
21/01/07
28/01/07
04/02/0
11/02/07
18/02/07
25/02/0
04/03/0
11/03/07
18/03/07
25/03/0
01/04/07
08/04/0
15/04/07
22/04/0
29/04/0
06/05/0
13/05/07
20/05/0
27/05/07
03/06/0
10/06/07
17/06/07
24/06/0
01/07/07
Aggregate of Outstandings
Aggregate of Guarantee
Market Trading Limit

Example of FOA Payments NSW Base

FC = Futures Contract
TOP = Total Outstandings Period

Days in FC **91**

Lodgement Price $52.25

Day	Date	FC $ at day end	+ve Margin of Fut. Contract at 11am	Start of TOP date	Highest FC$ in TOP	Reallocation $ to NEMMCO by 11am	Amount Settled by NEMMCO	Total Realloc Held by NEMMCO
Sun	01-Apr-07			04-Mar-07	$52.25			$0.00
Mon	02-Apr-07	$53.75		04-Mar-07	$53.75			$0.00
Tue	03-Apr-07	$72.50	$3,276.00	04-Mar-07	$72.50	$3,276.00		$3,276.00
Wed	04-Apr-07	$72.50	$40,950.00	04-Mar-07	$72.50	$40,950.00		$44,226.00
Thur	05-Apr-07	$72.50	$0.00	04-Mar-07	$72.50	$0.00		$44,226.00
Fri	06-Apr-07			04-Mar-07	$72.50			$44,226.00
Sat	07-Apr-07			04-Mar-07	$72.50			$44,226.00
Sun	08-Apr-07			11-Mar-07	$72.50			$44,226.00
Mon	09-Apr-07			11-Mar-07	$72.50			$44,226.00
Tue	10-Apr-07	$72.50	$0.00	11-Mar-07	$72.50	$0.00		$44,226.00
Wed	11-Apr-07	$72.50	$0.00	11-Mar-07	$72.50	$0.00		$44,226.00
Thur	12-Apr-07	$77.00	$0.00	11-Mar-07	$77.00	$0.00		$44,226.00
Fri	13-Apr-07	$77.00	$9,828.00	11-Mar-07	$77.00	$9,828.00		$54,054.00
Sat	14-Apr-07			11-Mar-07	$77.00			$54,054.00
Sun	15-Apr-07			18-Mar-07	$77.00			$54,054.00
Mon	16-Apr-07	$77.00	$0.00	18-Mar-07	$77.00	$0.00		$54,054.00
Tue	17-Apr-07	$77.00	$0.00	18-Mar-07	$77.00	$0.00		$54,054.00
Wed	18-Apr-07	$77.00	$0.00	18-Mar-07	$77.00	$0.00		$54,054.00
Thur	19-Apr-07	$81.00	$0.00	18-Mar-07	$81.00	$0.00		$54,054.00
Fri	20-Apr-07	$81.00	$8,736.00	18-Mar-07	$81.00	$8,736.00		$62,790.00
Sat	21-Apr-07			18-Mar-07	$81.00			$62,790.00
Sun	22-Apr-07			25-Mar-07	$81.00			$62,790.00
Mon	23-Apr-07	$81.00	$0.00	25-Mar-07	$81.00	$0.00		$62,790.00
Tue	24-Apr-07	$81.00	$0.00	25-Mar-07	$81.00	$0.00		$62,790.00

Wed	25-Apr-07	$81.00	$0.00	25-Mar-07	$81.00	$0.00		$62,790.00
Thur	26-Apr-07	$81.00	$0.00	25-Mar-07	$81.00	$0.00		$62,790.00
Fri	27-Apr-07	$77.50	$0.00	25-Mar-07	$81.00	$0.00		$62,790.00
Sat	28-Apr-07			25-Mar-07	$81.00			$62,790.00
Sun	29-Apr-07			01-Apr-07	$81.00			$62,790.00
Mon	30-Apr-07	$77.50	$0.00	01-Apr-07	$81.00	$0.00		$62,790.00
Tue	01-May-07	$77.50	$0.00	01-Apr-07	$81.00	$0.00		$62,790.00
Wed	02-May-07	$80.00	$0.00	01-Apr-07	$81.00	$0.00		$62,790.00
Thur	03-May-07	$80.00	$5,460.00	01-Apr-07	$81.00	$0.00	$0.00	$62,790.00
Fri	04-May-07	$80.00	$0.00	01-Apr-07	$81.00	$0.00		$62,790.00
Sat	05-May-07			01-Apr-07	$81.00			$62,790.00
Sun	06-May-07			08-Apr-07	$81.00			$62,790.00
Mon	07-May-07	$80.00	$0.00	08-Apr-07	$81.00	$0.00		$62,790.00
Tue	08-May-07	$80.00	$0.00	08-Apr-07	$81.00	$0.00		$62,790.00
Wed	09-May-07	$80.00	$0.00	08-Apr-07	$81.00	$0.00	$0.00	$62,790.00
Thur	10-May-07	$80.00	$0.00	08-Apr-07	$81.00	$0.00		$62,790.00
Fri	11-May-07	$80.00	$0.00	08-Apr-07	$81.00	$0.00		$62,790.00
Sat	12-May-07			08-Apr-07	$81.00			$62,790.00
Sun	13-May-07			15-Apr-07	$81.00			$62,790.00
Mon	14-May-07	$80.00	$0.00	15-Apr-07	$81.00	$0.00		$62,790.00
Tue	15-May-07	$80.00	$0.00	15-Apr-07	$81.00	$0.00		$62,790.00
Wed	16-May-07	$80.00	$0.00	15-Apr-07	$81.00	$0.00	$0.00	$62,790.00
Thur	17-May-07	$80.00	$0.00	15-Apr-07	$81.00	$0.00		$62,790.00
Fri	18-May-07	$77.50	$0.00	15-Apr-07	$81.00	$0.00		$62,790.00
Sat	19-May-07			15-Apr-07	$81.00			$62,790.00
Sun	20-May-07			22-Apr-07	$81.00			$62,790.00
Mon	21-May-07	$77.50	$0.00	22-Apr-07	$81.00	$0.00		$62,790.00
Tue	22-May-07	$77.50	$0.00	22-Apr-07	$81.00	$0.00	$0.00	$62,790.00
Wed	23-May-07	$71.25	$0.00	22-Apr-07	$81.00	$0.00		$62,790.00
Thur	24-May-07	$71.25	$0.00	22-Apr-07	$81.00	$0.00		$62,790.00
Fri	25-May-07	$71.25	$0.00	22-Apr-07	$81.00	$0.00		$62,790.00
Sat	26-May-07			22-Apr-07	$81.00			$62,790.00
Sun	27-May-07			29-Apr-07	$80.00			$62,790.00
Mon	28-May-07	$71.25	$0.00	29-Apr-07	$80.00	$0.00		$62,790.00
Tue	29-May-07	$71.25	$0.00	29-Apr-07	$80.00	$0.00	$0.00	$62,790.00

Wed	30-May-07	$71.25	$0.00	29-Apr-07	$80.00	$0.00		$62,790.00
Thur	31-May-07	$71.25	$0.00	29-Apr-07	$80.00	$0.00		$62,790.00
Fri	01-Jun-07	$71.25	$0.00	29-Apr-07	$80.00	$0.00		$62,790.00
Sat	02-Jun-07			29-Apr-07	$80.00			$62,790.00
Sun	03-Jun-07			06-May-07	$80.00			$62,790.00
Mon	04-Jun-07	$71.25	$0.00	06-May-07	$80.00	$0.00		$62,790.00
Tue	05-Jun-07	$71.25	$0.00	06-May-07	$80.00	$0.00	$0.00	$62,790.00
Wed	06-Jun-07	$71.25	$0.00	06-May-07	$80.00	$0.00		$62,790.00
Thur	07-Jun-07	$71.25	$0.00	06-May-07	$80.00	$0.00		$62,790.00
Fri	08-Jun-07	$71.25	$0.00	06-May-07	$80.00	$0.00		$62,790.00
Sat	09-Jun-07			06-May-07	$80.00			$62,790.00
Sun	10-Jun-07			13-May-07	$80.00			$62,790.00
Mon	11-Jun-07	$71.25	$0.00	13-May-07	$80.00	$0.00		$62,790.00
Tue	12-Jun-07	$71.25	$0.00	13-May-07	$80.00	$0.00		$62,790.00
Wed	13-Jun-07	$80.50	$0.00	13-May-07	$80.50	$0.00	$0.00	$62,790.00
Thur	14-Jun-07	$94.00	$20,202.00	13-May-07	$94.00	$1,092.00		$63,882.00
Fri	15-Jun-07	$101.00	$29,484.00	13-May-07	$101.00	$29,484.00		$93,366.00
Sat	16-Jun-07			13-May-07	$101.00			$93,366.00
Sun	17-Jun-07			20-May-07	$101.00			$93,366.00
Mon	18-Jun-07	$106.00	$15,288.00	20-May-07	$106.00	$15,288.00		$108,654.00
Tue	19-Jun-07	$107.00	$10,920.00	20-May-07	$107.00	$10,920.00		$119,574.00
Wed	20-Jun-07	$104.00	$2,184.00	20-May-07	$107.00	$2,184.00	$0.00	$121,758.00
Thur	21-Jun-07	$107.00	$0.00	20-May-07	$107.00	$0.00		$121,758.00
Fri	22-Jun-07	$107.50	$6,552.00	20-May-07	$107.50	$0.00		$121,758.00
Sat	23-Jun-07			20-May-07	$107.50			$121,758.00
Sun	24-Jun-07			27-May-07	$107.50			$121,758.00
Mon	25-Jun-07	$107.50	$1,092.00	27-May-07	$107.50	$1,092.00		$122,850.00
Tue	26-Jun-07	$113.00	$0.00	27-May-07	$113.00	$0.00		$122,850.00
Wed	27-Jun-07	$118.00	$12,012.00	27-May-07	$118.00	$12,012.00	$0.00	$134,862.00
Thur	28-Jun-07	$118.00	$10,920.00	27-May-07	$118.00	$10,920.00		$145,782.00
Fri	29-Jun-07	$123.75	$0.00	27-May-07	$123.75	$0.00		$145,782.00
Sat	30-Jun-07			27-May-07	$123.75			$145,782.00
Sun	01-Jul-07			03-Jun-07	$123.75			$145,782.00
Mon	02-Jul-07	**Final**	$12,558.00	03-Jun-07	$123.75	$12,558.00		$158,340.00